Ontario

Ministry of Transportation

TRANSPORTATION ENVIRONMENTAL STUDY REPORT

Technical Appendices – Volume I

Preliminary Design and Environmental Assessment for the Rehabilitation / Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street

GWP 4170-13-00

City of Ottawa

May 2024



BT ENGINEERING

Technical Appendices Volume I

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Appendix A-1

Notices of Study Commencement and Initial Correspondence

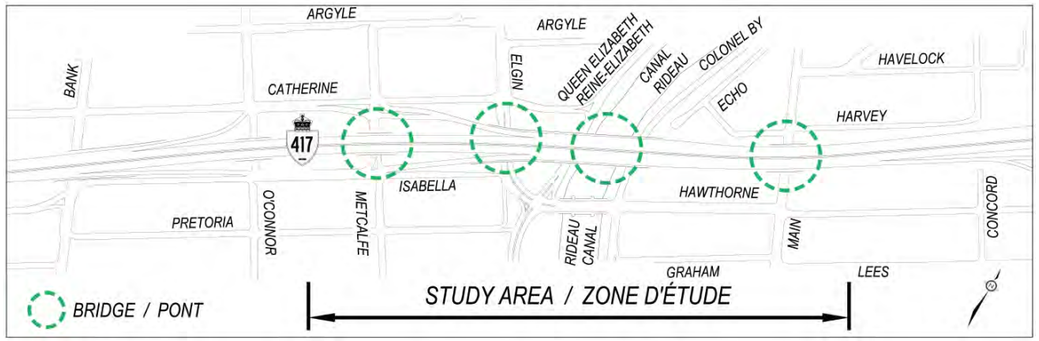
BT ENGINEERING

ONTARIO GOVERNMENT NOTICE

NOTICE OF STUDY COMMENCEMENT

Ottawa Queensway Downtown Bridges Environmental Assessment Study
Metcalfe Street to Main Street
Group Work Project 4170-13-00

THE STUDY - The Ontario Ministry of Transportation (MTO) has retained BT Engineering Inc. (BTE) to undertake a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study will determine the appropriate strategy for the rehabilitation or replacement of these bridges. The Queensway Corridor Study Area and the four Local Study Areas are shown on the map below.



The area of study includes three levels of analysis. The “Broader Study Area” includes the geographic area of the City where temporary short term offsite detour routes are being considered for freeway closures. The “Immediate Study Area” will be defined to focus on the Queensway Corridor generally within or adjacent to the MTO right-of-way that will include the bridge alternatives and possible staging areas for candidate bridge construction sites needed for rapid replacement options. Within this Study Area, we will also identify “Local Study Areas” at each of the bridge locations along with potential candidate construction staging sites necessary for the construction of bridge segments for the rapid replacement options. Environmental inventories and secondary source reviews will be carried out within the limits of the “Immediate and Local Study Areas” and at the potential construction staging sites.

The Study will complete the preliminary design and receive EA clearance to proceed to Detail Design resulting in construction projects at each of the 4 sites for a total of 7 bridges. There are two types of bridge projects (replacement or rehabilitation) and two types of bridges (rigid frames and beam structures (Rideau Canal)). They are distinctly different bridge types and projects but the inter-relationship between the projects is that there may be common traffic staging, and the possible replacement of the Rideau Canal Bridge may trigger an elevation increase (if the mid-span of the Rideau Canal Bridge increases) that may require profile changes to the adjacent bridges (possibly triggering advance replacement).

THE PROCESS - This study will follow the *Class Environmental Assessment for Provincial Transportation Facilities (2000)* planning process for a Group “B” project, with the opportunity for external agency and public consultation throughout the project. Two Public Information Centres (PICs) will be scheduled to: present the project process, design alternatives, analysis and evaluation results and preferred designs to

agencies and members of the public; to obtain comments; and to discuss any concerns with regards to the proposed undertaking. Notices providing the date, time, and location of the PICs will be published in the Ottawa Citizen and Le Droit.

Upon completion of this study, a Transportation Environmental Study Report (TESR) will be prepared and made available for a 30-day public review period. A further notice of TESR Submission will be published in the Ottawa Citizen and Le Droit at that time.

COMMENTS - We are interested in hearing any comments that you may have regarding this study. You are encouraged to make your concerns and input known to the Project Team at your earliest opportunity. Early communication of concerns in the study allows the greatest opportunity to address them. If you wish to obtain additional information or provide comments, or wish to be added to the project mailing list, please contact the Consultant Project Manager or MTO Senior Project Engineer listed below:

Steve Taylor, P. Eng., Project Manager
BT Engineering
100 Craig Henry Drive , Suite 201
Ottawa, Ontario, K2G 5W3
Tel. (613) 228-4813
Toll Free 1-855-228-4813
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steven.taylor@bteng.ca

David Lindensmith, P. Eng., Senior Project Engineer
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1355 John Counter Boulevard
Kingston, Ontario, K7L 5A3
Tel. (613) 547-1740
Toll Free 1-800-267-0295
Fax (613) 540-5106
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WEBSITE – www.queenswaydowntownbridges.com will be created and updated regularly in order to provide the following information: background information; current project status; Frequently Asked Questions and Answers; project schedule; contact information; and serve as an additional means for you to communicate your comments and concerns. You are encouraged to keep up-to-date on the project by regularly visiting the website.

ACCESSIBILITY - If you have any accessibility requirements in order to participate in this project please contact one of the Project Team members listed above.

All information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act (2009)*. With the exception of personal information, all comments will become part of the public record.

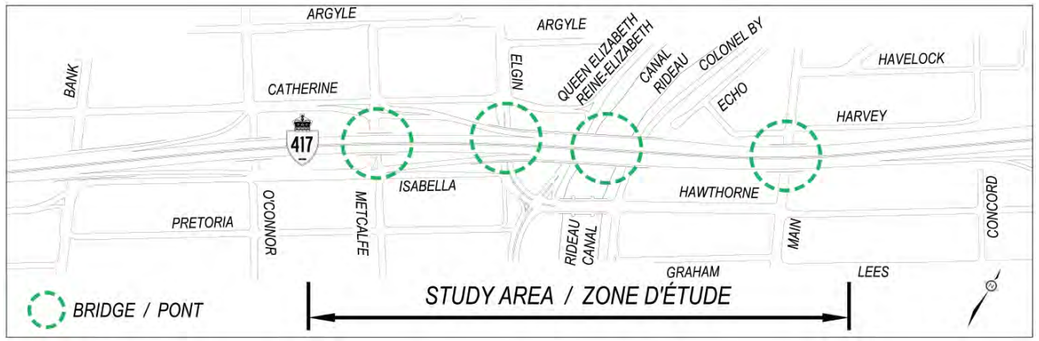
Pour des renseignements en français veuillez communiquer avec Daniel Riendeau au: (613) 228-4813 ou daniel.riendeau@bteng.ca

AVIS DU GOUVERNEMENT DE L'ONTARIO

AVIS DE DÉBUT D'ÉTUDE

Étude d'évaluation environnementale des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main GWP 4170-13-00

L'ÉTUDE – Le ministère des Transports de l'Ontario (MTO) a retenu les services de la firme BT Engineering (BTE) pour réaliser une étude de conception préliminaire et d'évaluation environnementale pour la réfection ou le remplacement de sept ponts (quatre emplacements) sur l'autoroute 417 (Queensway) à Ottawa entre les rues Metcalfe et Main, incluant le pont du canal Rideau. L'étude déterminera le programme approprié de réfection ou de remplacement de ces ponts. La carte ci-dessous montre la zone d'étude du corridor de l'autoroute 417 et les quatre zones d'étude locales.



La zone d'étude comprend trois niveaux d'analyse. La « zone d'étude élargie » couvre le secteur géographique de la ville à l'intérieur duquel des itinéraires de détour temporaires sont envisagés en cas de fermeture de voies sur l'autoroute. La « zone d'étude immédiate » correspondra à la partie du corridor de l'autoroute 417 généralement incluse dans l'emprise du MTO ou adjacentes à celle-ci qui contiendra les modifications de pont proposées ainsi que les aires d'assemblage là où le remplacement rapide d'un pont est envisagé. À l'intérieur de cette zone d'étude seront aussi identifiées des « zones d'étude locales » à chacun des emplacements de pont ainsi que des aires d'assemblage, nécessaires à la construction de segments de pont dans les cas de remplacement rapide. Des inventaires environnementaux ainsi que la consultation de sources secondaires seront effectués dans les limites des « zones d'étude immédiate et locales » ainsi qu'aux aires d'assemblage potentielles.

L'étude complétera la conception préliminaire et permettra d'obtenir, sur le plan environnemental, l'autorisation de passer à l'étape de la conception détaillée pour chacun des quatre emplacements couvrant les sept ponts. Bien que les projets de pont soient de deux natures différentes (remplacement, réfection) et qu'on retrouve deux types de structures (cadres rigides et, dans le cas du canal Rideau, poutres), l'interdépendance de ces projets rend possible une gestion commune de la circulation. En outre, le remplacement possible du pont du canal Rideau est susceptible d'en augmenter la hauteur (s'il est rehaussé à mi-travée), ce qui pourrait nécessiter des changements de profil des ponts voisins (et peut-être hâter leur remplacement).

LE PROCESSUS – L'étude suivra le processus de planification établi par *L'évaluation environnementale de portée générale pour les installations provinciales de transportation* (2000) pour les projets du

groupe B, et les organismes externes et le public seront consultés tout au long du projet. Deux séances d'information publique (SIP) seront prévues afin de : présenter aux organismes et au public le processus du projet, les alternatives de conception, l'analyse et l'évaluation des résultats et les alternatives préférées; obtenir des commentaires; et discuter de toute préoccupation concernant le projet proposé. Des avis indiquant la date, l'heure et le lieu des SIP seront publiés dans l'*Ottawa Citizen* et dans *Le Droit*.

Une fois l'étude terminée, un rapport d'étude environnementale sur les transports (REET) sera préparé et fera l'objet d'une période d'examen public de 30 jours. Un avis de dépôt du REET sera alors publié dans l'*Ottawa Citizen* et *Le Droit*.

COMMENTAIRES – Les commentaires que vous pourriez avoir au sujet de l'étude nous intéressent. Nous vous invitons à faire connaître votre avis et vos préoccupations à l'équipe du projet dès que possible. Il nous sera d'autant plus facile de répondre à vos préoccupations que vous nous les communiquez tôt au cours de l'étude. Si vous souhaitez obtenir d'autres renseignements, faire des commentaires ou ajouter votre nom à la liste d'envoi du projet, veuillez communiquer avec l'une ou l'autre des personnes suivantes :

Steve Taylor, P. Eng.,
chargé de projet
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steven.taylor@bteng.ca

David Lindensmith, P. Eng.,
ingénieur principal de projet
Ministère des Transports
1355, boulevard John Counter
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Tél. : 613-547-1740
Sans frais : 1-800-267-0295
Télécopie : 613-540-5106
dave.lindensmith@ontario.ca

SITE WEB – Le site **www.queenswaydowntownbridges.com** sera créé et mis à jour régulièrement avec les informations suivantes : renseignements généraux, état d'avancement du projet, réponses aux questions fréquentes, calendrier du projet et coordonnées des personnes-ressources. Il sera aussi un autre moyen de communiquer vos commentaires et vos préoccupations. Nous vous encourageons à vous tenir à jour sur le projet en le visitant régulièrement.

ACCESSIBILITÉ – Si vous avez des besoins particuliers en matière d'accessibilité pour participer au projet, veuillez communiquer avec l'un des membres de l'équipe de projet mentionnés ci-dessus.

Tous les renseignements seront recueillis en conformité avec la *Loi sur l'accès à l'information et la protection de la vie privée* de 2009. À l'exception des renseignements personnels, tous les commentaires seront publics.

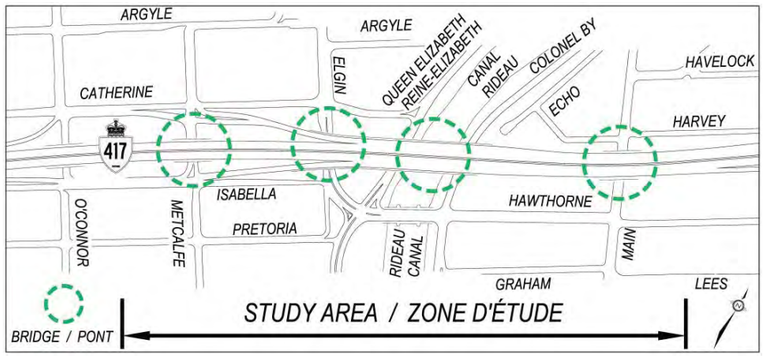
Pour des renseignements en français veuillez communiquer avec Daniel Riendeau au 613-228-4813 ou daniel.riendeau@bteng.ca

ONTARIO GOVERNMENT NOTICE

Notice of Public Information Centre #1

Ottawa Queensway Downtown Bridges Environmental Assessment Study
Metcalfe Street to Main Street
Group Work Project 4170-13-00

THE STUDY - The **Ontario Ministry of Transportation (MTO)** has retained **BT Engineering Inc. (BTE)** to undertake a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study will determine the appropriate strategy for the rehabilitation or replacement of these bridges.



THE PROCESS - This study is following the *Class Environmental Assessment for Provincial Transportation Facilities (2000)* planning process for a Group "B" project, with the opportunity for external agency and public consultation throughout the project. The first Public Information Centre (PIC) is being held at this key point in the study to provide the public with information regarding the study and to receive public input. The PIC will be 'drop in' format. Representatives of the MTO and BTE will be in attendance to receive comments and answer questions about the study.

MTO cordially invites you to the first PIC. The purpose of the meeting will be to present the:

- Project goals and the problem and opportunity statement;
- Draft Study Design (Work Plan) for comments;
- Assessment of Alternative Planning Solutions;
- Environmental inventories, traffic analysis, and design criteria for roads and structures under study;
- Preliminary coarse screening of Design Alternatives;
- List of alternatives carried forward for detailed evaluation;
- Explain the study process; and
- Obtain your comments and answer your questions.

Please join us at the PIC scheduled on:

Date: Tuesday, December 5, 2017
Time: 4 pm to 8 pm
Location: Saint Paul University, Guigues Building, 223 Main Street, Ground Floor (Enter off Main Street)

A second PIC will be scheduled to present the technical recommendations and mitigation plan to agencies and members of the public and obtain comments, and to discuss any concerns with regards to the proposed undertaking. A notice providing the date, time, and location of the second PIC will be published in the Ottawa Citizen and Le Droit and at the project website.

Upon completion of this study, a Transportation Environmental Study Report (TESR) will be prepared and made available for a 30-day public review period. A further notice of TESR Submission will be published in the Ottawa Citizen and Le Droit and on the project website.

COMMENTS

If you cannot attend this PIC, and you would like to discuss the project, receive additional information, or provide input, please contact the BTE Project Manager or MTO Senior Project Engineer listed below or visit the project website at **www.queenswaydowntownbridges.com**:

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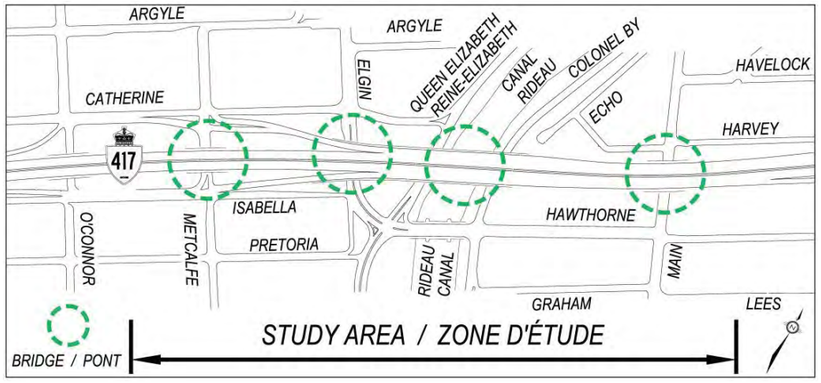
AVIS DU GOUVERNEMENT DE L'ONTARIO

Avis de tenue de la première séance d'information publique

Étude d'évaluation environnementale des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main
GWP 4170-13-00

L'ÉTUDE – Le ministère des Transports de l'Ontario (MTO) a retenu les services de la société **BT Engineering (BTE)** pour réaliser une étude de conception préliminaire et d'évaluation environnementale de la réfection ou du remplacement de sept ponts (quatre emplacements) de l'autoroute 417 (Queensway) entre les rues Metcalfe et Main, incluant le pont du canal Rideau, à Ottawa. L'étude identifiera les stratégies à adopter pour la réfection ou de remplacement de ces ponts.



LE PROCESSUS – L'étude suivra le processus de planification établi par l'*Évaluation environnementale de portée générale pour les installations provinciales de transport* (2000) pour les projets du groupe B et les organismes externes et le public seront consultés tout au long du projet. La première séance d'information publique (SIP) a lieu à cette étape critique du projet afin de présenter le projet et de recueillir les idées et commentaires du public. La séance sera de type « portes ouvertes ». Des représentants du MTO et de BTE seront présents pour recueillir les commentaires et répondre aux questions.

Le MTO vous invite cordialement à assister à cette première SIP. Cette séance aura pour but de présenter :

- les objectifs du projet et l'énoncé des enjeux et des possibilités;
- l'étude de conception préliminaire (plan de travail), aux fins de commentaires;
- l'évaluation des solutions de planification alternatives;
- les inventaires environnementaux, l'analyse de la circulation et les critères de conception des routes et des structures à l'étude;
- une évaluation préliminaire des solutions de conception;
- une liste des solutions retenues pour évaluation détaillée;
- le processus de planification;
- obtenir vos commentaires et répondre à vos questions.

Venez participer à la première séance d'information publique :

Date : mardi 5 décembre 2017
Heure : 16 h à 20 h
Lieu : Université Saint-Paul, pavillon Guigues, 223, rue Main, rez-de-chaussée (entrer par la rue Main)

Une deuxième SIP sera organisée pour présenter les recommandations techniques et le plan d'atténuation aux organismes concernés et au public, obtenir des commentaires et discuter de toute préoccupation au sujet du projet proposé. Un avis précisant la date, l'heure et le lieu de la deuxième SIP sera publié dans l'*Ottawa Citizen* et *Le Droit*, et sera affiché sur le site web du projet.

Une fois l'étude terminée, un rapport d'étude environnementale sur les transports (REET) sera préparé et fera l'objet d'une période d'examen public de 30 jours. Un avis de dépôt du REET sera alors publié dans l'*Ottawa Citizen* et *Le Droit* et affiché sur le site web du projet.

COMMENTAIRES

Si vous ne pouvez assister à la SIP mais que vous souhaitez discuter du projet, obtenir plus d'informations ou partager vos idées et commentaires, veuillez communiquer avec l'une ou l'autre des personnes suivantes, ou consultez le site web du projet à l'adresse suivante : **www.queenswaydowntownbridges.com** :

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Gestionnaire du projet
BT Engineering Inc.
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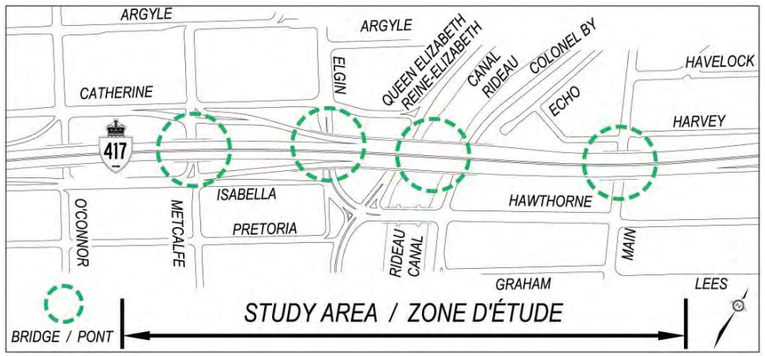
Pour des renseignements en français, veuillez communiquer avec Daniel Riendeau au 613 228-4813 ou à daniel.riendeau@bteng.ca.

ONTARIO GOVERNMENT NOTICE

Public Information Centre No. 2

Ottawa Queensway Downtown Bridges Environmental Assessment Study
Metcalfe Street to Main Street
Group Work Project 4170-13-00

THE STUDY - The **Ontario Ministry of Transportation (MTO)** has retained **BT Engineering Inc. (BTE)** to undertake a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study will determine the appropriate strategy for the rehabilitation or replacement of these bridges.



THE PROCESS - This study is following the *Class Environmental Assessment for Provincial Transportation Facilities (2000)* planning process for a Group "B" project, with the opportunity for external agency and public consultation throughout the project. The first Public Information Centre (PIC) was held in December 2017. This second PIC is being held at this key point in the study to present the technical recommendations and mitigation plan and to receive public input. The PIC will be 'drop in' format. Representatives of the MTO and BTE will be in attendance to receive comments and answer questions about the study. Please join us at the PIC scheduled on:

Date: Wednesday, April 24, 2019
Time: 4:00 pm to 8:00 pm
Location: Saint Paul University, Guigues Building, 223 Main Street, Ground Floor (enter off Main Street)

Upon completion of this study, a Transportation Environmental Study Report (TESR) will be prepared and made available for a 30-day public review period. A further notice of the TESR public review period will be published in the Ottawa Citizen and Le Droit and on the project website.

COMMENTS - If you cannot attend this PIC and you would like to discuss the project, receive additional information or provide input, please contact the BTE Project Manager or MTO Senior Project Engineer listed below, or visit the project website at:
www.queenswaydowntownbridges.com

Steve Taylor, P.Eng.
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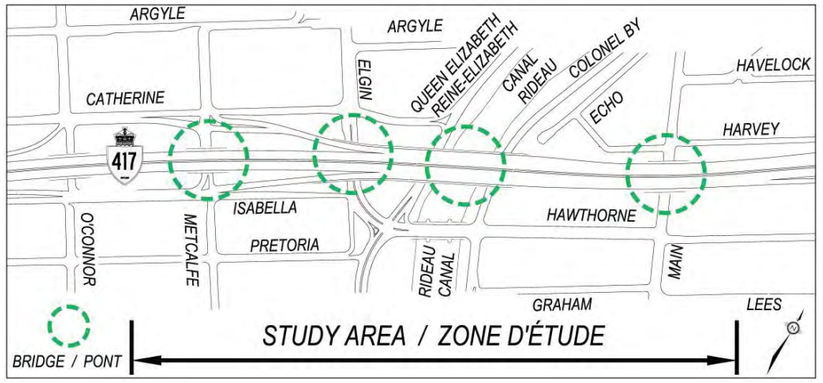
AVIS DU GOUVERNEMENT DE L'ONTARIO

Deuxième séance d'information publique

Étude d'évaluation environnementale des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main
Projet de groupe 4170-13-00

L'ÉTUDE – Le **ministère des Transports de l'Ontario (MTO)** a retenu les services de la société **BT Engineering Inc. (BTE)** pour réaliser une étude de conception préliminaire et d'évaluation environnementale de la réfection ou du remplacement de sept ponts (quatre emplacements) de l'autoroute 417 (Queensway) entre les rues Metcalfe et Main, incluant le pont du canal Rideau, à Ottawa. L'étude identifiera les stratégies à adopter pour la réfection ou de remplacement de ces ponts.



LE PROCESSUS – L'étude suit le processus de planification établi par l'*Évaluation environnementale de portée générale pour les installations provinciales de transport* (2000) pour les projets du groupe B et les organismes externes et le public seront consultés tout au long du projet. La première séance d'information publique (SIP) a eu lieu en décembre 2017. La deuxième SIP, présentée à cette étape critique du projet, a pour but de présenter les recommandations techniques et le plan d'atténuation et pour recueillir les idées et commentaires du public. La séance sera de type « portes ouvertes ». Des représentants du MTO et de BTE seront présents pour recueillir les commentaires et répondre aux questions. Nous vous invitons cordialement à assister à cette séance d'information publique :

Date : mercredi 24 avril 2019
Heure : 16 h à 20 h
Lieu : Université Saint-Paul, pavillon Guigues, 223, rue Main, rez-de-chaussée (entrer par la rue Main)

Une fois l'étude terminée, un rapport d'étude environnementale sur les transports (REET) sera préparé et fera l'objet d'une période d'examen public de 30 jours. Un avis de dépôt du REET sera alors publié dans l'*Ottawa Citizen* et *Le Droit* et affiché sur le site web du projet.

COMMENTAIRES – Si vous ne pouvez assister à la SIP mais souhaitez discuter du projet, obtenir plus d'informations ou partager vos idées et commentaires, veuillez communiquer avec l'une ou l'autre des personnes suivantes, ou consultez le site web du projet à l'adresse suivante : **www.queenswaydowntownbridges.com** :

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Tous les renseignements seront recueillis en conformité avec la *Loi sur l'accès à l'information et la protection de la vie privée* de 2009. À l'exception des renseignements personnels, tous les commentaires feront partie du domaine public.

Pour obtenir des renseignements en français, veuillez communiquer avec Daniel Riendeau au 613 228-4813 ou à daniel.riendeau@bteng.ca.

Letter brings together both sides of border

Mayor of U.S. town visits Kingston for Canada 150 weekend, writes *Arthur Milnes*.

When I was growing up, it was clear to me that one word struck genuine terror in our mother's soul.

Polio.

My late mother had worked as a young nurse in the 1950s at a children's polio ward in Toronto. Whether her service was for a day, a week, a month or a year, I honestly don't know.

But, the fear for her was very real.

She also admired the work of Paul Martin Sr., who, as Canada's minister of health, helped bring the Salk vaccine to the world.

Mayor Bob Prater of Warm Springs, Ga., now 71, knows all too well the dangers of polio. As a child in Alabama, the disease struck him and then, just as mysteriously as it came, it left and he grew up a normal kid.

It was only eight years ago, when he was in his 60s, that the good muscles in his legs, which had been over-compensating for decades for the ones that had been damaged by polio, gave out. For the rest of his life, he will now wear the dreaded leg braces most of us — thankfully — have never seen.

Mayor Prater and his grandson, Drew, both came to Kingston for Confederation 150 weekend due to one of the time capsule letters my wife, Alison, and I sent. And they were the hit of the town, particularly when we all gathered to bury our time capsule.

First he read, with genuine emotion and pride, his tiny city's official proclamation that had declared July 1 Franklin Roosevelt-Sir John A. Macdonald-Canada Day in Warm Springs. (Franklin Roosevelt himself, another man who didn't let polio stop him, used to visit the place Prater leads today as mayor to "soak his polio-stricken legs in the warm waters," as TV Ontario's Steve Paikin describes.)

Then, because I could think of no higher honour private Canadian citizens could bestow on a foreigner, Mayor Prater was invited to lead our group's reaffirmation of our Canadian citizenship July 1 in my backyard.

Kingston's mayor was there, as was one of our area MPs, Scott Reid. There was also a transplanted American, Lynn, who now lives in Kingston, along with an American couple from Scottsdale, Ariz., in town for 150 as their community is a Sister City of Kingston's.

And many people in front of Mayor Prater became openly emotional as he led us in Canada's oath — on Confederation's 150th birthday, in one of the Fathers of Confederation's town.

The next day, and despite his leg braces, Prater wanted me to give them a quick tour of Kingston before they caught their flight.

In particular, they wanted to see where Franklin Roosevelt of their Warm Springs had spoken in 1928 when FDR famously visited Kingston.

Mayor Prater really liked that stop of my tour of Kingston.

In fact, it was the final one.

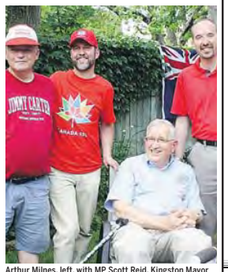
He and his council have now invited Kingston to be a Sister City. And they have officially asked Kingston's mayor, Bryan Paterson, to be their grand marshal at this November's Annual Candle Light Tour Parade.

I suspect both will now pass at Kingston city council. Paterson had better pack his bags.

And, a lot of Kingstonians will be seeing Mayor Prater and his grandson again.

All of this because of a snail-mailed 150 time capsule letter.

> *Many people in front of Mayor Prater became openly emotional as he led us in Canada's oath.*



Arthur Milnes, left, with MP Scott Reid, Kingston Mayor Bryan Paterson and Mayor Bob Prater of Warm Springs, Ga., seated, took part in an event to reaffirm the citizenship of a group of Canadians.



BRUCE DEACHMAN

CAPITAL VOICES BY BRUCE DEACHMAN

ANDREW LARCHE

Laurier Avenue.
Canada Day, July 1, 2017.

"I was born and raised in Ottawa and have been living here for 37 years. I just love coming out and making people smile and have a great time for Canada Day. I have my wings that I can put people between and make them remember this day as well.

"I made this outfit myself, and earlier today I had a bigger costume, but with all the rain that we had this morning, it fell apart, so I had to downsize. But I keep going.

"I do this every year, and I try to add to it every year. I had a big 'Happy 150 Canada' sign super high up in the air, but that's what came apart in the rain, so I came back down to a medium-size suit. But the reaction has been amazing. I've been out since six o'clock this morning. It's only noon now and I'm guessing that 1,000 people have taken my photo. It's been non-stop.

"What do I like about Canada? The freedom. It's a beautiful country and I love being a proud Canadian. And I love Ottawa. It's the best place to be on Canada Day and every other day. It's great to be here."

bdeachman@postmedia.com

ABOUT THIS SERIES

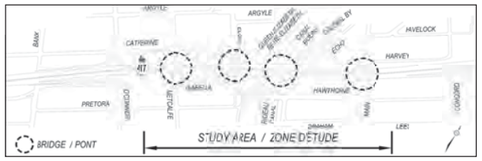
In anticipation of Canada's sesquicentennial celebrations, the Citizen's Bruce Deachman went out in search of Ottawans — 150 of them — to learn their stories. The series, which was published daily leading up to Canada Day, was called Capital Voices. It continues, today and beyond, on a somewhat less rigorously defined schedule.

ONTARIO GOVERNMENT NOTICE
NOTICE OF STUDY COMMENCEMENT

Ottawa Queensway Downtown Bridges Environmental Assessment Study
Metcalfe Street to Main Street
Group Work Project 4170-13-00

THE STUDY

The Ontario **Ministry of Transportation (MTO)** has retained **BT Engineering Inc. (BTE)** to undertake a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study will determine the appropriate strategy for the rehabilitation or replacement of these bridges. The Queensway Corridor Study Area and the four Local Study Areas are shown on the map below.



The area of study includes three levels of analysis. The "Broader Study Area" includes the geographic area of the City where temporary short term offsite detour routes are being considered for freeway closures. The "Immediate Study Area" will be defined to focus on the Queensway Corridor generally within or adjacent to the MTO right-of-way that will include the bridge alternatives and possible staging areas for candidate bridge construction sites needed for rapid replacement options. Within this Study Area, we will also identify "Local Study Areas" at each of the bridge locations along with potential candidate construction staging sites necessary for the construction of bridge segments for the rapid replacement options. Environmental inventories and secondary source reviews will be carried out within the limits of the "Immediate and Local Study Areas" and at the potential construction staging sites.

The Study will complete the preliminary design and receive EA clearance to proceed to Detail Design resulting in construction projects at each of the 4 sites for a total of 7 bridges. There are two types of bridge projects (replacement or rehabilitation) and two types of bridges (rigid frames and beam structures (Rideau Canal)). They are distinctly different bridge types and projects but the inter-relationship between the projects is that there may be common traffic staging, and the possible replacement of the Rideau Canal Bridge may trigger an elevation increase (if the mid-span of the Rideau Canal Bridge increases) that may require profile changes to the adjacent bridges (possibly triggering advance replacement).

THE PROCESS

This study will follow the *Class Environmental Assessment for Provincial Transportation Facilities* (2000) planning process for a Group "B" project, with the opportunity for external agency and public consultation throughout the project. Two Public Information Centres (PICs) will be scheduled to: present the project process, design alternatives, analysis and evaluation results and preferred designs to agencies and members of the public; to obtain comments; and to discuss any concerns with regards to the proposed undertaking. Notices providing the date, time, and location of the PICs will be published in the Ottawa Citizen and Le Droit.

Upon completion of this study, a Transportation Environmental Study Report (TESR) will be prepared and made available for a 30-day public review period. A further notice of TESR Submission will be published in the Ottawa Citizen and Le Droit at that time.

COMMENTS

We are interested in hearing any comments that you may have regarding this study. You are encouraged to make your concerns and input known to the Project Team at your earliest opportunity. Early communication of concerns in the study allows the greatest opportunity to address them. If you wish to obtain additional information or provide comments, or wish to be added to the project mailing list, please contact the Consultant Project Manager or MTO Senior Project Engineer listed below:

Steve Taylor, P.Eng.
Project Manager
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100 Craig Henry Drive, Suite 201
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e-mail: dave.lindensmith@ontario.ca

WEBSITE

www.queenswaydowntownbridges.com will be created and updated regularly in order to provide the following information: background information; current project status; Frequently Asked Questions and Answers; project schedule; contact information; and serve as an additional means for you to communicate your comments and concerns. You are encouraged to keep up-to-date on the project by regularly visiting the website.

ACCESSIBILITY

If you have any accessibility requirements in order to participate in this project please contact one of the Project Team members listed above.

All information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act* (2009). With the exception of personal information, all comments will become part of the public record.

Pour des renseignements en français veuillez communiquer avec Daniel Riendeau au: 613 228-4813 ou daniel.riendeau@bteng.ca

Ontario

Rideau Street merchants call out cops for lack of foot patrols

KELLY EGAN

Rideau Street merchants painted an alarming picture Monday of crime and disorder during the 2017 tourist season, calling for Ottawa police to increase foot patrols in the area.

Peggy DuCharme, executive director of the Downtown Rideau BIA, presented a package of nine letters to Ottawa's police services board, making it clear the force's new "service model," implemented about a year ago, is not working very well.

DuCharme said there are now only four foot patrol officers on duty to cover the entire central area of the city and many of her 650 members have noticed the decreased visibility. A bump in tourism for Canada's 150th birthday and the opioid crisis only underlined the problem this summer.

Members had many complaints.

"Over the last three years, Les Suites Hotel has had to implement extra security measures in our building to deter crime as it has increased exponentially," wrote Chris Pierce, general manager of the Besserer Street property.

"We constantly receive guest feedback regarding our 'unsafe' area and have had guests assaulted off property. This is definitely not conducive to tourism," he said, adding he's a resident of the area, too.

"The amount of crime I witness is alarming."

The supporting letters came from high-end retailers like Nordstrom — expressing "great concern" — to small-owner-operator hotels, to discount chains like Giant Tiger.

GT's Kevin Jackson wrote a letter saying that even when 911 is called, the response can be slow.

"A customer was seen leaving the store with a large amount of unpaid merchandise and then proceeded to sit on the benches at the corner of George and Dalhousie Street. Police were called but there were no officers available to apprehend the suspect."

Nor is it a new problem, he wrote. "The crime statistics for this area are vastly under-reported as many businesses and residents have given up calling them in."

The whole local hotel industry is worried. "Many hotels are clearly concerned and some have stopped recommending Downtown Rideau and ByWard Market as tourism destinations after dark due to safety concerns," wrote Steve Rail, president of the Ottawa Gatineau Hotel Association.

DuCharme said the BIA's street ambassadors kept track of nuisance complaints and some crime stats this summer. Police were so rarely seen on foot, she said, the association thought the patrols had been eliminated entirely.

She said members also heard from area residents concerned about the pop-up injection site that suddenly appeared in a Lowertown park.

"There is a sense of lawlessness. Anything goes and nothing will get done about anything."

She said there was a "brazen" aspect to the crimes, like thieves walking straight out of stores with armloads of merchandise, or open drug use.

Ottawa police Supt. Joan McKenna has met with the BIA in the area. She said there is a community police officer for greater Rideau Street and pointed to a number of drug busts that have been made this year. She also said the new model includes a better online reporting system and greater police presence for special events like the La Machine event this summer.

The summer season is also bolstered with bicycle patrols, she added. "We are well aware of the issues they are raising."

DuCharme said internally gathered data show a sharp rise in the number of ambulance calls to the area, a lack of attention to panhandlers and more outreach to the city's 311 number for bylaw infractions.

The BIA is looking for enhanced visibility during mid-afternoon to mid-evening, at heavily used transit stops and near locales like marijuana shops and drug-injection sites.

kegan@postmedia.com

City police move forward on gender inequality audit

KELLY EGAN

Ottawa police are taking the final steps to reduce the "boys' club" mentality that was historically prevalent in dealing with women's careers in the force.

The last phases of a gender equality audit — negotiated after a complaint to the Human Rights Tribunal of Ontario in 2012 — are to go ahead in 2018.

A report submitted to the police services board Monday indicated the leadership of the force has a great deal of work to do.

Interviews with 127 officers by an outside workplace expert this summer found a high level of unease with the force, and not all dealing with gender:

- 83 per cent described OPS culture using negative terms, the report said.
- 86 per cent said the culture "has impacted their behaviour at work."
- Men tended to rely on "internal networks" and personal relationships to gain promotions, whereas women were looking for more objective and "accessible processes."

The report also found that advancement was too closely tied to "cultivating relationships" than having the required knowledge or skill to fill a position.

The force is planning to spend $75,000 on a program to educate all 2,000 employees on human rights and various aspects of gender bias.

The initial review found that the careers of female officers suffered when they had children, that they were less likely to be promoted and they regularly experienced sexism in the workplace.

The audit was done as part of a settlement reached from a complaint by Const. Barbara Sjaarda in 2012.

Sjaarda, who is married to another Ottawa officer, alleged she was denied training, specific jobs and chances for promotions because she was a woman and mother who took three maternity leaves when her children were born.

A settlement in 2015 gave the force two years to perform a gender and family status audit of its workforce across all ranks; review all formal and informal promotion and job-placement policies and practices to ensure they don't discriminate based on gender or family status; revise those policies and practices if they do; and then retrain employees based on the new policies.

About 23 per cent of Ottawa police officers are female, amounting to about 327 women on the force, from constables to a deputy chief.

"We're now delivering the things to our organization that will actually make the positive changes," said Deputy Chief Steve Bell.

He said there is a much better gender balance today when it comes to dealing with issues like promotions and transfers between units.

kegan@postmedia.com
Twitter.com/kellyeganeedumn

Foodies! Read Ottawa's best food and dining stories every Wednesday.

NOTICE OF PUBLIC INFORMATION CENTRE #1

Ottawa Queensway Downtown Bridges Environmental Assessment Study
Metcalfe Street to Main Street / Group Work Project 4170-13-00

THE STUDY

The **Ontario Ministry of Transportation (MTO)** has retained **BT Engineering Inc. (BTE)** to undertake a preliminary design and environmental assessment study for the rehabilitation and/or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study will determine the appropriate strategy for the rehabilitation or replacement of these bridges.

THE PROCESS

This study is following the *Class Environmental Assessment for Provincial Transportation Facilities* (2000) planning process for a Group "B" project, with the opportunity for external agency and public consultation throughout the project. The first Public Information Centre (PIC) is being held at this key point in the study to provide the public with information regarding the study and to receive public input. The PIC will be 'drop in' format. Representatives of the MTO and BTE will be in attendance to receive comments and answer questions about the study.

MTO cordially invites you to the first PIC. The purpose of the meeting will be to present the:

- Project goals and the problem and opportunity statement;
- Draft Study Design (Work Plan) for comments;
- Assessment of Alternative Planning Solutions;
- Environmental inventories, traffic analysis, and design criteria for roads and structures under study;
- Preliminary coarse screening of Design Alternatives;
- List of alternatives carried forward for detailed evaluation;
- Explain the study process; and
- Obtain your comments and answer your questions.



Please join us at the PIC scheduled on:

Date: Tuesday, December 5, 2017
Time: 4:00 p.m. to 8:00 p.m.
Location: Saint Paul University, Guigues Building - 223 Main Street, Ground Floor (Enter off Main Street)

A second PIC will be scheduled to present the technical recommendations and mitigation plan to agencies and members of the public and obtain comments, and to discuss any concerns with regards to the proposed undertaking. A notice providing the date, time, and location of the second PIC will be published in the Ottawa Citizen and Le Droit and at the project website.

Upon completion of this study, a Transportation Environmental Study Report (TESR) will be prepared and made available for a 30-day public review period. A further notice of TESR Submission will be published in the Ottawa Citizen and Le Droit and on the project website: **www.queenswaydowntownbridges.com**

COMMENTS

If you cannot attend this PIC, and you would like to discuss the project, receive additional information, or provide input, please contact the Consultant Project Manager or MTO Senior Project Engineer listed below or visit the project website:

Steve Taylor, P.Eng., Project Manager
BT Engineering Inc.
100 Craig Henry Drive, Suite 201, Ottawa, ON K2G 5W3
tel: 613-228-4813 / toll-free: 1-855-228-4813
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e-mail: steven.taylor@bteng.com

Dave Lindensmith, P.Eng., Senior Project Engineer
Ministry of Transportation
1355 John Counter Boulevard, Kingston, ON K7L 5A3
tel: 613-547-1740 / toll-free: 1-800-267-0295
fax: 613-540-5106
e-mail: dave.lindensmith@ontario.ca

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Ontario

Open Board Meeting

Thursday, Dec. 7, 2017
8.30 a.m. to 1 p.m.

Canadian Blood Services
1800 Alta Vista Drive
Ottawa, ON

Join us in person in Ottawa or watch the webcast online.

For more information, including registration to present to the Board, visit blood.ca.

Canadian Blood Services
It's up to you to give

DAVE'S TRAVEL PICK



DAVE FRINTON
Co-Founder & President, CruisePlus

Discover more of Alaska's unspoiled wilderness and glorious glaciers on Holland America's remarkable ms Noordam – our 7 night package is departing May 5, 2018! For **$2449** CAD per person, enjoy roundtrip Ottawa air, 1 night in a 4 star Vancouver hotel, a unique 6 night cruise in a balcony stateroom with a $50 US pp onboard credit and taxes included. There are various activities onboard and ashore, you may want to treat yourself with a spa day on the cruise or go for a hike while overnight in Juneau through stunning trails with amazing views – some as close as 10 minutes away from downtown! Alaska is always a popular destination, so call us for more information and one of our travel consultants can help you plan this or any other vacation! Today is the last day of Holland America's Cyber Sale – so don't miss out on this great promotion!

Vancouver - Cruising inside passage - Cruising Tracy Arm or Endicott Arm - Juneau (overnight) - Ketchikan - Cruising inside passage - Vancouver

Check out all my current Travel Picks at: cruiseplus.ca/top20

Sign up for our email updates for first access!

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(1-855-552-7847)

ENQUÊTE DE LA GRC ET DU FBI

Le suspect arrêté en Thaïlande retrouvé mort

PAULE VERMOT-DESROCHES
Le Nouvelliste

TROIS-RIVIÈRES — Le suspect originaire de Trois-Rivières qui avait été arrêté en Thaïlande la semaine dernière, à la suite d'une opération d'envergure internationale par la GRC et le FBI concernant des activités illégales sur le *Dark web*, s'est enlevé la vie en prison, à Bangkok.

Selon le site Internet du journal thaïlandais *Post Today*, Alexandre Cazes, 26 ans, a été retrouvé mort dans une salle de bain de la prison où il était détenu depuis son arrestation le 5 juillet dernier. À cette date, on se souviendra que des perquisitions avaient été menées dans le secteur Cap-de-la-Madeleine. La résidence de membres de la famille du jeune homme avait non seulement été perquisitionnée, mais également un local commercial où il y avait de l'entreposage de biens. Du matériel informatique y avait notamment été saisi. Selon le *Post Today*, il a été rapporté que Cazes avait rencontré un procureur vers 7 h du matin mercredi, heure de Bangkok. Il était question de son extradition vers les États-Unis, où il aurait pu être mis en accusation dans l'enquête relative aux activités illégales menées sur le web. Plus tard, le détenu est allé prendre une douche. C'est à cet endroit qu'il a été retrouvé sans vie.

Du côté de la GRC, on n'a ni confirmé ni infirmé les informations diffusées par le média thaïlandais, d'autant plus que la GRC n'avait, à ce jour, jamais confirmé quoi que ce soit relativement à l'arrestation de cet homme dans le cadre de cette enquête de niveau international.

Chez Affaires mondiales Canada, on confirme le décès d'un ressortissant canadien en Thaïlande.

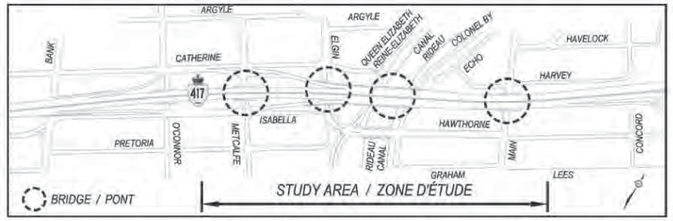
AVIS DU GOUVERNEMENT DE L'ONTARIO – AVIS DE DÉBUT D'ÉTUDE

Étude d'évaluation environnementale des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main
G.W.P. 4170-13-00

L'ÉTUDE

Le **ministère des Transports de l'Ontario (MTO)** a retenu les services de la firme **BT Engineering (BTE)** pour réaliser une étude de conception préliminaire et d'évaluation environnementale pour la réfection ou le remplacement de sept ponts (quatre emplacements) sur l'autoroute 417 (Queensway) à Ottawa entre les rues Metcalfe et Main, incluant le pont du canal Rideau. L'étude déterminera le programme approprié de réfection ou de remplacement de ces ponts. La carte ci-dessous montre la zone d'étude du corridor de l'autoroute 417 et les quatre zones d'étude locales.

La zone d'étude comprend trois niveaux d'analyse. La « zone d'étude élargie » couvre le secteur géographique de la ville à l'intérieur duquel des itinéraires de détour temporaires sont envisagés en cas de fermeture de voies sur l'autoroute. La « zone d'étude immédiate » correspondra à la partie du corridor de l'autoroute 417 généralement incluse dans l'emprise du MTO ou adjacente à celle-ci qui contiendra les modifications de pont proposées ainsi que les aires d'assemblage là où le remplacement rapide d'un pont est envisagé. À l'intérieur de cette zone d'étude seront aussi identifiées des « zones d'étude locales » à chacun des emplacements de pont ainsi que des aires d'assemblage, nécessaires à la construction de segments de pont dans les cas de remplacement rapide. Des inventaires environnementaux ainsi que la consultation de sources secondaires seront effectués dans les limites des « zones d'étude immédiate et locales » ainsi qu'aux aires d'assemblage potentielles.



L'étude complétera la conception préliminaire et permettra d'obtenir, sur le plan environnemental, l'autorisation de passer à l'étape de la conception détaillée pour chacun des quatre emplacements couvrant les sept ponts. Bien que les projets de pont soient de deux natures différentes (remplacement, réfection) et qu'on retrouve deux types de structures (cadres rigides et, dans le cas du canal Rideau, poutres), l'interdépendance de ces projets rend possible une gestion commune de la circulation. En outre, le remplacement possible du pont du canal Rideau est susceptible d'en augmenter la hauteur (s'il est rehaussé à mi-travée), ce qui pourrait nécessiter des changements de profil des ponts voisins (et peut-être hâter leur remplacement).

LE PROCESSUS

L'étude suivra le processus de planification établi par l'*Évaluation environnementale de portée générale pour les installations provinciales de transport* (2000) pour les projets du groupe B, et les organismes externes et le public seront consultés tout au long du projet. Deux séances d'information publique (SIP) seront prévues afin de : présenter aux organismes et au public le processus du projet, les alternatives de conception, l'analyse et l'évaluation des résultats et les alternatives préférées; obtenir des commentaires; et discuter de toute préoccupation concernant le projet proposé. Des avis indiquant la date, l'heure et le lieu des SIP seront publiés dans l'*Ottawa Citizen* et dans *Le Droit*.

Une fois l'étude terminée, un rapport d'étude environnementale sur les transports (REET) sera préparé et fera l'objet d'une période d'examen public de 30 jours. Un avis de dépôt du REET sera alors publié dans l'*Ottawa Citizen* et *Le Droit*.

COMMENTAIRES

Les commentaires que vous pourriez avoir au sujet de l'étude nous intéressent. Nous vous invitons à faire connaître votre avis et vos préoccupations à l'équipe du projet dès que possible. Il nous sera d'autant plus facile de répondre à vos préoccupations que vous nous les communiquez tôt au cours de l'étude. Si vous souhaitez obtenir d'autres renseignements, faire des commentaires ou ajouter votre nom à la liste d'envoi du projet, veuillez communiquer avec l'une ou l'autre des personnes suivantes :

Steve Taylor, P.Eng., chargé de projet
BT Engineering
100, promenade Craig Henry, bureau 201, Ottawa (Ontario) K2G 5W3
tél. : 613 228-4813 / sans frais : 1 855 228-4813
téléc. : 613 280-1305
courriel : steven.taylor@bteng.ca

David Lindensmith, P.Eng., ingénieur principal de projet
Ministère des Transports
1355, boulevard John Counter, Kingston (Ontario) K7L 5A3
tél. : 613 547-1740 / sans frais : 1 800 267-0295
téléc. : 613 540-5106
courriel : dave.lindensmith@ontario.ca

SITE WEB

Le site **www.queenswaydowntownbridges.com** sera créé et mis à jour régulièrement avec les informations suivantes : renseignements généraux, état d'avancement du projet, réponses aux questions fréquentes, calendrier du projet et coordonnées des personnes-ressources. Il sera aussi un autre moyen de communiquer vos commentaires et vos préoccupations. Nous vous encourageons à vous tenir à jour sur le projet en le visitant régulièrement.

ACCESSIBILITÉ

Si vous avez des besoins particuliers en matière d'accessibilité pour participer au projet, veuillez communiquer avec l'un des membres de l'équipe de projet mentionnés ci-dessus.

Tous les renseignements seront recueillis en conformité avec la *Loi de 2009 sur l'accès à l'information et la protection de la vie privée*. À l'exception des renseignements personnels, tous les commentaires seront publics.

Pour des renseignements en français veuillez communiquer avec Daniel Riendeau par téléphone au 613 228-4813 ou par courriel à l'adresse daniel.riendeau@bteng.ca.

Ontario

STATIONNEMENT HIVERNAL DANS LA NATION

Pas de passe-droit pour les résidents

MARTIN BRUNETTE
mbrunette@ledroit.com

La municipalité de La Nation risque d'être moins indulgente envers les automobilistes qui se stationnent le long des rues cet hiver.

La municipalité compte s'attaquer au problème après avoir reçu plusieurs plaintes durant les dernières années en raison de congestion dans les rues notamment dans les secteurs plus urbains tels que Limoges.

« Ce qui arrive, c'est que dans les secteurs plus résidentiels, les maisons sont trop près de la rue ce qui limite l'espace de stationnement donc, les gens se stationnent dans la rue même l'hiver », précise le maire de La Nation, François St-Amour.

Au cours des dernières années, en raison de son caractère rural, la municipalité s'abstenait d'appliquer son règlement notamment en ce qui a trait au stationnement l'hiver.

« On comprend que parce qu'on est dans une municipalité où il n'y a pas de transport en commun, les gens ont souvent besoin de plus d'une voiture et souvent même trois voitures pour se déplacer. Mais il faut que les gens utilisent leur espace plus judicieusement », explique François St-Amour. Celui-ci ajoute également que les garages sont souvent utilisés comme espace de rangement plutôt qu'un abri pour les voitures.

Actuellement le règlement municipal interdit le stationnement le long des rues de 23 h à 7 h du 1er décembre au 1er avril. Le stationnement est également interdit lors des opérations de déneigement.

« On reçoit des plaintes parce que les chemins ne sont pas déblayés comme il faut et souvent c'est parce que la charrue ne peut pas circuler », souligne le maire.

Désormais, une voiture stationnée le long d'une rue pourrait dès lors être remorquée aux frais du propriétaire. Dans le cas de multiples voitures, la route ne sera tout simplement pas déblayée.

« Il y en a peut-être qui ne seront pas contents lorsqu'on va appliquer le règlement pleinement, mais ça sera égal pour tout le monde », précise M. St-Amour.

EN BREF

Accident de travail

Un travailleur de 28 ans a été blessé sur le chantier du train léger, à Ottawa, lundi. L'homme a été heurté par un chariot élévateur vers 12 h 30, près de la rue Queen. Les paramédics et les pompiers d'Ottawa ont eu besoin d'une nacelle pour retirer la victime de sa fâcheuse situation. Son état est jugé sérieux, mais stable.

Violente bagarre dans Vanier

Une personne a été transportée à l'hôpital dans un état critique lundi soir à la suite d'une altercation à l'angle du chemin Montréal et de la rue Lajoie, dans Vanier. L'agression est survenue vers 21 h 30. La police d'Ottawa a ouvert une enquête. Les autorités n'ont pas précisé en fin de soirée combien de personnes étaient impliquées dans la bagarre ou si une arme a été utilisée.

Voleur recherché à Ottawa

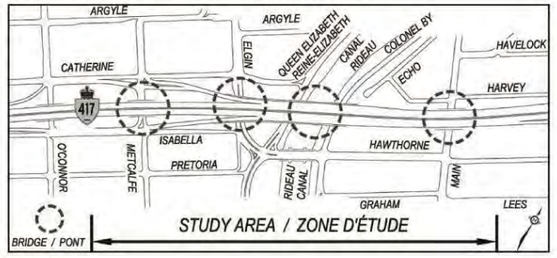
Le Service de police d'Ottawa (SPO) sollicite l'aide du public pour mettre la main au collet d'un cambrioleur qui a fracassé des vitrines de commerces avec des pierres dans l'est de la ville. Deux vols ont eu lieu le 7 octobre et le 9 novembre dans le secteur du 1000, boulevard Saint-Laurent. Le plus récent larcin a été commis le 15 novembre près du 300, chemin Coventry. Lors des vols le suspect s'intéressait à la caisse enregistreuse des commerces, a précisé le SPO dans un communiqué. Des dommages considérables ont été faits dans les commerces visés. La police croit que l'individu habite le quartier. Il s'agit d'un homme de race blanche âgé de 35 à 45 ans, de carrure moyenne à forte. Toute personne ayant des renseignements dans ces dossiers peut appeler l'unité des introductions par effraction du SPO au 613-236-1222, poste 4533. LE DROIT

AVIS DE TENUE DE LA PREMIÈRE SÉANCE D'INFORMATION PUBLIQUE

Étude d'évaluation environnementale des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main / GWP 4170-13-00

L'ÉTUDE

Le **ministère des Transports de l'Ontario (MTO)** a retenu les services de la société **BT Engineering (BTE)** pour réaliser une étude de conception préliminaire et d'évaluation environnementale de la réfection ou du remplacement de sept ponts (quatre emplacements) de l'autoroute 417 (Queensway) entre les rues Metcalfe et Main, incluant le pont du canal Rideau, à Ottawa. L'étude identifiera les stratégies à adopter pour la réfection ou de remplacement de ces ponts.



LE PROCESSUS

L'étude suivra le processus de planification établi par l'*Évaluation environnementale de portée générale pour les installations provinciales de transport* (2000) pour les projets du groupe B et les organismes externes et le public seront consultés tout au long du projet. La première séance d'information publique (SIP) a lieu à cette étape critique du projet afin de présenter le projet et de recueillir les idées et commentaires du public. La séance sera de type « portes ouvertes ». Des représentants du MTO et de BTE seront présents pour recueillir les commentaires et répondre aux questions.

Le MTO vous invite cordialement à assister à cette première SIP. Cette séance aura pour but de présenter :

- les objectifs du projet et l'énoncé des enjeux et des possibilités;
- l'étude de conception préliminaire (plan de travail), aux fins de commentaires;
- l'évaluation des solutions de planification alternatives;
- les inventaires environnementaux, l'analyse de la circulation et les critères de conception des routes et des structures à l'étude;
- une évaluation préliminaire des solutions de conception;
- une liste des solutions retenues pour évaluation détaillée;
- le processus de planification.

Venez participer à la première séance d'information publique :

Date : **mardi 5 décembre 2017**
Heure : **16 h à 20 h**
Lieu : **Université Saint-Paul, pavillon Guigues**
223, rue Main, rez-de-chaussée (entrer par la rue Main)

Une deuxième SIP sera organisée pour présenter les recommandations techniques et le plan d'atténuation aux organismes concernés et au public, obtenir des commentaires et discuter de toute préoccupation au sujet du projet proposé. Un avis précisant la date, l'heure et le lieu de la deuxième SIP sera publié dans l'Ottawa Citizen et Le Droit, et sera affiché sur le site web du projet à l'adresse suivante : **www.queenswaydowntownbridges.com**

Une fois l'étude terminée, un rapport d'étude environnementale sur les transports (REET) sera préparé et fera l'objet d'une période d'examen public de 30 jours. Un avis de dépôt du REET sera alors publié dans l'Ottawa Citizen et Le Droit et affiché sur le site web du projet.

COMMENTAIRES

Si vous ne pouvez pas assister à la SIP mais que vous souhaitez discuter du projet, obtenir plus d'informations ou partager vos idées et commentaires, veuillez communiquer avec l'une ou l'autre des personnes suivantes, ou consultez le site web du projet :

Steve Taylor, P.Eng.
Gestionnaire du projet
BT Engineering Inc.
100, promenade Craig Henry, bureau 201
Ottawa (Ontario) K2G 5W3
tél. : 613 228-4813 / sans frais : 1 855 228-4813
téléc. : 613 280-1305
courriel : steven.taylor@bteng.com

David Lindensmith, P.Eng.
Ingénieur principal de projet
Ministère des Transports de l'Ontario
1355, boulevard John Counter
Kingston (Ontario) K7L 5A3
tél. : 613 547-1740 / sans frais : 1 800 267-0295
téléc. : 613 540-5106
courriel : dave.lindensmith@ontario.ca

Si vous avez des besoins particuliers en matière d'accessibilité pour pouvoir participer au projet, veuillez communiquer avec un des membres de l'équipe de projet mentionnés ci-dessus.

Tous les renseignements seront recueillis en conformité avec la *Loi sur l'accès à l'information et la protection de la vie privée* de 2009. À l'exception des renseignements personnels, tous les commentaires feront partie du domaine public.

Pour des renseignements en français, veuillez communiquer avec Daniel Riendeau au 613 228-4813 ou à daniel.riendeau@bteng.ca.

Ontario

Measles can be 'very devastating' to kids: pediatrician

Retired doctor recounts how illness ravaged city in his early years of practice

ELIZABETH PAYNE

Dr. Barry Adams still remembers a late-night house call to a home in Hull where a three-year-old girl had a high fever. Adams quickly diagnosed the girl with measles, which was endemic in those days.

He tried to make her more comfortable and to cool her down. Just as he was preparing to leave, the mother, who lived alone with her daughter, had a seizure. Adams remained at the home until 3 a.m., watching over both of them and waiting until the mother was able to care for her sick child.

To anyone who has never experienced it, red measles is a disease like no other. Adams, 85, saw plenty of it during 40 years as a pediatrician in Ottawa.

"Measles is 10 times worse than the flu," he said. "Children are very sick with it. You can just see in their eyes that they are suffering."

When he started in medicine, in 1965, measles was common. Adams would see four to five cases a week in his office between September and April. Those children had some of the highest fevers he ever saw in his practice.

Most children were sick for a week to 10 days with high fever, bright red rash and respiratory symptoms, before recovering. They stayed home until the rash faded, usually a week to 10 days. In some cases, they developed complications, including viral pneumonia and encephalitis, which could lead to disability and even death. Between two and three patients out of 1,000 died.

Adams treated patients with serious complications from measles, "but thank God, they recovered."

By the time he hung up his stethoscope in 2015, measles had been vanquished in Canada thanks to highly effective childhood vaccines. For the last 20 years of his practice, Adams never saw a case.

More than two decades after endemic measles was eradicated in Canada, outbreaks are once again occurring, in part because of vaccine hesitancy. Ottawa Public Health has confirmed two unrelated cases in recent days. Both patients are adults who became infected while travelling.

To health professionals like Adams, who know what measles can do, it is shocking to see the illness return.

"People don't realize it is very devastating to children."

WHY ARE WE SEEING CASES IN OTTAWA?

Ottawa Public Health confirmed one case late last week and a second case on Sunday night. Both of the people infected are adults and both had travelled internationally. The cases are not related.

Measles deaths were reduced dramatically around the world up to 2017, thanks to vaccines. But cases have been on the rise since then, alarming global health officials. Cases rose by more than 48 per cent worldwide between 2017 and 2018 with 10 countries, including France, the Philippines and Brazil, accounting for almost three-quarters of the cases.

With travel common, more people are exposed to measles, which can hang in the air for up to two hours after an infected person has left a room and is considered among the most contagious diseases.

The Ottawa cases are two of five in Ontario since the beginning of the year. There has been a larger outbreak in British Columbia and several other cases across the country.

NOT JUST VACCINE HESITANT VULNERABLE

Even with relatively high vaccination rates, some people are vulnerable to infection. They include children under one who have not yet been vaccinated, people with compromised immune systems and the vaccine hesitant – those who have not been vaccinated.

The first measles, mumps and rubella (MMR) vaccine is not usually administered until a child is 12 months old, but can be given as early as six months if families are travelling.

There is another group that public health officials are focusing on: the inadvertently undervaccinated. These include people who think they were vaccinated but were not, as well as people who have had one vaccine but not a booster.

"A lot of adults have a loose understanding of the vaccination history," said Dr. Sarah Wilson from Public Health Ontario.

People who are uncertain of their immunization status, she said, should check with a doctor and get vaccinated before they travel overseas.

People born before 1970 are generally considered immune because measles was common before then, but Wilson said they should still get one dose of MMR vaccine before travelling overseas. Those born after 1970 who are unsure about their vaccination status should receive two doses.

"I think we need to really get the message out that for anyone who is planning a trip outside North America, they need to be vaccinated and speak to their doctor."

In Ottawa, meanwhile, public health officials are dealing with the time-consuming work of contacting hundreds of people who might have been infected in the past few weeks. Health officials have contacted close family members of those infected as well as those in some of the locations the people visited while infected, such as clinics and emergency rooms.

Neither of the cases has spread, although measles has a long incubation period of about 14 days.

Ottawa Public Health also released times and locations during which people might have been exposed to measles.

For the case announced April 7, those locations of potential exposure are:

- March 29, 2019, 2 p.m.–6:30 p.m. Loblaws, 100 McArthur Ave.
- March 29, 2019, 9:15 p.m.–9:25 p.m., OC Transpo bus Route 12, Montreal Road and North River Road to Rideau Street and Sussex Drive.
- March 29, 2019, 9:25 p.m.–9:50 p.m., OC Transpo bus Route 6, Rideau Street and Sussex Drive to Heron Road and Bank Street.
- March 29, 2019, 10 p.m.–March 30, 2019, 1:30 a.m., O'Brien's Pub and Eatery, 1145 Heron Rd.
- March 30,2019, 4:45 p.m.–8 p.m., Coconut Lagoon Restaurant, 853 St. Laurent Blvd.
- April 1, 2019, 11 a.m.–1:30 p.m. Shoppers Drug Mart and Dynacare Laboratory, 150 Montreal Rd.
- April 2, 2019, 7:30 p.m.–April 3, 2019, 7:45 p.m., The Ottawa Hospital General Campus, emergency department.
- April 3, 2019, 5:45 p.m.–April 4, 2019, 5:30 p.m. The Ottawa Hospital General Campus, 7 West.

For the case announced April 3, the locations of potential exposure are:

- March 26, 2019, 10 a.m.–6 p.m., 40 Hines Rd. – lobby, elevator or ground floor.
- March 27, 2019, 10 a.m.–3:30 p.m.: 40 Hines Rd. – lobby, elevator or ground floor.
- March 27, 2019, 5:30 p.m.–9 p.m.: Real Canadian Superstore, 760 Eagleson Rd.
- March 27, 2019, 5:30 p.m.–9 p.m.: Ottawa West Medical Centre, 760 Eagleson Rd. 2nd floor.
- March 30, 2019, 1 p.m.–5:45 p.m.: Queensway Carleton Hospital Emergency Department.
- April 2, 2019, 9 a.m.–noon: Queensway Carleton Hospital Ambulatory Care.

Anyone with early symptoms including fever, cough, white spots in the mouth or a rash, should isolate themselves and call before visiting a health provider.

The Ottawa Public Health website at ottawapublichealth.ca has additional information.



Dr. Barry Adams, who treated patients with serious complications from measles, is shocked to see the illness return. WAYNE CUDDINGTON FILES



A bottle of the combined vaccine for measles, mumps and rubella. POSTMEDIA FILES

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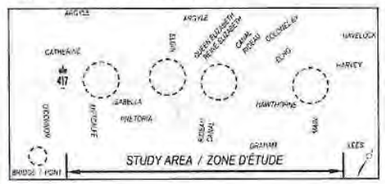
Summerwood

PUBLIC INFORMATION CENTRE NO. 2

Ottawa Queensway Downtown Bridges Environmental Assessment Study
Metcalfe Street to Main Street
Group Work Project 4170-13-00

THE STUDY

The Ontario **Ministry of Transportation (MTO)** has retained **BT Engineering Inc. (BTE)** to undertake a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study will determine the appropriate strategy for the rehabilitation or replacement of these bridges.



THE PROCESS

This study is following the Class *Environmental Assessment for Provincial Transportation Facilities (2000)* planning process for a Group "B" project, with the opportunity for external agency and public consultation throughout the project. The first Public Information Centre (PIC) was held in December 2017. This second PIC is being held at this key point in the study to present the technical recommendations and mitigation plan and to receive public input. The PIC will be 'drop in' format. Representatives of the MTO and BTE will be in attendance to receive comments and answer questions about the study. Please join us at the PIC scheduled on:

Date: Wednesday, April 24, 2019
Time: 4:00 p.m. - 8:00 p.m.
Location: Saint Paul University, Guigues Building, 223 Main Street, Ground Floor (enter off Main Street)

Upon completion of this study, a Transportation Environmental Study Report (TESR) will be prepared and made available for a 30-day public review period. A further notice of the TESR public review period will be published in the Ottawa Citizen and Le Droit and on the project website.

COMMENTS

If you cannot attend this PIC and you would like to discuss the project, receive additional information or provide input, please contact the BTE Project Manager or MTO Senior Project Engineer listed below, or visit the project website at: **www.queenswaydowntownbridges.com**

Steve Taylor, P.Eng.
Project Manager
BT Engineering Inc.
100 Craig Henry Drive, Suite 201
Ottawa, ON K2G 5W3
tel: 613 228-4813
toll-free: 1-855-228-4813
fax: 613-280-1305
e-mail: steven.taylor@bteng.com

Dave Lindensmith, P.Eng.
Senior Project Engineer
Ministry of Transportation
1355 John Counter Boulevard
Kingston, ON K7L 5A3
tel: 613 540-5130
toll-free: 1-800-267-0295
fax: 613 540-5106
e-mail: dave.lindensmith@ontario.ca

If you have any accessibility requirements in order to participate in this project, please contact one of the Project Team members listed above.

All information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act (2009)*. With the exception of personal information, all comments will become part of the public record.

Pour des renseignements en français, veuillez communiquer avec Daniel Riendeau au 613 228-4813 ou à daniel.riendeau@bteng.ca

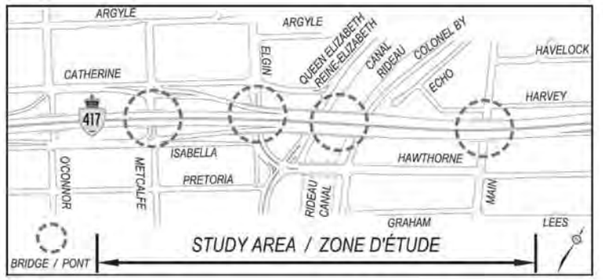
Ontario

DEUXIÈME SÉANCE D'INFORMATION PUBLIQUE

Étude d'évaluation environnementale des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main
Projet de groupe 4170-13-00

L'ÉTUDE

Le **ministère des Transports de l'Ontario (MTO)** a retenu les services de la société **BT Engineering Inc. (BTE)** pour réaliser une étude de conception préliminaire et d'évaluation environnementale de la réfection ou du remplacement de sept ponts (quatre emplacements) de l'autoroute 417 (Queensway) entre les rues Metcalfe et Main, incluant le pont du canal Rideau, à Ottawa. L'étude identifiera les stratégies à adopter pour la réfection ou le remplacement de ces ponts.



LE PROCESSUS

L'étude suit le processus de planification établi par l'*Évaluation environnementale de portée générale pour les installations provinciales de transport* (2000) pour les projets du groupe B et les organismes externes et le public seront consultés tout au long du projet. La première séance d'information publique (SIP) a eu lieu en décembre 2017. La deuxième SIP, présentée à cette étape critique du projet, a pour but de présenter les recommandations techniques et le plan d'atténuation et pour recueillir les idées et commentaires du public. La séance sera de type « portes ouvertes ». Des représentants du MTO et de BTE seront présents pour recueillir les commentaires et répondre aux questions. Nous vous invitons cordialement à assister à cette séance d'information publique :

Date : mercredi 24 avril 2019
Heure : 16 h à 20 h
Lieu : Université Saint-Paul, pavillon Guigues
223, rue Main, rez-de-chaussée (entrer par la rue Main)

Une fois l'étude terminée, un rapport d'étude environnementale sur les transports (REET) sera préparé et fera l'objet d'une période d'examen public de 30 jours. Un avis de dépôt du REET sera alors publié dans *l'Ottawa Citizen* et *Le Droit* et affiché sur le site web du projet.

COMMENTAIRES

Si vous ne pouvez assister à la SIP mais souhaitez discuter du projet, obtenir plus d'informations ou partager vos idées et commentaires, veuillez communiquer avec l'une ou l'autre des personnes suivantes, ou consultez le site web du projet à l'adresse suivante : **www.queenswaydowntownbridges.com**

Steve Taylor, P.Eng.
Gestionnaire du projet
BT Engineering Inc.
100, promenade Craig Henry, bureau 201
Ottawa (Ontario) K2G 5W3
tél. : 613 228-4813
sans frais : 1 855 228-4813
téléc. : 613 280-1305
courriel : steven.taylor@bteng.com

Dave Lindensmith, P.Eng.
Ingénieur principal de projet
Ministère des Transports de l'Ontario
1355, boulevard John Counter
Kingston (Ontario) K7L 5A3
tél. : 613 540-5130
sans frais : 1 800 267-0295
téléc. : 613 540-5106
courriel : dave.lindensmith@ontario.ca

Si vous avez des besoins particuliers en matière d'accessibilité pour pouvoir participer au projet, veuillez communiquer avec un des membres de l'équipe de projet mentionnés ci-dessus.

Tous les renseignements seront recueillis en conformité avec la *Loi sur l'accès à l'information et la protection de la vie privée* de 2009. À l'exception des renseignements personnels, tous les commentaires feront partie du domaine public.

Pour obtenir des renseignements en français, veuillez communiquer avec Daniel Riendeau au 613 228-4813 ou à daniel.riendeau@bteng.ca.

Ontario



Le VG de la Ville d'Ottawa, Ken Hughes — PATRICK WOODBURY, ARCHIVES LE DROIT

«Il y a beaucoup de choses qui ne vont pas»

SYLVIE BRANCH
sbranch@ledroit.com

De nombreuses lacunes ont été observées dans les contrats de location des propriétés appartenant à la Ville d'Ottawa, révèle le vérificateur général de la municipalité Ken Hughes dans son plus récent rapport annuel.

Le volumineux document de 121 pages contient 87 recommandations, lesquelles ont toutes été approuvées par la Ville.

Sur les huit sujets étudiés par le bureau du VG, les contrats de location remportent la palme du plus grand nombre de recommandations, soit 30. Ce programme de la Ville permet à la municipalité de générer des millions de dollars chaque année.

« C'est inhabituel, mais il y a beaucoup de choses qui ne vont pas », a lancé M. Hughes devant les membres du Comité de vérification lundi.

Les membres du Comité ont été nombreux à décrier la situation pointant du doigt l'administration municipale.

« C'est une vérification qui est inquiétante. Il s'agit d'un gaspillage de fonds des contribuables si nous ne maximisons pas nos installations », soutient le conseiller Georges Darouze.

L'équipe de M. Hugues rapporte que lorsque la Ville loue, à des entreprises privées ou à des groupes communautaires, les établissements qui lui appartiennent, elle n'a aucune politique de location générale, que les loyers ne correspondent pas toujours à leur valeur réelle sur le marché et que certains baux à long terme n'ont pas été renégociés depuis 15 ans.

Le directeur municipal, Steve Kanellakos, a affirmé que le personnel tentera de trouver des solutions afin d'éviter qu'une telle situation se reproduise.

Parmi les autres sujets abordés par le VG, il pointe du doigt les services d'ambulance. Selon M. Hughes, des correctifs doivent être apportés afin d'assurer que les renseignements personnels soient mieux protégés.

De plus, la municipalité doit revoir son système de sécurité plus particulièrement dans le cas des travailleurs saisonniers et des stagiaires.

« Il faut compter de cinq semaines à plusieurs mois avant qu'on annule les cartes d'accès des employés qui en sont plus au service de la Ville », note le bureau du VG.

Plan de vérification de 2019

VÉRIFICATIONS OPÉRATIONNELLES

- Service des règlements municipaux, application des règlements
- Services du parc automobile
- Théâtres Meridian Centrepointe
- Centres des arts Shenkman

VÉRIFICATIONS DE CONFORMITÉ

- Comptabilité et distributions en cascade de Lansdowne
- Fonds de prévoyance du train léger sur rail
- Plan d'approvisionnement relatif à la phase 2 du train léger sur rail

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Appendix A-2

Public Information Centre No. 1 Summary Report

BT ENGINEERING

Ottawa Queensway Downtown Bridges Preliminary Design and Environmental Assessment Study for Rehabilitation/Replacement GWP 4170-13-00

PIC No. 1 Summary Report

January 11, 2018

BT Eng Project 17-010

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1.0 Introduction

The Ministry of Transportation (MTO) initiated this Class Environmental Assessment (EA) in the summer of 2017 for the rehabilitation or replacement of 7 bridges on the Queensway from Metcalfe Street easterly to Main Street. The 7 bridges include 4 locations at Metcalfe Street, Elgin Street, Rideau Canal (including crossings of Queen Elizabeth Drive and Colonel By Drive) and Main Street.

This EA Study will complete all phases of the Provincial Transportation Facilities Class EA (MTO Class EA) for a Group B EA and Preliminary Design project by establishing the need and justification for the project, considering all alternatives and proactively involving the public in defining an EA and Preliminary Design recommended plan for improvements.

At the completion of the Group B EA and Preliminary Design project, a Transportation Environmental Study Report (TESR) will be prepared for a 30-day public review.

The project location is shown in **Figure 1** and the study area is shown in **Figure 2**.

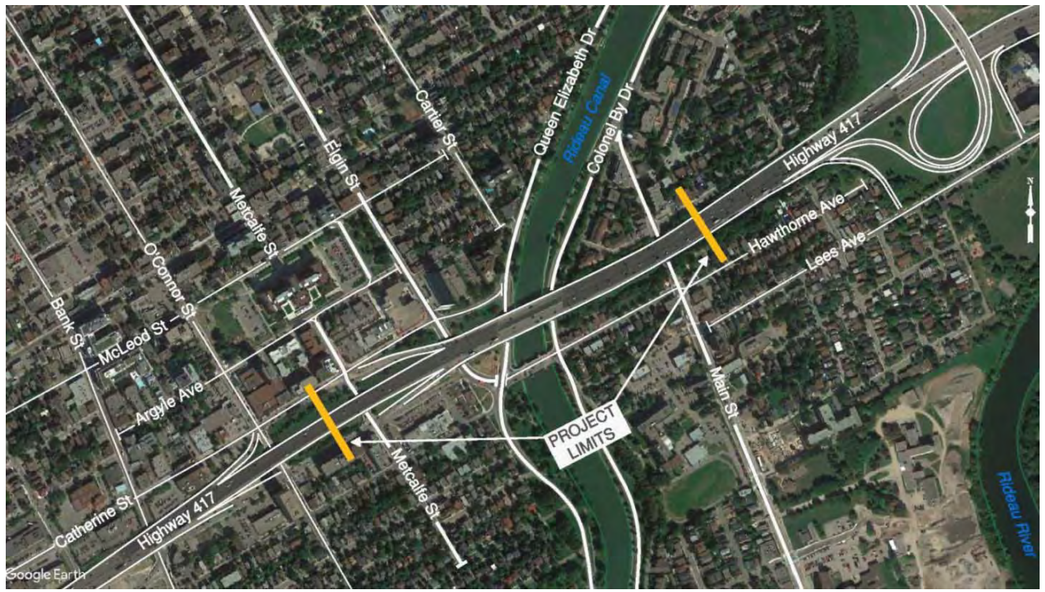


Figure 1: Project Location

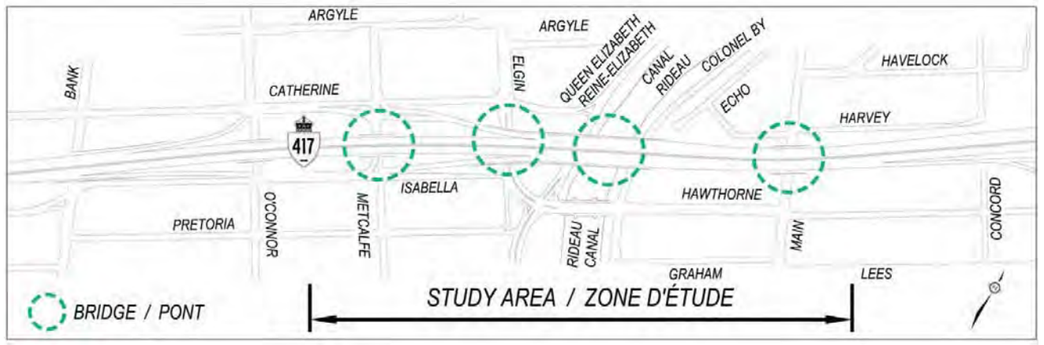


Figure 2: Study Area

The first Public Information Centre (PIC) for this project was held on:

Tuesday, December 5, 2017
at
Saint Paul University, Guigues Building
223 Main Street, Ground Floor
Ottawa, Ontario
3:00 pm to 4:00 pm (Agencies and Municipalities staff)
4:00 pm to 8:00 pm (Public and Stakeholders)

The Public Information Centre (PIC) included presenting the following:

- Project goals and the Problem and Opportunity Statement;
- Draft Study Design (Work Plan) for comments;
- Assessment of Alternative Planning Solutions;
- Environmental inventories, traffic analysis, and design criteria for roads and structures under study;
- Preliminary coarse screening of Design Alternatives;
- List of alternatives carried forward for detailed evaluation; and
- Explain the study process

MTO and consultant representatives were available to respond to any inquiries.

All members of the public and interest groups were invited to the first PIC to view the presentation material and to discuss the project with the MTO and consultant representatives.

Twenty-eight (28) people registered at the PIC. Each person was encouraged to provide a written comment regarding any issues or concerns.

2.0 Public and Agency Consultation

One of the key aspects of the project is to provide the public, interested parties, affected agencies and municipalities with the opportunity for input. In order to ensure this objective is met, a public and agency notification program was undertaken. The program includes a number of communication mechanisms, discussed in the following sections. A draft Study Design Report was available on the project website and at the PIC for public review.

2.1 Newspaper Notice and Flyers

Notice of the first PIC was placed in The Ottawa Citizen (in English) on November 28, 2017 and Le Droit (in French) on November 28, 2017.

Flyers, in English and French and identical to the notices, were hand delivered to over 700 public residents within the study area on November 28, 2017 and November 29, 2017, see **Figure 3**.

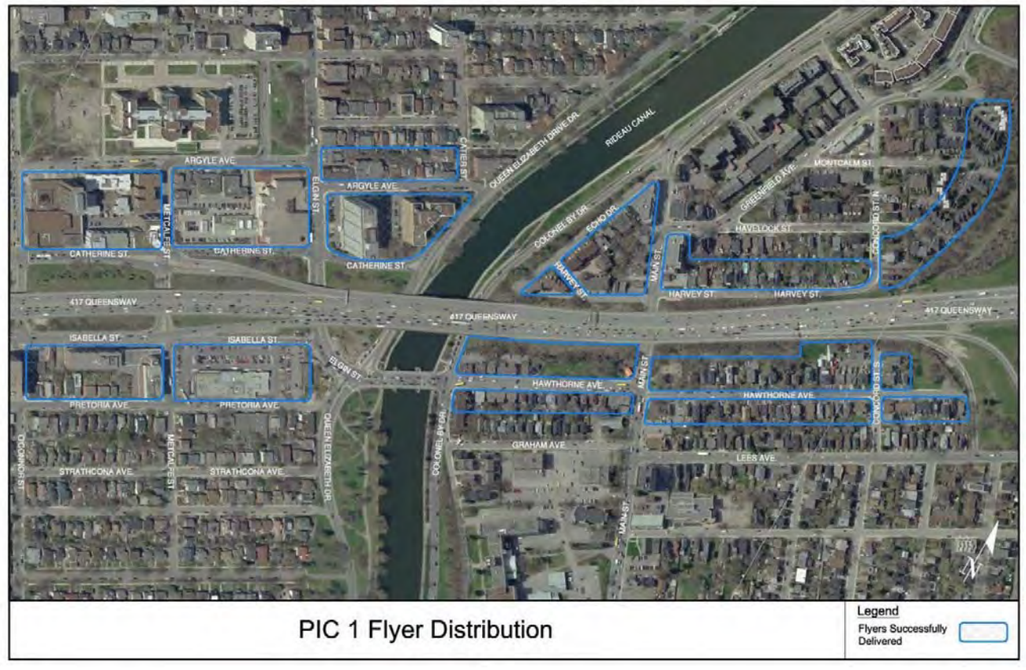


Figure 3: Flyer Distribution Map

The newspaper notices, flyers and select notification letters are found in **Appendix A**.

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of
Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street
GWP 4170-13-00
PIC No. 1 Summary Report

2.2 Agency and Stakeholder Contacts

The following agencies were invited to attend the PIC by mail and e-mail:

- Aboriginal Affairs and Northern Development Canada
- Canadian Environmental Assessment Agency Ontario Region
- Public Works
- Transport Canada / Navigable Waters Protection Program
- Ministry of Agriculture, Food and Rural Affairs
- Ministry of Environment and Climate Change (Ottawa District)
- Ministry of Indigenous Relations and Reconciliation
- Ministry of Natural Resources and Forestry
- Ministry of the Environment and Climate Change (Eastern Region)
- Ministry of Community and Social Services – Eastern Region
- Ministry of Innovation, Science and Economic Development Canada
- Ministry of Municipal Affairs and Housing
- Ministry of Tourism, Culture and Sport
- Ministry of Tourism, Culture and Sport, Ottawa Built Heritage Sub-Committee
- Rideau Valley Conservation Authority
- National Capital Commission (NCC)
- Parks Canada
- Ontario Provincial Police (Ottawa Detachment)
- City of Ottawa
- Conseil Des Écoles Catholiques De Langue Française Du Centre Est - Consortium de transport scolaire d'Ottawa
- Conseil Des Écoles Publiques De L'Est De L'Ontario
- Ottawa-Carleton District School Board and Catholic School Board / Ottawa Student Transportation Authority
- Ottawa-Carleton District School Board and Catholic School Board / Ottawa Student Transportation Authority
- Allstream
- Bell
- Enbridge Gas Distribution
- Hydro One Distribution
- Hydro One Transmission
- Hydro Ottawa
- Rogers Communications
- Capital Railway (O-Train)
- CP Rail
- CAA Ontario
- Ontario Trucking Association
- Dow's Lake Residents' Association
- Ottawa Bicycle Club
- Rideau River Residence Association
- Sustainable Living Ottawa East
- Invest Ottawa
- Ontario East Economic Development Commission
- Ottawa Chamber of Commerce
- Ottawa Real Estate Board
- Ottawa Tourism
- Transport Action Ontario
- Share the Road
- Vision Zero Canada
- Transportation Options
- Healthy Transportation Coalition
- ACORN Ottawa
- Action Sandy Hill
- Bank Street BIA
- Centretown Citizens' Community Association
- Citizens for Safe Cycling
- City Centre Coalition

- Community Activities Group of Old Ottawa East
- Dalhousie Community Association
- Downtown Rideau BIA
- Ecology Ottawa
- Envirocentre Ottawa
- Federation of Citizens' Associations of Ottawa-Carleton
- Glebe Annex Community Association
- Glebe BIA
- Glebe Community Association
- Glebe Report
- Lowertown Community Association
- Mainstreeter
- Old Ottawa South Community Association
- Ottawa East Community Association
- Ottawa Riverkeeper
- Preston Street BIA
- Somerset Street Chinatown BIA
- Somerset Village BIA
- The Centretown BUZZ
- Walk Ottawa
- GRC Architect

Notification of the PIC was communicated to all affected residents by newspaper notice and flyer, directly impacted local business owners by letter and advance meetings, local municipalities by letter/e-mail, Members of Provincial Parliament by letter, external agencies and interested groups by letter/e-mail.

2.3 Indigenous Peoples

Individual letters were sent to the following Indigenous Peoples in the vicinity of the Study Area, inviting them to attend the meeting:

- Bonnechere Algonquins First Nation
- Chippewas of Georgina Island
- Mississaugas of the New Credit First Nation
- Mississaugas of Scugog Island First Nation
- Beausoleil First Nation
- Alderville First Nation
- Curve Lake First Nation
- Williams Treaty First Nation
- Algonquins of Pikwakanagan
- Algonquins of Ontario
- Kinounchepinini Algonquin First Nation
- Kijicho Manito Madaouskarin – Anishinaabe Baptiste
- Algonquins of Greater Golden Lake First Nation
- Mattawa / North Bay Algonquin First Nation
- Shabot Obaadjiwan First Nation
- Snimikobi Algonquin First Nation
- Whitney and Area Algonquin Community
- Hiawatha First Nation
- Moose Deer Point First Nation
- Ottawa Region Métis Council
- Métis Nation of Ontario

3.0 PIC Comments

Fifty-two (52) display panels/boards were set up around the perimeter of the room, in both English and French, to be viewed at leisure. A copy of the PIC No. 1 presentation boards is provided in **Appendix B**.

Seven (7) comment sheets were received at the PIC. Five (5) emails were received during the subsequent 2-week comment period. Copies of the comments, excluding personal information, are provided in **Appendix C**. The results of the comments and discussions are summarized in the following sections.

3.1 Summary of Comments

The results of the comments received and discussions held at the PIC No. 1 are summarized below in **Table 1**. The comments have been summarized by general subject matter.

Table 1: Summary of Written Comments
Public Information Centre No. 1
December 5, 2017

Comment	Number of Respondents	Comment Sheet Reference No.
Should consult with the City of Ottawa	1	1
Ottawa by-pass is preferable to widening the Queensway	1	1
Very comprehensive and informative meeting	2	2, 3
The Royal Oak is a community meeting place and any replacements should be cohesive with the current community setting	1	4
Any replacement of the Gordon Construction building should be cohesive with the current community setting	1	4
All trees that require removal in Ballantyne Park should be replaced	1	4
The aesthetics of the future Rideau Canal bridge should be improved	1	5
Support for Alternative D	1	5
Request to be added to the mailing list	10	1 to 10
Elgin Street width should be reviewed to provide cycling lanes	1	8
Piers should be removed from the canal	1	8
The design criteria should include consideration of the impact of the structures on the surroundings – in addition to those of interest to the NCC	1	9
Provide the PIC exhibits	2	11, 12

4.0 Conclusions

The PIC No. 1 conclusions were:

- No objection to the coarse screening recommendations presented.
- No additional comments on the draft Study Design were received.

- Support for reducing traffic delays and longer term lane and ramp closures on the Queensway.
- Reduce any impact to emergency services response time, by minimizing lane and ramp closures on the Queensway.
- The information presented at the PIC was comprehensive.
- Coordination with the City of Ottawa is needed.
- Consider a southern Bypass of Ottawa.
- Royal Oak pub and the Gordon Construction buildings are community assets.
- Any impact to Ballantyne Park for temporary uses should protect, or replace, large trees.
- Improve the aesthetics of the Rideau Canal Bridge, i.e. Support for Alternative D.
- Twelve (12) individuals requested to be added to the study mailing list.

Appendix A
Newspaper Notices, Flyers and Letters



Newspaper Notices

NOTICE OF PUBLIC INFORMATION CENTRE #1

Ottawa Queensway Downtown Bridges Environmental Assessment Study
Metcalfe Street to Main Street / Group Work Project 4170-13-00

THE STUDY

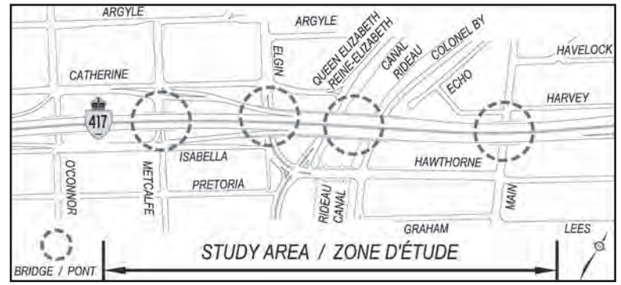
The **Ontario Ministry of Transportation (MTO)** has retained **BT Engineering Inc. (BTE)** to undertake a preliminary design and environmental assessment study for the rehabilitation and/or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study will determine the appropriate strategy for the rehabilitation or replacement of these bridges.

THE PROCESS

This study is following the *Class Environmental Assessment for Provincial Transportation Facilities* (2000) planning process for a Group "B" project, with the opportunity for external agency and public consultation throughout the project. The first Public Information Centre (PIC) is being held at this key point in the study to provide the public with information regarding the study and to receive public input. The PIC will be 'drop in' format. Representatives of the MTO and BTE will be in attendance to receive comments and answer questions about the study.

MTO cordially invites you to the first PIC. The purpose of the meeting will be to present the:

- Project goals and the problem and opportunity statement;
- Draft Study Design (Work Plan) for comments;
- Assessment of Alternative Planning Solutions;
- Environmental inventories, traffic analysis, and design criteria for roads and structures under study;
- Preliminary coarse screening of Design Alternatives;
- List of alternatives carried forward for detailed evaluation;
- Explain the study process; and
- Obtain your comments and answer your questions.



Please join us at the PIC scheduled on:

Date: **Tuesday, December 5, 2017**
Time: **4:00 p.m. to 8:00 p.m.**
Location: **Saint Paul University, Guigues Building - 223 Main Street, Ground Floor (Enter off Main Street)**

A second PIC will be scheduled to present the technical recommendations and mitigation plan to agencies and members of the public and obtain comments, and to discuss any concerns with regards to the proposed undertaking. A notice providing the date, time, and location of the second PIC will be published in the Ottawa Citizen and Le Droit and at the project website.

Upon completion of this study, a Transportation Environmental Study Report (TESR) will be prepared and made available for a 30-day public review period. A further notice of TESR Submission will be published in the Ottawa Citizen and Le Droit and on the project website: **www.queenswaydowntownbridges.com**

COMMENTS

If you cannot attend this PIC, and you would like to discuss the project, receive additional information, or provide input, please contact the Consultant Project Manager or MTO Senior Project Engineer listed below or visit the project website:

Steve Taylor, P.Eng., Project Manager
BT Engineering Inc.
100 Craig Henry Drive, Suite 201, Ottawa, ON K2G 5W3
tel: 613-228-4813 / toll-free: 1-855-228-4813
fax: 613-280-1305
e-mail: steven.taylor@bteng.com

Dave Lindensmith, P.Eng., Senior Project Engineer
Ministry of Transportation
1355 John Counter Boulevard, Kingston, ON K7L 5A3
tel: 613-547-1740 / toll-free: 1-800-267-0295
fax: 613-540-5106
e-mail: dave.lindensmith@ontario.ca

If you have any accessibility requirements in order to participate in this project, please contact one of the Project Team members listed above.

All information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act* (2009). With the exception of personal information, all comments will become part of the public record.

Pour des renseignements en français, veuillez communiquer avec Daniel Riendeau au 613 228-4813 ou à daniel.riendeau@bteng.ca.

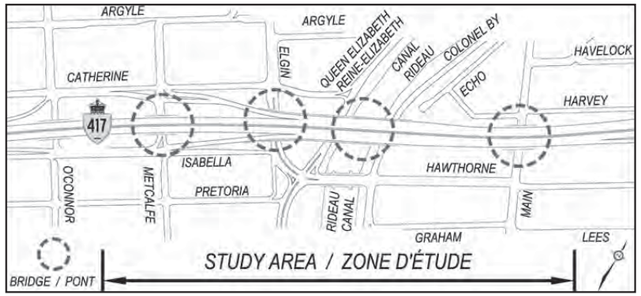
Ontario

AVIS DE TENUE DE LA PREMIÈRE SÉANCE D'INFORMATION PUBLIQUE

Étude d'évaluation environnementale des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main / GWP 4170-13-00

L'ÉTUDE

Le **ministère des Transports de l'Ontario (MTO)** a retenu les services de la société **BT Engineering (BTE)** pour réaliser une étude de conception préliminaire et d'évaluation environnementale de la réfection ou du remplacement de sept ponts (quatre emplacements) de l'autoroute 417 (Queensway) entre les rues Metcalfe et Main, incluant le pont du canal Rideau, à Ottawa. L'étude identifiera les stratégies à adopter pour la réfection ou de remplacement de ces ponts.



LE PROCESSUS

L'étude suivra le processus de planification établi par l'*Évaluation environnementale de portée générale pour les installations provinciales de transport* (2000) pour les projets du groupe B et les organismes externes et le public seront consultés tout au long du projet. La première séance d'information publique (SIP) a lieu à cette étape critique du projet afin de présenter le projet et de recueillir les idées et commentaires du public. La séance sera de type « portes ouvertes ». Des représentants du MTO et de BTE seront présents pour recueillir les commentaires et répondre aux questions.

Le MTO vous invite cordialement à assister à cette première SIP. Cette séance aura pour but de présenter :

- les objectifs du projet et l'énoncé des enjeux et des possibilités;
- l'étude de conception préliminaire (plan de travail), aux fins de commentaires;
- l'évaluation des solutions de planification alternatives;
- les inventaires environnementaux, l'analyse de la circulation et les critères de conception des routes et des structures à l'étude;
- une évaluation préliminaire des solutions de conception;
- une liste des solutions retenues pour évaluation détaillée;
- le processus de planification.

Venez participer à la première séance d'information publique :

Date : **mardi 5 décembre 2017**
Heure : **16 h à 20 h**
Lieu : **Université Saint-Paul, pavillon Guigues**
223, rue Main, rez-de-chaussée (entrer par la rue Main)

Une deuxième SIP sera organisée pour présenter les recommandations techniques et le plan d'atténuation aux organismes concernés et au public, obtenir des commentaires et discuter de toute préoccupation au sujet du projet proposé. Un avis précisant la date, l'heure et le lieu de la deuxième SIP sera publié dans l'Ottawa Citizen et Le Droit, et sera affiché sur le site web du projet à l'adresse suivante : **www.queenswaydowntownbridges.com**

Une fois l'étude terminée, un rapport d'étude environnementale sur les transports (REET) sera préparé et fera l'objet d'une période d'examen public de 30 jours. Un avis de dépôt du REET sera alors publié dans l'Ottawa Citizen et Le Droit et affiché sur le site web du projet.

COMMENTAIRES

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tél. : 613 547-1740 / sans frais : 1 800 267-0295
téléc. : 613 540-5106
courriel : dave.lindensmith@ontario.ca

Si vous avez des besoins particuliers en matière d'accessibilité pour pouvoir participer au projet, veuillez communiquer avec un des membres de l'équipe de projet mentionnés ci-dessus.

Tous les renseignements seront recueillis en conformité avec la *Loi sur l'accès à l'information et la protection de la vie privée* de 2009. À l'exception des renseignements personnels, tous les commentaires feront partie du domaine public.

Pour des renseignements en français, veuillez communiquer avec Daniel Riendeau au 613 228-4813 ou à daniel.riendeau@bteng.ca.

Ontario

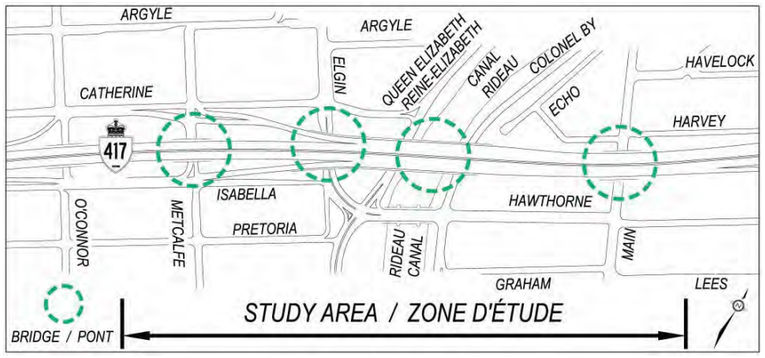
Flyers

ONTARIO GOVERNMENT NOTICE

Notice of Public Information Centre #1

Ottawa Queensway Downtown Bridges Environmental Assessment Study
Metcalfe Street to Main Street
Group Work Project 4170-13-00

THE STUDY - The **Ontario Ministry of Transportation (MTO)** has retained **BT Engineering Inc. (BTE)** to undertake a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study will determine the appropriate strategy for the rehabilitation or replacement of these bridges.



THE PROCESS - This study is following the *Class Environmental Assessment for Provincial Transportation Facilities (2000)* planning process for a Group "B" project, with the opportunity for external agency and public consultation throughout the project. The first Public Information Centre (PIC) is being held at this key point in the study to provide the public with information regarding the study and to receive public input. The PIC will be 'drop in' format. Representatives of the MTO and BTE will be in attendance to receive comments and answer questions about the study.

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COMMENTS

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AVIS DU GOUVERNEMENT DE L'ONTARIO

Avis de tenue de la première séance d'information publique

Étude d'évaluation environnementale des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main
GWP 4170-13-00

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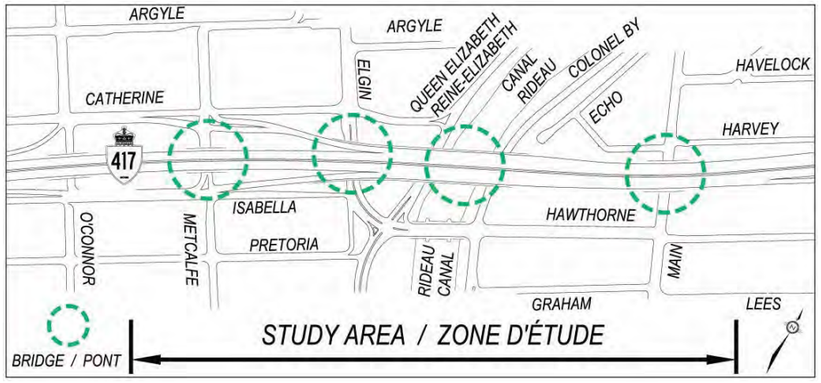

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Sample Letters

November 23, 2017

Dear Stakeholder/Resident:

Re: Ontario Ministry of Transportation (MTO) – Environmental Assessment Study for the Rehabilitation / Replacement of Ottawa Queensway Downtown Bridges, Metcalfe Street to Main Street (G.W.P. 4170-13-00)

Notice of Public Information Centre No. 1

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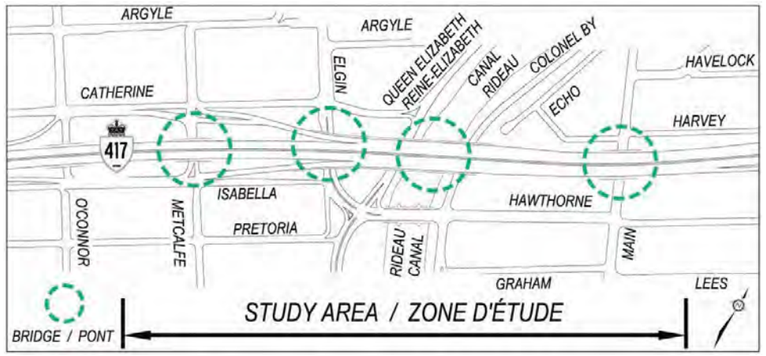

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BT Engineering
100 Craig Henry Drive, Suite 201
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Upon completion of this study, a Transportation Environmental Study Report (TESR) will be prepared and made available for a 30-day public review period. A further notice of TESR Submission will be published in the Ottawa Citizen and Le Droit and on the project website.

COMMENTS

If you cannot attend this PIC, and you would like to discuss the project, receive additional information, or provide input, please contact the Consultant Project Manager or MTO Senior Project Engineer listed below or visit the project website: **www.queenswaydowntownbridges.com**

Steve Taylor, P. Eng.
Project Manager
BT Engineering Inc.
100 Craig Henry Drive, Suite 201
Ottawa, Ontario K2G 5W3
Tel.: 613-228-4813
Toll Free: 1-855-228-4813
Fax: 613-280-1305
steven.taylor@bteng.com

Dave Lindensmith, P. Eng.
Senior Project Engineer
Ministry of Transportation
1355 John Counter Boulevard
Kingston, Ontario K7L 5A3
Tel.: 613-547-1740
Toll Free: 1-800-267-0295
Fax: 613-540-5106
dave.lindensmith@ontario.ca

Preliminary Design and Environmental Assessment Study for the Rehabilitation / Replacement
of Ottawa Queensway Downtown Bridges, Metcalfe Street to Main Street (G.W.P. 4170-13-00)
November 23, 2017

If you have any accessibility requirements in order to participate in this project please contact one of the Project Team members listed above.

All information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act* (2009). With the exception of personal information, all comments will become part of the public record.

Pour des renseignements en français, veuillez communiquer avec Daniel Riendeau au 613 228-4813 ou à daniel.riendeau@bteng.ca.

Yours truly,



Steve Taylor, P. Eng., BTE
Project Manager

c.c. Dave Lindensmith, Senior Project Engineer, MTO Eastern Region Planning & Design Section
Kevin Ogilvie, MTO Senior Environmental Planner
Gordon Bell, Consultant Environmental Planner

November 23, 2017

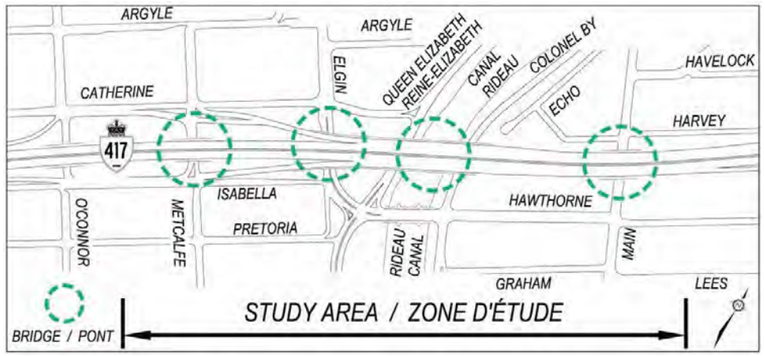
Dear Sir/Madam:

Re: Ontario Ministry of Transportation (MTO) – Environmental Assessment Study for the Rehabilitation / Replacement of Ottawa Queensway Downtown Bridges, Metcalfe Street to Main Street (G.W.P. 4170-13-00)

Notice of Public Information Centre No. 1

THE STUDY

The Ontario Ministry of Transportation (MTO) has retained BT Engineering Inc. (BTE) to undertake a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study will determine the appropriate strategy for the rehabilitation or replacement of these bridges.



THE PROCESS

This study is following the *Class Environmental Assessment for Provincial Transportation Facilities (2000)* planning process for a Group "B" project, with the opportunity for external agency and public consultation throughout the project. The first Public Information Centre (PIC) is being held at this key point in the study to provide the public with information regarding the study and to receive public input. The PIC will have a 'drop in' format. Representatives of the MTO and BTE will be in attendance to receive comments and answer questions about the study.

MTO cordially invites you to the first PIC. The purpose of the meeting will be to present:

- Project goals and the Problem and Opportunity statement;
- Draft Study Design (Work Plan) for comments;
- Assessment of Alternative Planning Solutions;
- Environmental inventories, traffic analysis, and design criteria for roads and structures under study;
- Preliminary coarse screening of Design Alternatives;
- List of alternatives carried forward for detailed evaluation;
- Explain the study process; and
- Obtain your comments and answer your questions.

For your convenience, a time for you to review the project has been scheduled prior to the public viewing, which will also be attended by other agencies and interest groups. There will be an opportunity to discuss any concerns with MTO staff and members of the consulting team and to provide written comments. Please join us at the PIC scheduled on:

Date: Tuesday, December 5, 2017
Pre-PIC Session Time: 3:00 pm to 4:00 pm
Public Session Time: 4:00 pm to 8:00 pm
Location: Saint Paul University, Guigues Building, 223 Main Street, Ground Floor (enter off Main Street)

A second PIC will be scheduled to present the technical recommendations and mitigation plan to agencies and members of the public and obtain comments, and to discuss any concerns with regard to the proposed undertaking. A notice providing the date, time, and location of the second PIC will be published in the Ottawa Citizen and Le Droit and on the project website.

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Project Manager

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Kevin Ogilvie, MTO Senior Environmental Planner
Gordon Bell, Consultant Environmental Planner

Ministry of Transportation

Planning and Design Section
1355 John Counter Boulevard
Postal Bag 4000
Kingston, Ontario K7L 5A3
Tel.: 613-540-5130
Fax: 613-540-5106

Ministère des Transports

Section de la planification et de la conception
1355, boulevard John Counter
CP/Service de sacs 4000
Kingston (Ontario) K7L 5A3
Tél.: 613-540-5130
Téléc. 613 540-5106

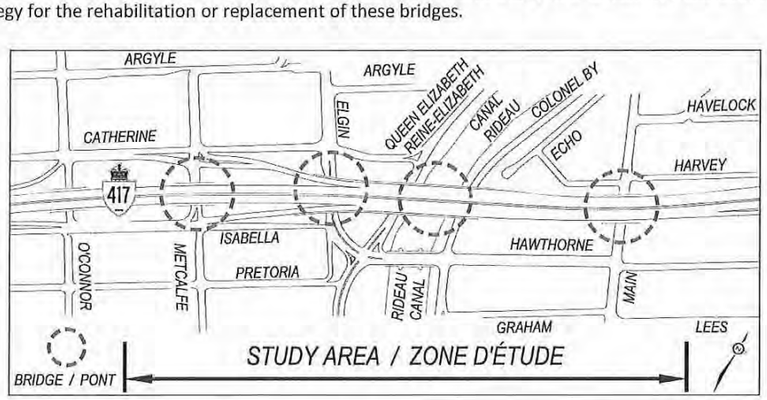
Ontario

November 27, 2017

[redacted]
Algonquins of Pikwakanagan
[redacted]

Dear [redacted]:

The Ontario Ministry of Transportation (MTO) has retained BT Engineering Inc. (BTE) to undertake a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study will determine the appropriate strategy for the rehabilitation or replacement of these bridges.



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Please contact me at any time should you have any questions or concerns about this project.

Yours truly,

Dave Lindensmith, P. Eng.
Senior Project Engineer
Ministry of Transportation

c.c. Steve Taylor, Consultant Project Manager
Kevin Ogilvie, MTO Senior Environmental Planner
Gordon Bell, Consultant Environmental Planner

Appendix B
PIC No. 1 Exhibits



Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street

Group Work Project No. 4170-13-00



Public Information Centre No. 1

Tuesday, December 5, 2017

Saint Paul University

Ottawa

Welcome

Welcome to the first Public Information Centre (PIC) meeting for the Preliminary Design and Environmental Assessment (EA) Study for the Rehabilitation/ Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street. Please sign in on the Attendance Sheet and obtain a Comment Sheet at the Registration Desk.

The purpose of this PIC is to present information concerning:

- Project Overview and Study Area
- EA Process and Schedule
- Draft Study Design Report
- Existing Conditions (Environmental, Traffic, Bridges)
- Planning Alternatives and Preliminary Recommendations
- Preliminary Design Alternatives
- Next Steps
- Obtain your Comments

Should you have any questions regarding the presentation materials, background reports or any other aspect of the study, please speak to MTO or Consultant Study Team members in attendance.

We encourage your input/feedback/concerns on the material being presented on the display boards. Please deposit completed Comment Sheets in the Comment Box or mail/ e-mail to the address at the bottom of the form by **December 19, 2016**.

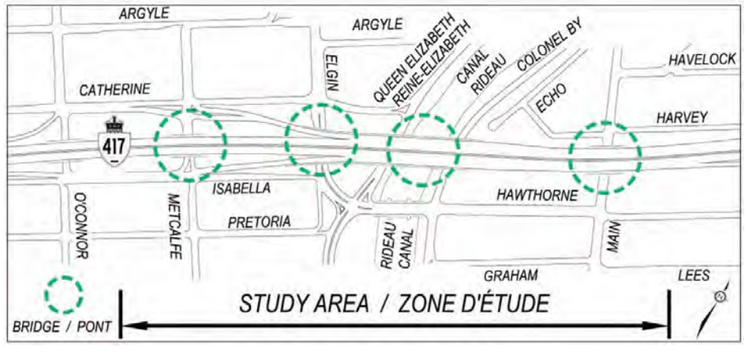
There is an opportunity at any time during the EA process for interested persons to provide written input. Any comments received will be collected under the *Environmental Assessment Act* and *Freedom of Information and Protection of Privacy Act* and, with the exception of personal information, will become part of the public record.

Introduction

MTO is conducting an Environmental Assessment and Preliminary Design study to establish bridge management plans for 7 bridges at 4 sites on the Ottawa Queensway at the following locations: Metcalfe Street; Elgin Street; Rideau Canal; and Main Street. The Study Area is presented below. The study is assessing both rehabilitation and replacement alternatives.

The Study Area has been divided to allow for three levels of analysis. The “Broader Study Area” includes the geographic area of the City where temporary short term offsite detour routes are being considered for freeway closures. The “Immediate Study Area” focuses on the Queensway Corridor generally within or adjacent to the MTO right-of-way that will include the bridge alternatives and staging areas for construction sites. The “Local Study Areas” focus on the bridges at each individual site location.

A draft Study Design Report has been prepared to present: the proposed problem and opportunity statement; a blueprint of the proposed Work Plan and Study Process; proposed alternatives to the undertaking; proposed alternative methods and the proposed evaluation process; proposed public, agency and indigenous peoples consultation; and proposed documentation and post study steps. The report outlines the key activities required to complete the study and the EA preliminary planning and design process. This document elicits early input on the planning process and comments are encouraged. The draft Study Design will be finalized following this PIC.



***The draft Study Design Report is available on the Resource Table**

Background Studies

Other studies that have been completed and their relevance to this study include:

2007: Highway 417 (Ottawa Queensway) from Highway 416 easterly to Anderson Road, Environmental Assessment and Preliminary Design Study (GWP 663-930-00) – this EA defined the long term vision for the Queensway for operational and safety improvements. This previous study completed the “planning” phase of the Queensway corridor but did not discuss site-specific bridge management plans.

2016: Ottawa Queensway Mid-town Bridges from Holland Avenue to O’Connor Street, Environmental Assessment and Preliminary Design Study (GWP 4075-11-00) – this EA defined bridge management plans for rehabilitation and replacement projects to the west of the current study area. The current EA is now reviewing the structural bridge management plans required for the next 7 structures to the east adjacent to the Midtown bridges project.

The 2007 and 2016 TESR’s are available on the Resource Table

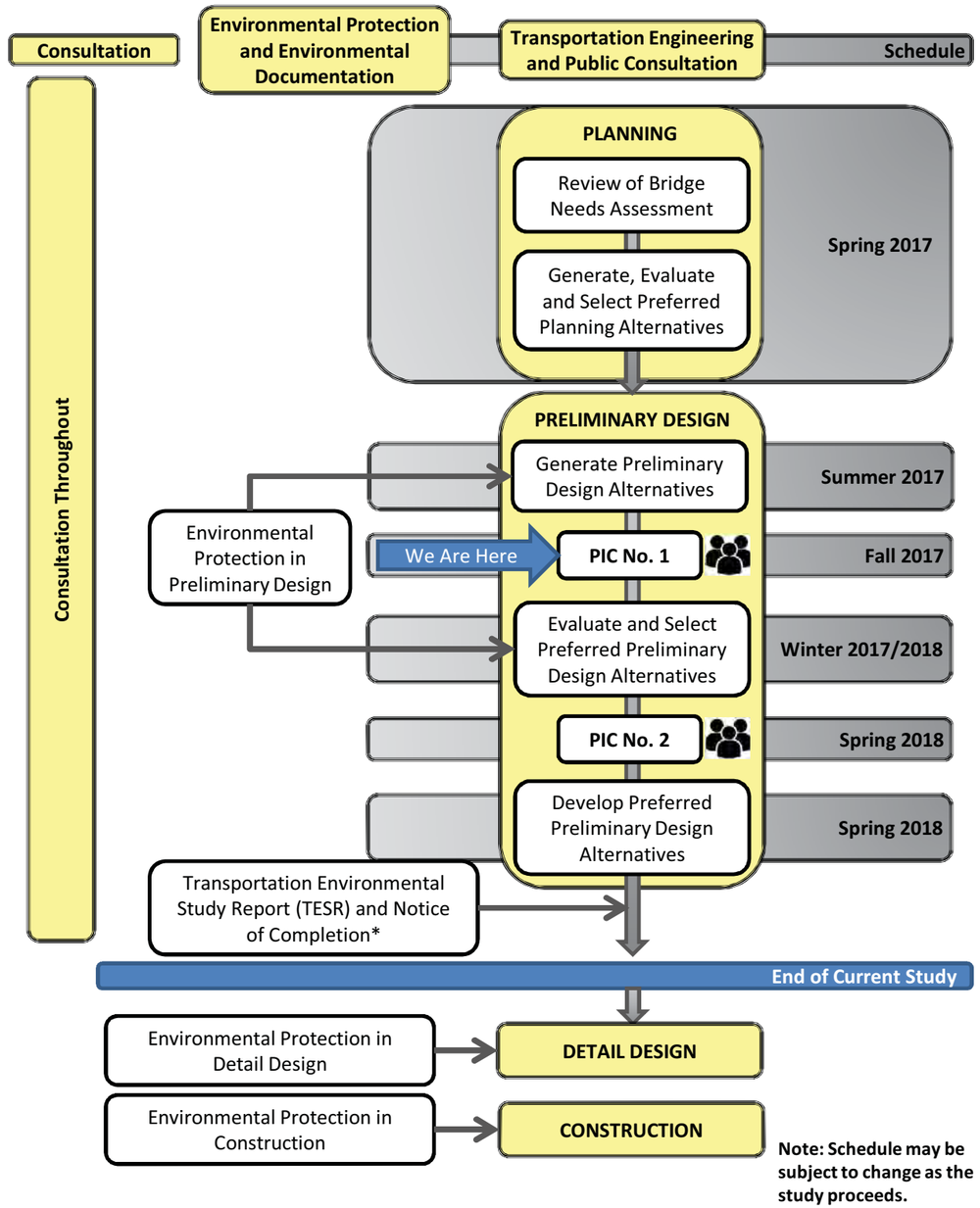
Overview of the MTO Class EA Process for Group B Projects

This project is being conducted in accordance with the requirements of the Ministry of Transportation (MTO) Class Environmental Assessment for Provincial Transportation Facilities (2000) for a Group B project. As part of these requirements, the following will occur:

- A Transportation Environmental Study Report (TESR) will be prepared and filed with the Regional Office of the Ministry of the Environment and Climate Change for a 30-day public review period.
- A public notice will be published in the local newspaper at the time of submission for the TESR. The public notice for the TESR will identify any additional location(s) where the document can be viewed.

You are encouraged to contact the MTO Project Team if you have questions or concerns about this study. If you feel, after consulting with MTO staff, that serious environmental concerns remain unresolved, it is your right to request that the project be subject to an Individual Environmental Assessment. The decision rests with the Minister of the Environment and Climate Change.

Overview of the MTO Class EA Process for Group B Projects



***The TESR will be made available for public review and comment for a period of 30 days**

Problem / Opportunity Statement

Problem:

The seven (7) Ottawa Queensway Downtown bridges date from the original Queensway construction from 1959 to 1968. The Queensway Rideau Canal Bridge is nearing the end of its service life. Unlike the 23 Mid-town bridges to the west, these bridges do not have individual or coordinated bridge management plans for rehabilitation or replacement to ensure the continued safe operation of the highway for the future planning horizon.

Opportunity:

- Establish bridge management plans for the 7 Queensway bridges from Main Street to Metcalfe Street, continuing the MTO program of establishing bridge management plans from west to east along the Queensway.
- Coordinate the bridge management plans for the 7 bridges based on design, traffic staging and construction considerations.

Existing Conditions/Constraints

Overall Constraints:

- Very restricted Highway 417 right-of-way and limited staging sites
- Current land uses of potential staging sites

Major Utilities

- Buried hydro cable, gas mains
- Major City of Ottawa trunk watermain (1200 mm)

Rideau Canal

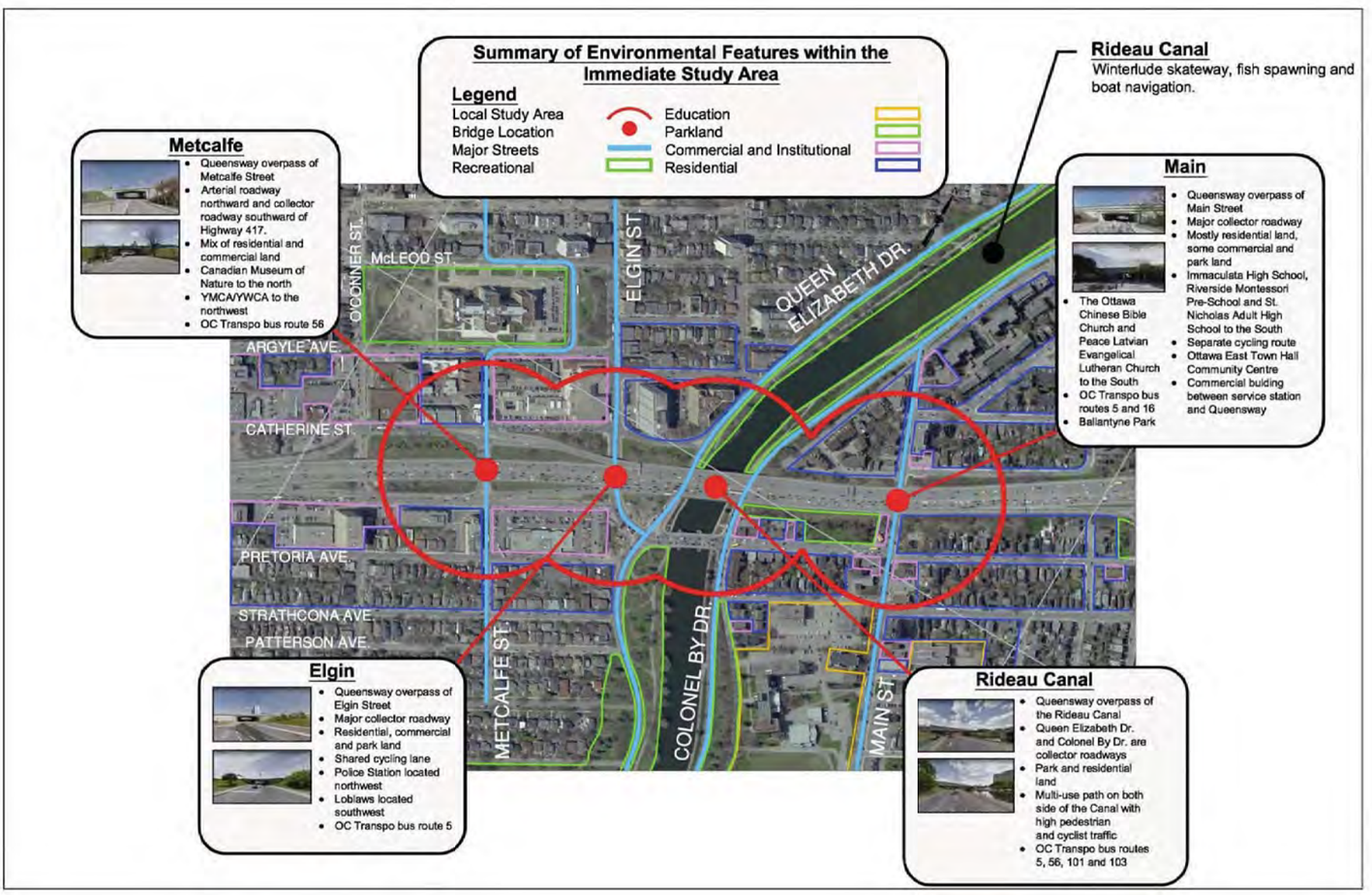
- UNESCO World Heritage Site
- Timing constraints: boating season (May to Thanksgiving weekend in October); Winterlude skating (January to March); fish spawning period (April to July)
- Maintain access under bridge for Colonel By Drive and Queen Elizabeth Drive and multi-use pathways
- Possible contaminated site due to canal and railway past activities

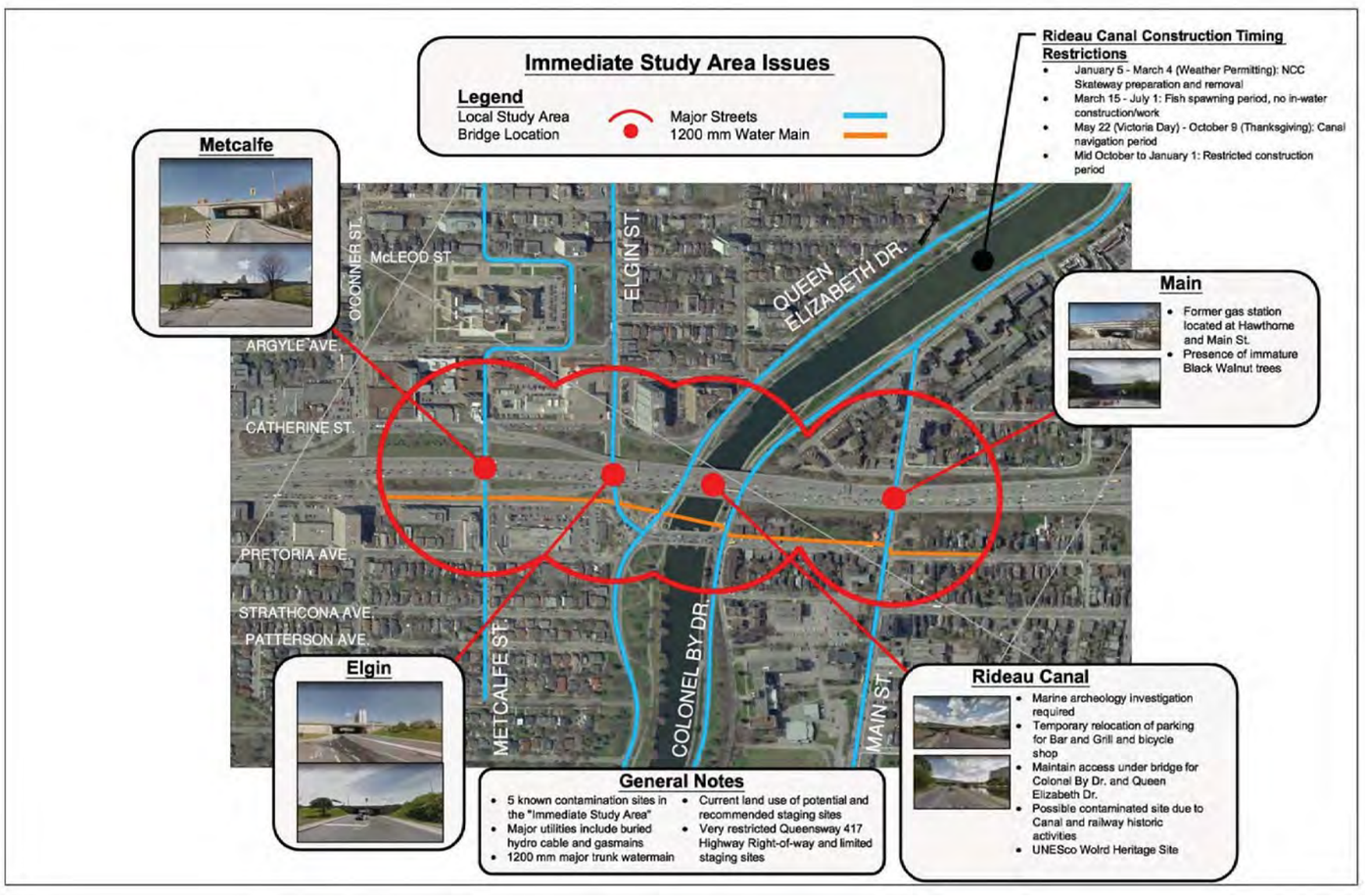
Main Street

- Former gas station
- Ottawa East Town Hall Community Centre
- Commercial building between service station and Queensway
- Ballantyne Park

Metcalfe Street /Elgin Street

- No known constraints


Summary of Environmental Features within the Immediate Study Area
Legend
Local Study Area
Bridge Location
Major Streets
Recreational
Education
Parkland
Commercial and Institutional
Residential
Rideau Canal
Winterlude skateway, fish spawning and boat navigation.
Metcalfe
Queensway overpass of Metcalfe Street
Arterial roadway northward and collector roadway southward of Highway 417.
Mix of residential and commercial land
Canadian Museum of Nature to the north
YMCA/YWCA to the northwest
OC Transpo bus route 56
Main
Queensway overpass of Main Street
Major collector roadway
Mostly residential land, some commercial and park land
Immaculata High School, Riverside Montessori Pre-School and St. Nicholas Adult High School to the South
Separate cycling route
Ottawa East Town Hall Community Centre
Commercial bulding between service station and Queensway
The Ottawa Chinese Bible Church and Peace Latvian Evangelical Lutheran Church to the South
OC Transpo bus routes 5 and 16
Ballantyne Park
O'CONNER ST.
McLEOD ST.
ELGIN ST.
QUEEN ELIZABETH DR.
ARGYLE AVE.
CATHERINE ST.
PRETORIA AVE.
STRATHCONA AVE.
PATTERSON AVE.
METCALFE ST.
COLONEL BY DR.
MAIN ST.
Elgin
Queensway overpass of Elgin Street
Major collector roadway
Residential, commercial and park land
Shared cycling lane
Police Station located northwest
Loblaws located southwest
OC Transpo bus route 5
Rideau Canal
Queensway overpass of the Rideau Canal
Queen Elizabeth Dr. and Colonel By Dr. are collector roadways
Park and residential land
Multi-use path on both side of the Canal with high pedestrian and cyclist traffic
OC Transpo bus routes 5, 56, 101 and 103


Immediate Study Area Issues
Legend
Local Study Area
Bridge Location
Major Streets
1200 mm Water Main
Rideau Canal Construction Timing Restrictions
January 5 - March 4 (Weather Permitting): NCC Skateway preparation and removal
March 15 - July 1: Fish spawning period, no in-water construction/work
May 22 (Victoria Day) - October 9 (Thanksgiving): Canal navigation period
Mid October to January 1: Restricted construction period
Metcalfe
Main
Former gas station located at Hawthorne and Main St.
Presence of immature Black Walnut trees
O'CONNER ST.
McLEOD ST.
ELGIN ST.
QUEEN ELIZABETH DR.
ARGYLE AVE.
CATHERINE ST.
PRETORIA AVE.
STRATHCONA AVE.
PATTERSON AVE.
METCALFE ST.
COLONEL BY DR.
MAIN ST.
Elgin
Rideau Canal
Marine archeology investigation required
Temporary relocation of parking for Bar and Grill and bicycle shop
Maintain access under bridge for Colonel By Dr. and Queen Elizabeth Dr.
Possible contaminated site due to Canal and railway historic activities
UNESCo Wolrd Heritage Site
General Notes
5 known contamination sites in the "Immediate Study Area"
Major utilities include buried hydro cable and gasmains
1200 mm major trunk watermain
Current land use of potential and recommended staging sites
Very restricted Queensway 417 Highway Right-of-way and limited staging sites

Existing Conditions – Environmental

The existing physical, biological, and socio-economic resources within the study area as well as the existing traffic and bridge conditions are being studied to assess the potential impacts of the proposed undertaking. The following studies have been conducted or are in progress as part of this project:

- ✓ Terrestrial and Aquatic
- ✓ Stage 1 Archaeological Assessment
- ✓ Land Use Planning
- ✓ Contamination Overview Study
- ✓ Context Sensitive Design
- ✓ Sourcewater Protection
- ✓ Noise

The Highway 417 (Ottawa Queensway) from Highway 416 Easterly to Anderson Road Preliminary Design Study and Environmental Assessment (G.W.P 663-93-00) Transportation Environmental Study Report (TESR) (January 2007), the Preliminary Design and Environmental Assessment for the Rehabilitation / Replacement of Ottawa Queensway Mid-town Bridges from Holland Avenue to O'Connor Street (GWP 4075-11-00) TESR (April 2016) and the accompanying background studies have also been reviewed for this project.

Natural Environment

Aquatic Assessment

A field survey undertaken on the Rideau Canal on October 22, 2017 at the Queensway Bridges. Although the canal had been lowered several days earlier, water levels were sufficient to access the canal and obtain a representative sample of the fish community. The following species were captured, identified and released: pumpkinseed, Johnny Darter, common carp, white sucker, brown bullehead, smallmouth bass, yellow perch, rock bass and bluegill.

A Parks Canada contract in 2008 to conduct inventories along the Rideau Canal, primarily for aquatic Species at Risk – pugnose shiner (Notropis anogenus), bridle shiner (Notropis bifrenatus), river redhorse (Moxostoma carinatum) and American eel (Anguilla rostrata) – was undertaken by the Fish Ecology and Conservation Physiology Laboratory at Carleton University. During these surveys 28 fish species were identified. No priority target species were encountered.





Terrestrial Assessment

A highly urbanized environment forms the bulk of the study area and staging areas. The botanical species found on the typically manicured Kentucky bluegrass slopes beyond the elevated highway surfaces are for the most part plantings or introduced landscape species. No vegetation, fauna or avian Species at Risk were identified during field investigations.







Archaeology

A Stage 1 Archaeological Assessment was completed within the Study Area to determine the archaeological potential for the recovery of both pre-contact and Euro-Canadian archaeological resources. This archaeological potential has been removed through significant past disturbance associated with the development of the Project Area. The figure below illustrates the archaeological potential within the Study Area and potential staging sites (candidate construction areas to build replacement bridges off-site). The review of staging sites is presented on a subsequent exhibit.



LEGEND

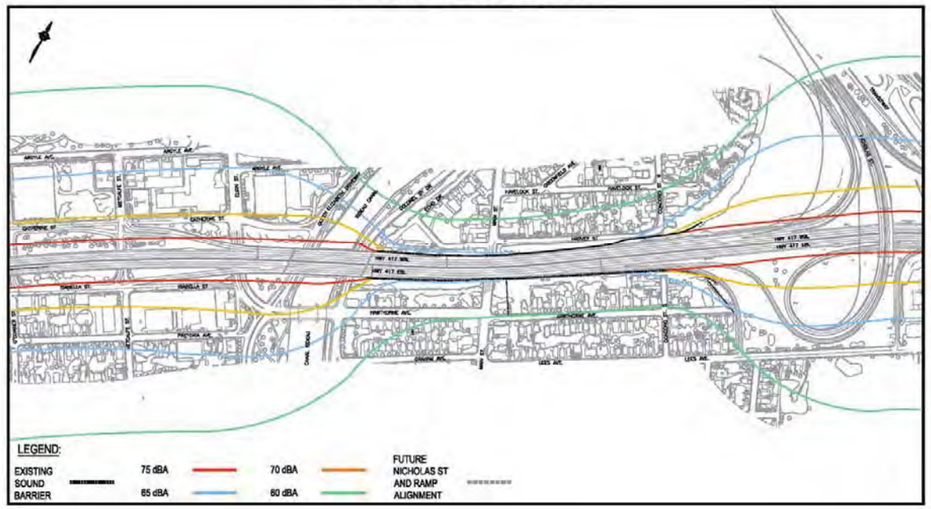
- Project Area 1
- Project Area 2
- Project Area 3
- Project Area 4
- Archaeological Potential
- No Archaeological Potential: Extensively and Significantly Disturbed from Highway 417 Construction

The Central Archaeology Group Inc. 2401 5th Line East T. 705.201.1066 Campbellford, ON F. 866.231.6071 K0L 1L0 info@centralarchaeology.ca	BASE: Survey Plan courtesy of MTO	NOTE: This map should be read in conjunction wit the accompanying report from CAGI.	MTO Queensway Project PIF No. P248-0291-2017	May 2017 Drawn by L.M.

Noise

This study will review the existing noise barriers in this area. The existing conditions for acoustics are illustrated below using the projected traffic volumes forecast for 2017. Additional information will be provided at PIC No. 2.

EXISTING SOUND LEVELS



Context Sensitive Design – Approach

The approach and treatment will be similar to the adjacent Queensway Mid-town Bridges study to the west.





The context of the bridge sites will be modelled and designs will be developed to suit this context. These images show a similar approach taken for the adjacent Mid-town Bridges project.

Green space Context around Downtown Bridges for Consideration



Ballantyne Park looking east



Large landscaped embankment areas





NCC Driveways and Recreational Paths
-Cultural Landscapes

Context Sensitive Design – Other Significant CSD Features



Metcalfe Bridge looking north
Victoria Memorial Building
(Museum of Nature) beyond





Ottawa East Residential Context



Historic gas station at Main & Hawthorne
-small office adaptive reuse
-not designated under Part IV of Ontario Heritage Act but community landmark



Ottawa East
Town Hall Community Centre on Main Street
-designated under Part IV of Ontario Heritage Act



Rideau Canal Bridge: View from Pretoria Bridge
Rideau Canal National Historic Site & UNESCO World Heritage Site

Context Sensitive Design – Guiding Principles

- The CSD design will build on previously developed Queensway CSD guidelines
- If the extent of rehabilitation at any given site supports it, CSD elements will be considered for inclusion
- MTO will design a basic landscape treatment for each bridge site
- Design elements and landscaping that exceed the MTO standard proposed as part of this study will be considered in partnership with communities, with permitting conditions established by MTO
- CSD elements/considerations may include:
    - Light – natural and artificial
    - Materials
    - Public Art (in partnership only)
    - Views
    - Facades
    - Noise Barriers
    - Soft landscape
    - Furnishings/equipment (in partnership only)
- General principle is to make each bridge site safer, brighter, more open and green

Existing Bridge Conditions

Metcalfe Street Bridge Overpass

Construction Year	Bridge Type
1962	Rigid Frame

- Leaking expansion joint
- Delaminated and cracked area with edge spalls at the top of retaining wall / abutment interface
- Broken section of retaining wall coping
- Typical service life: 50-60 years



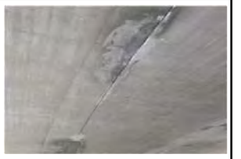


Elgin Street Bridge Overpass

Construction Year	Bridge Type
1962	Rigid Frame

- Leaking longitudinal expansion joint
- Delaminated areas on deck soffit at joints
- Delaminated areas on abutments and retaining walls
- Delamination and broken sections on retaining wall coping
- Typical service life: 50-60 years





Main Street Bridge Overpass

Construction Year	Bridge Type
1962	Rigid Frame

- Leaking longitudinal expansion joint
- Spalled area on deck soffit at the longitudinal expansion joint
- Delaminated and spalled areas at the bottom of abutments
- Delaminated areas on retaining walls
- Typical service life: 50-60 years

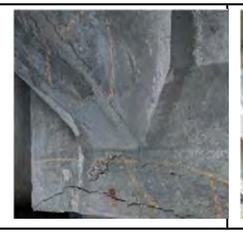




Rideau Canal Bridge Overpass

Construction Year	Bridge Type
1962	Continuous Post-Tensioned Beam

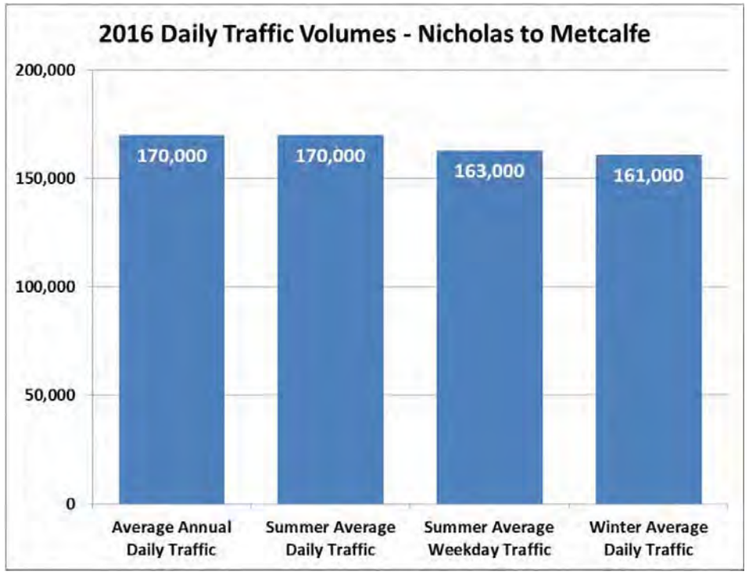
- Girders have delaminations at bearing seats at multiple girders
- Exterior girders and girders along median have delamination, spalling
- Pier repairs starting to deteriorate





Traffic

- The Queensway is a key transportation corridor that serves local, regional and long distance mobility needs
- Two way traffic volumes average approximately 170,000 vehicles/day
- During peak periods (morning and afternoon) commuter travel demands create traffic congestion
- Rehabilitation or conventional replacement of the 7 structures will require select lane and ramp closures which will affect mobility over an entire construction season (8 months)
- This assignment will examine opportunities to mitigate the traffic impacts by completing much of the construction when hourly traffic volumes are lower (at night or weekends)
- The evaluation of alternatives will include factors which consider traffic operational impacts.



Alternatives to the Undertaking – Planning Alternatives

Alternatives to the Undertaking represent alternative ways or methods of addressing the Problem / Opportunity Statement specific to this study. Considering Alternatives to the Undertaking is a mandated task under the MTO Class EA. In this study, the focus is on four bridge locations. These alternatives reflect different strategies and include the “Do Nothing” approach (maintaining the status quo but not addressing the Problem / Opportunity Statement).

X **Alternative 1**: The “Do Nothing” Alternative maintains the status quo of the existing bridges with no significant actions taken to manage aging infrastructure. This approach would accept further deterioration within the 20 year planning horizon. **This alternative is NOT recommended to be carried forward.**

Alternative 2: In accordance with the MTO Class EA, this alternative would be new and/or improved (rehabilitated) Provincial Transportation Facilities. Since the bridge sites already exist, the alternative could be simply referred to as “Management of Bridge Infrastructure”.

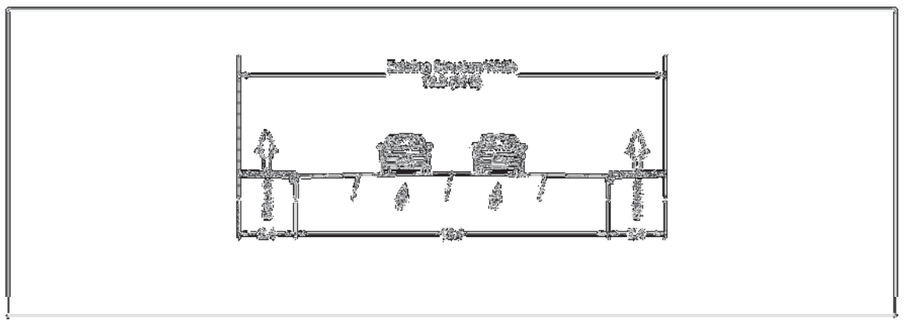
✓ **Alternative 2a**: Rehabilitate the existing bridges to extend their service lives including structural upgrades to meet existing seismic code requirements. **This alternative is recommended to be carried forward.**

✓ **Alternative 2b**: Replace the existing bridges with new structure(s). **This alternative is recommended to be carried forward.**

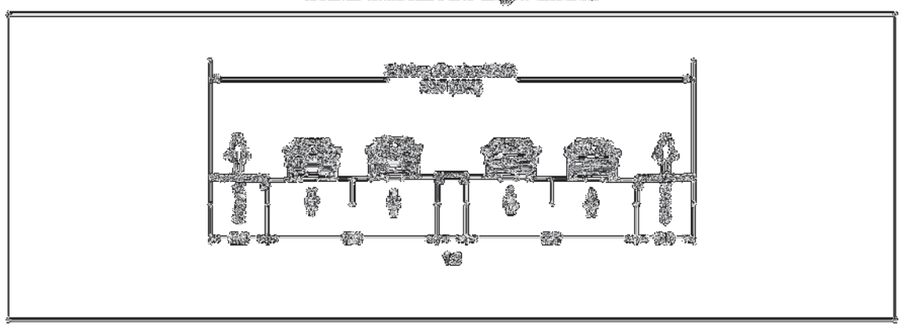
The Assessment of Alternatives to the Undertaking Report is available on the Resource Table.

EXISTING SUPERSTRUCTURE CROSS SECTIONS

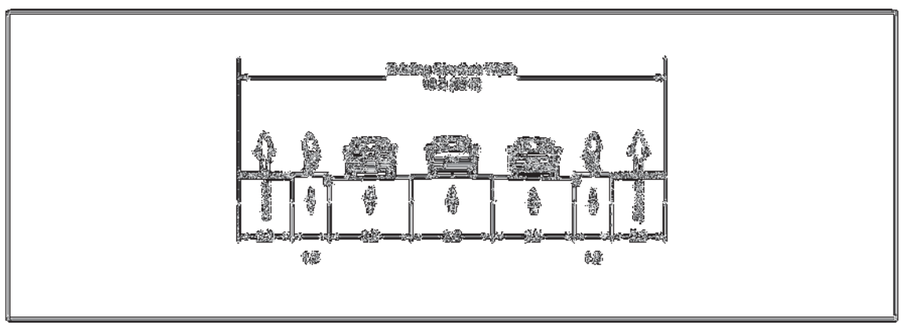
Cross Section on Metcalfe Street



Cross Section on Elgin Street



Cross Section on Main Street



Preliminary Design Alternatives
Rigid Frame Bridge Sites

Preliminary Design Alternatives to the Undertaking carried forward for the rigid frame bridge sites (Metcalfe Street, Elgin Street and Main Street) include rehabilitation or replacement of the bridges as bridge management strategies.

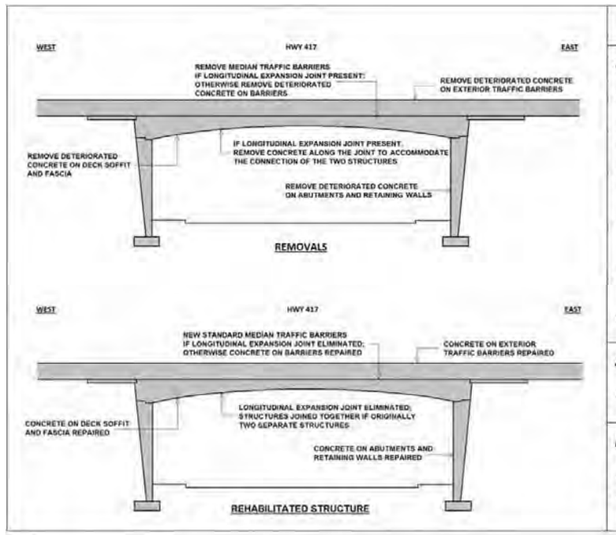
Bridge Preliminary Design Alternatives being considered include:

- **Alternative A-A1** – Rapid Rehabilitation
- **Alternative A-A2** – Conventional Rehabilitation
- **Alternative B-B1** – Conventional Replacement
- **Alternative B-C1** – Rapid Replacement

Staging Area Site Alternatives are being considered for Rapid Replacement. Alternatives and are presented on the following exhibits.

Traffic Management Alternatives are being considered for the conventional (construction in place) and rapid replacement (Queensway closure) alternatives are presented on the following exhibits.

Preliminary Design Alternatives
Rigid Frame Bridge Sites – Rapid Rehabilitation



RAPID REHABILITATION

Scope of work:

- Divert traffic on Hwy 417 and prepare site as per the construction staging.
- Remove median traffic barriers on Elgin St and Main St overpasses.
- Remove and repair deteriorated concrete on exterior traffic barriers and Metcalfe St overpass median traffic barrier, as needed.
- For Elgin St and Main St overpasses remove concrete from the soffit along the joint to accommodate the connection of the structures.
- Remove and repair deteriorated concrete on deck soffit and fascia, abutments and retaining walls.
- Construct new standard median traffic barrier if required.

Advantages:

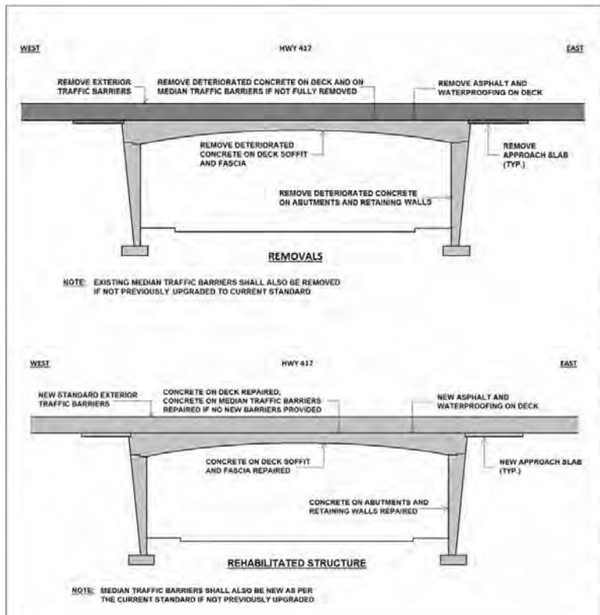
- Traffic disruption to the local roads is kept to the minimum.

Disadvantages:

- One-lane closures on Hwy 417 may be required.
- Major rehabilitation may be needed in approximately 10 years.

For Traffic Staging Alternative A-A1: Rapid Rehabilitation, see separate exhibits for Metcalfe Street, Elgin Street and Main Street.

Preliminary Design Alternatives
Rigid Frame Bridge Sites – Conventional Rehabilitation



CONVENTIONAL REHABILITATION

Scope of work:

- Divert traffic on Hwy 417 and prepare site as per the construction staging.
- Remove asphalt and waterproofing on deck.
- Remove approach slab.
- Remove the exterior traffic barriers on Metcalfe St and Main St overpasses, and the median traffic barrier on Metcalfe St overpass.
- Remove and repair deteriorated concrete on deck, exterior traffic barriers on Elgin St overpass, and median traffic barrier on Elgin St and Main St overpasses.
- Remove and repair deteriorated concrete on deck soffit and fascia, abutments and retaining walls.
- Construct new approach slab.
- Construct new exterior traffic barriers on Metcalfe St and Main St overpasses, and new median traffic barrier on Metcalfe St overpass.
- Waterproof and repave deck.

Advantages:

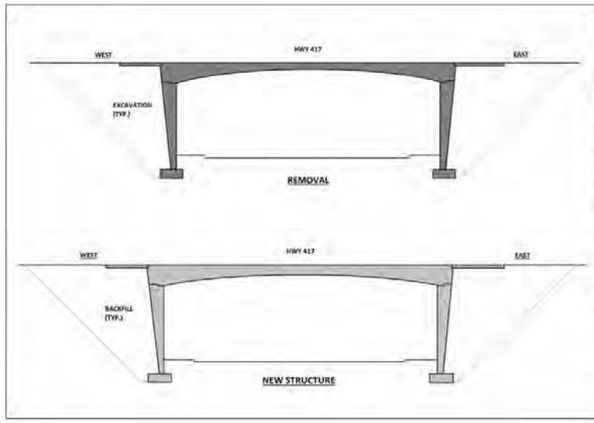
- Increases the service life of the structure by approximately 30 years.

Disadvantages:

- No modification to the bridge clearance or span can be made.
- Approximately one construction season would be required to complete the works.
- Traffic disruption is caused to Hwy 417 and local roads.

For Traffic Staging Alternative A-A2: Conventional Rehabilitation, see separate exhibits for Metcalfe Street, Elgin Street and Main Street.

Preliminary Design Alternatives
Rigid Frame Bridge Sites – Conventional Replacement



CONVENTIONAL REPLACEMENT

Scope of work:

- Install protection system, divert traffic on Hwy 417 and prepare site as per the construction staging.
- Excavate and remove the existing structure.
- Construct new footings and the new rigid frame structure using a conventional method.

Advantages:

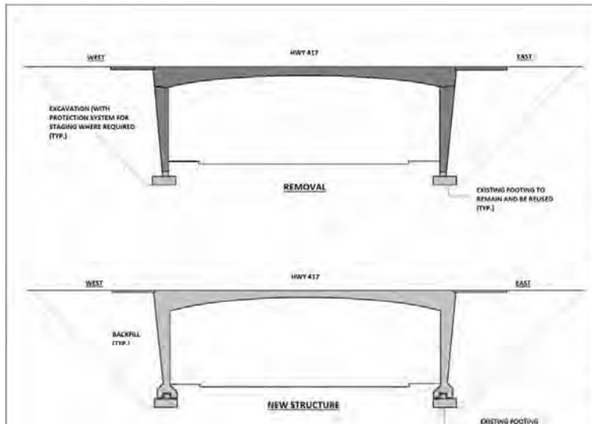
- The width of the city street is maintained or adjusted as required.
- A completely new structure is provided with 75 years service life.

Disadvantages:

- The construction time is longer. Possibly one-and-a-half construction seasons.
- It causes traffic disruption to both Hwy 417 and the local roads.

For Traffic Staging Alternative B-B1 : Conventional Replacement, see separate exhibits for Metcalfe Street, Elgin Street and Main Street.

Preliminary Design Alternatives
Rigid Frame Bridge Sites – Rapid Replacement



RAPID REPLACEMENT

Scope of work:

- Construct new rigid frame structure in a staging area.
- Install temporary support and prepare existing structure for removal.
- Install protection system, excavate and saw cut abutments above the footing to suit the connection to new structure.
- Remove existing structure.
- Prepare the remaining footings and part of abutments to receive the new structure.
- Install new structure(s) using a self-propelled modular transporter (SPMT).

Advantages:

- Minimal traffic disruption is anticipated.
- No traffic staging is required.
- A new structure, except for the footings, is provided.
- Existing footings are reused and excavation is minimized.

Disadvantages:

- The service life of the replacement structure could be affected by the remaining service life of the existing foundations.
- Staging area(s) required near the bridge site.
- Risk of late opening and full closure of Hwy 417 needs to be considered.
- The inherent cost of the Rapid Replacement Technology is additional.

For Traffic Staging Alternative B-C1: Rapid Replacement, see separate exhibits for Metcalfe Street, Elgin Street and Main Street.

Potential Staging Sites for Rigid Frame Structures – Main Street

Location	RBR Potential
M-1 Adjacent to Hawthorne Avenue just 10m west of Main Street (Ballantyne City Park / municipal park area)	• Good → Access can be direct onto Main Street with no impact on nearby residences → Work area is acceptable → Grades to site good
M-2 Graham Street (Adult Education Building)	• Poor → Does not meet area and dimension requirements → Relatively long travel route from staging area to bridge structure compared to site M-1 → Overhead utility relocations required both sides of Main Street
M-3 (use of Immaculata High School Parking area)	• Poor → Does not meet area or dimension requirements → Main Street is too narrow to transport structure → To improve the profile from this site to Main Street major excavation would be required. → Impacts to overhead utilities along west/east sides of Main Street
M-4 MTO lands east side of Main Street , immediately south of the Queensway	• Poor → Does not meet minimum span dimension needs → Construction vehicles would have difficulty to access 2 structures that would have to be built back to back.
M-5 MTO ROW immediately north of the Queensway, east side of Main Street	• Poor → Size/dimensions of ROW site do not meet requirements → Impact on nearby residences → loss of on street parking
M-6 Residential properties located north of Queensway west side of Main Street	• Poor → Major residential impact (up to 6 residential buyouts) → Grade requirements satisfied
M-7 Immaculata High School football field	• Poor → Main Street has insufficient width transportation of new structures not possible. → Loss of community use of the football field /community impacts

The Rigid Frame Staging Sites Assessment Memo is available on the Resource Table

Potential Staging Sites for Rigid Frame Structures – Elgin and Metcalfe Streets

Location	RBR Potential
E-1 Adjacent to Elgin Street, north of the Queensway just to the east of the Elgin Street Bridge site.	• Good → Site can have direct access to Elgin Street and Catherine Street → Work area is acceptable → Short travel route → No impact on detour route while Queensway is closed → Grades to site good
E-1e (expanded to include Catherine Street)	• Good → Provides better access to the Canal structure for larger cranes and moving equipment
E-2 Adjacent to Elgin Street west side of Elgin Street	• Poor (for full structure) → Does not meet area and dimension requirements for a full structure replacement site → Short travel route from staging area to bridge structure → Overhead utility relocations required → No impacts on detour route
E-3 Adjacent to Metcalfe Street , immediately west of Metcalfe Street	• Good → Direct access for Metcalfe Street Structure → Can accommodate Elgin Street Structure if E-1 not available due to timing constraints → No community impacts
E-4 MTO lands east side of Metcalfe Street, north of Queensway; adjacent to the Catherine Street exit ramp from the Queensway.	• Poor → Does not meet minimum span dimension needs → Construction vehicles would have access from the off-ramp from the Queensway introducing collision potential

The Rigid Frame Staging Sites Assessment Memo is available on the Resource Table

POTENTIAL STAGING SITES - RIGID FRAME



POTENTIAL STAGING SITES FOR THE METCALFE STREET AND ELGIN STREET BRIDGES

Legend

Potential Staging Site Area

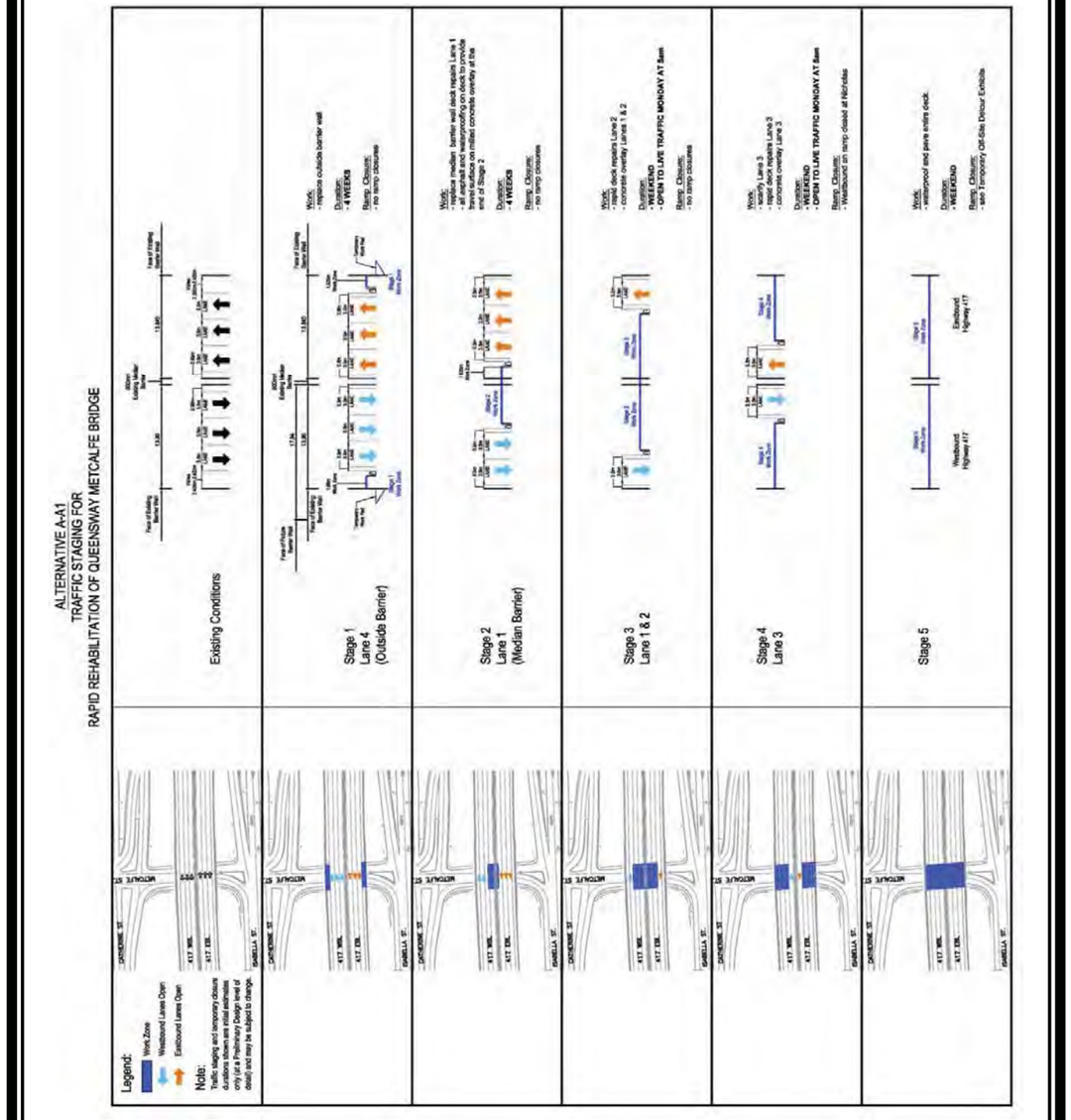
Preliminary Recommendation to Carry Forward

Note

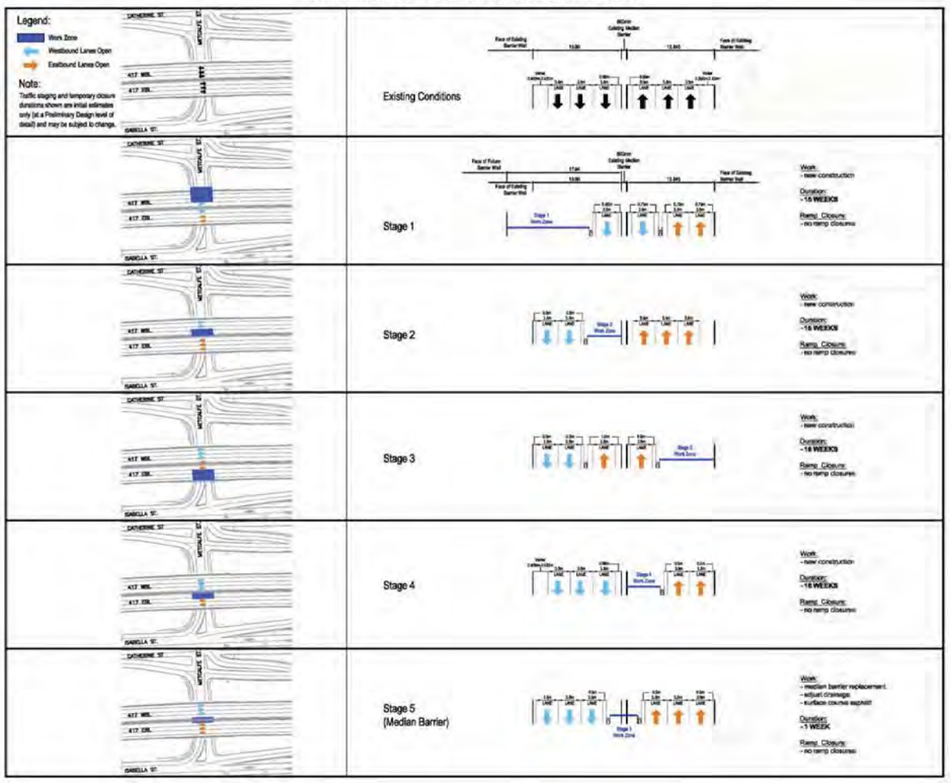
See Memorandum on resource table. Preliminary Review of Staging Area Sites for Rapid Bridge Replacement Options for Metcalfe Street, Elgin Street and Main Street Bridges.



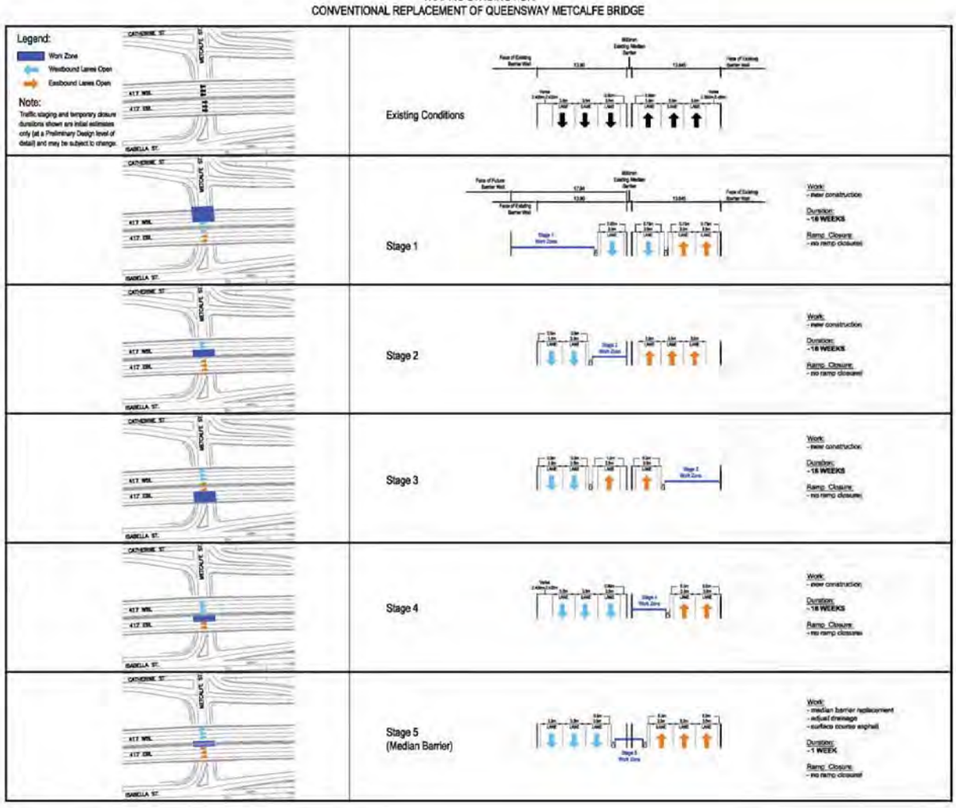
POTENTIAL STAGING SITES FOR MAIN STREET BRIDGE



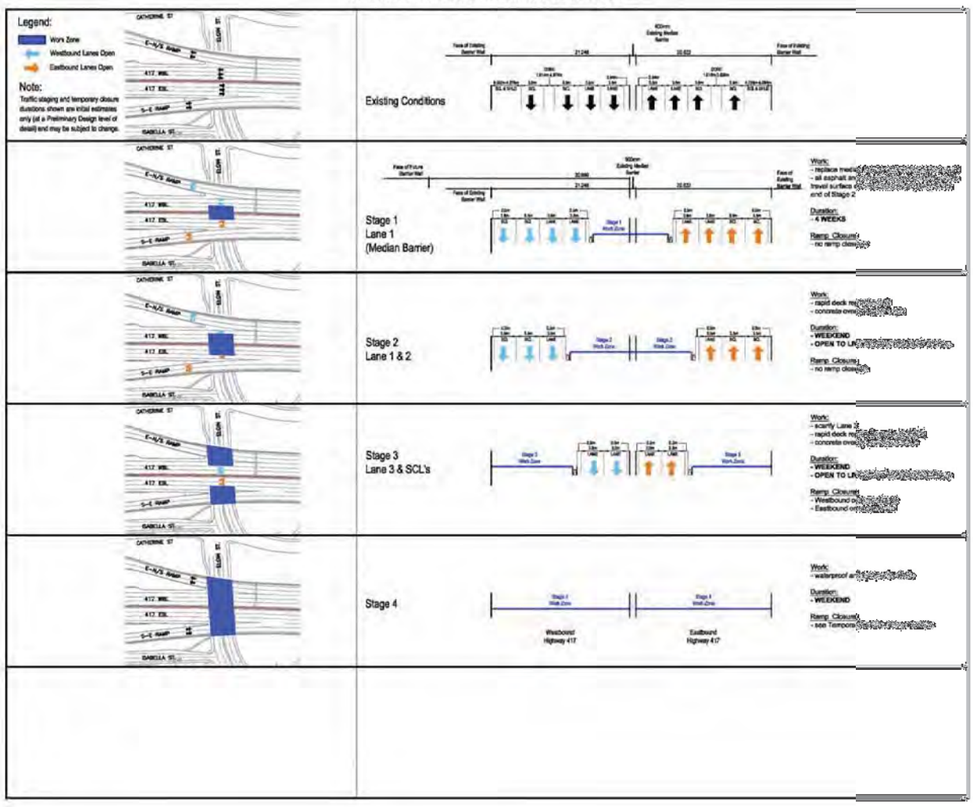
ALTERNATIVE B-B1
TRAFFIC STAGING FOR
CONVENTIONAL REPLACEMENT OF QUEENSWAY METCALFE BRIDGE



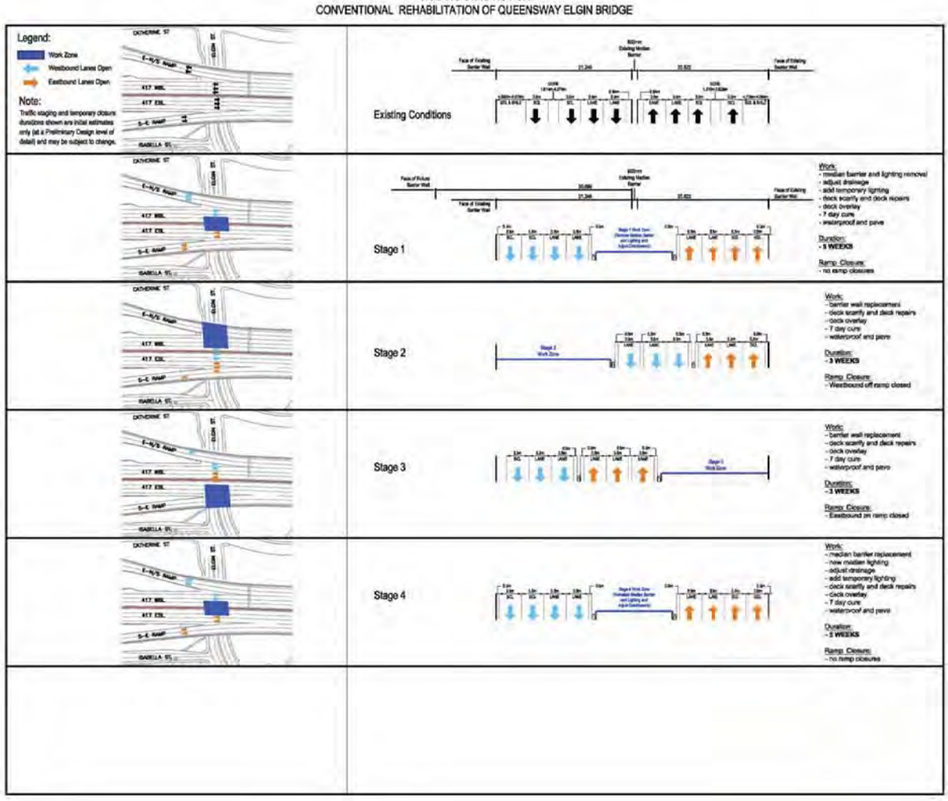
ALTERNATIVE B-B1
TRAFFIC STAGING FOR
CONVENTIONAL REPLACEMENT OF QUEENSWAY METCALFE BRIDGE



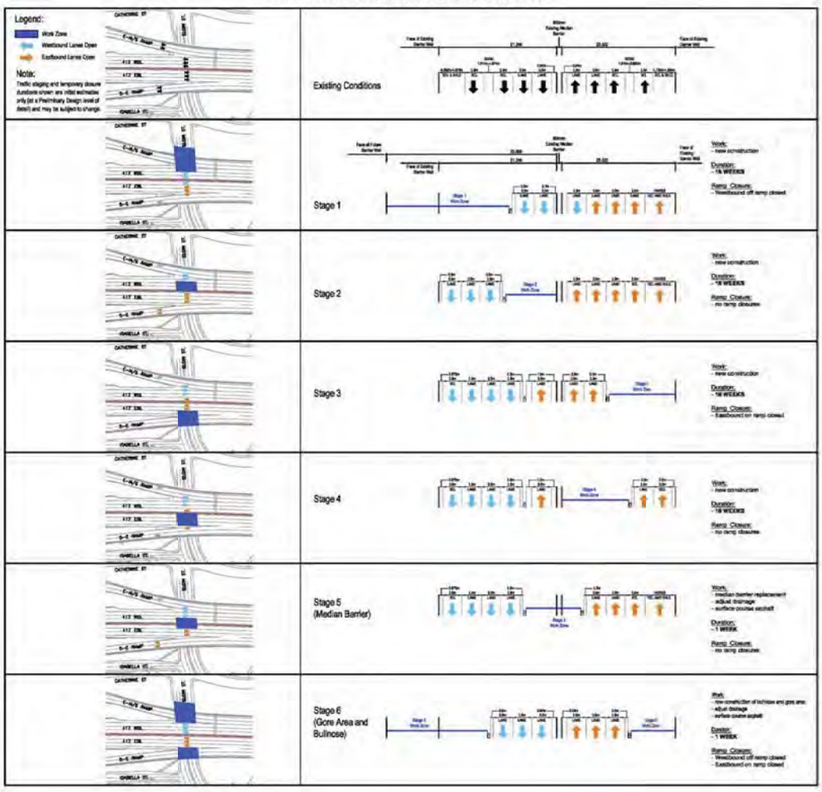
ALTERNATIVE A-A1
TRAFFIC STAGING FOR
RAPID REHABILITATION OF QUEENSWAY ELGIN BRIDGE



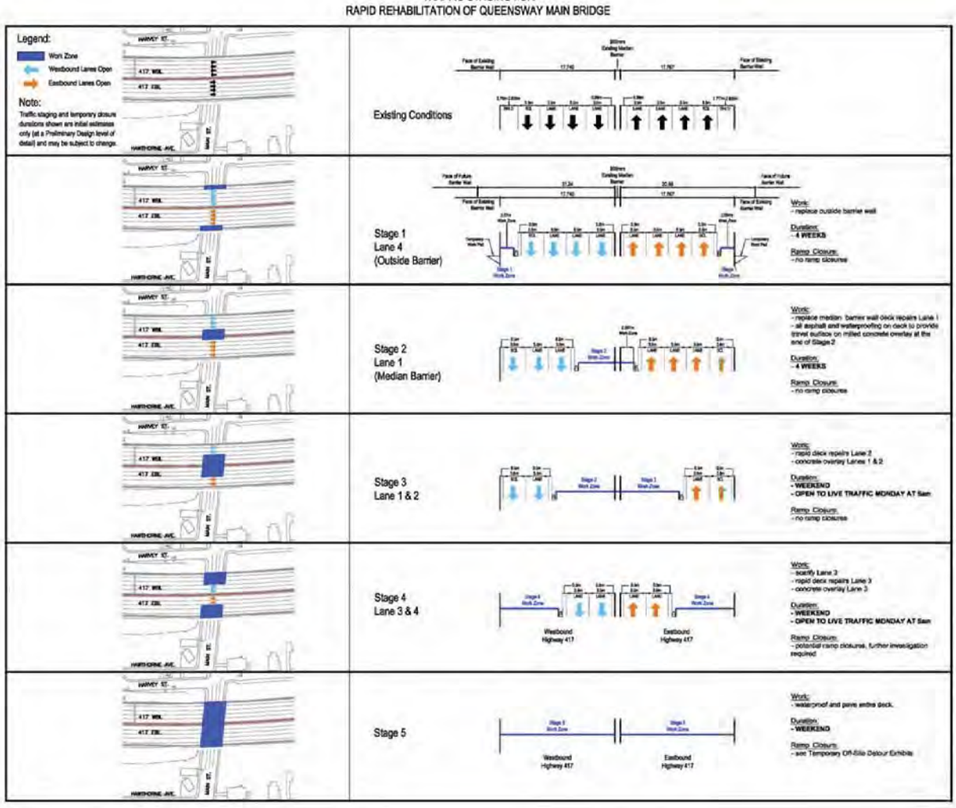
ALTERNATIVE A-A2
TRAFFIC STAGING FOR
CONVENTIONAL REHABILITATION OF QUEENSWAY ELGIN BRIDGE



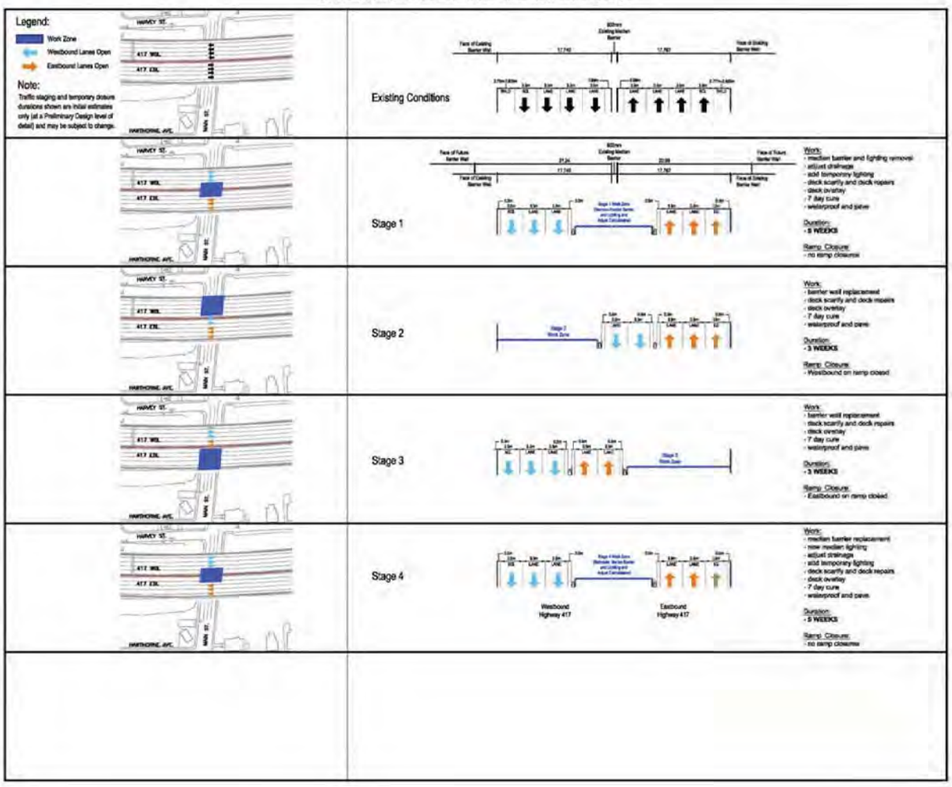
ALTERNATIVE B-B1
TRAFFIC STAGING FOR
CONVENTIONAL REPLACEMENT OF QUEENSWAY ELGIN BRIDGE



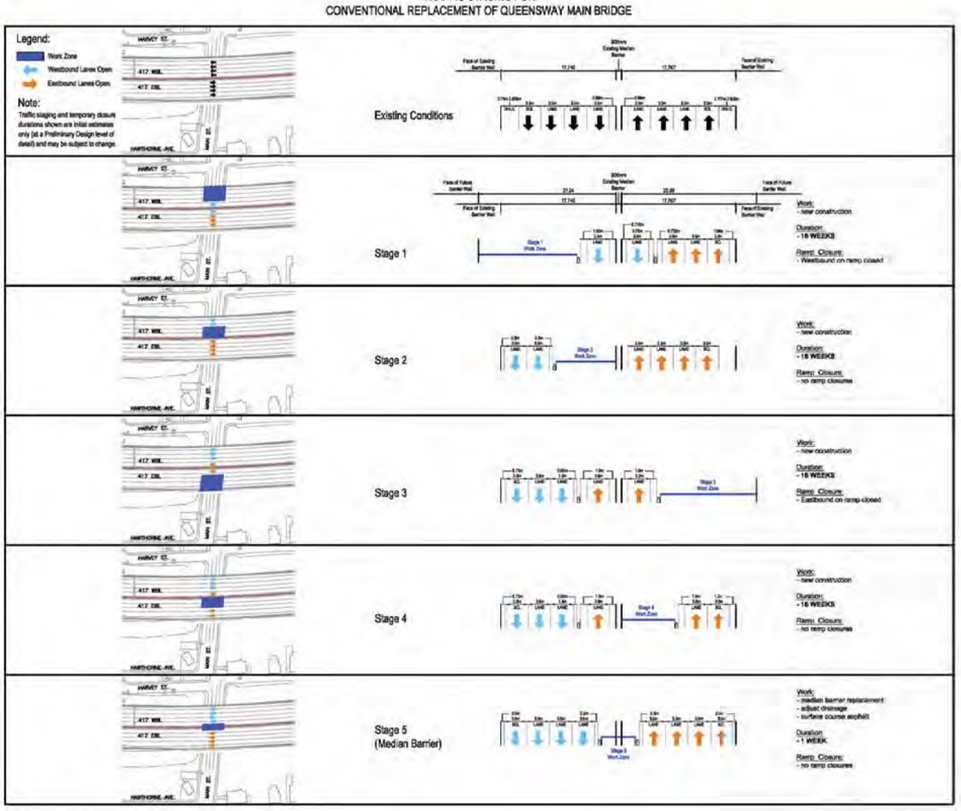
ALTERNATIVE A-A1
TRAFFIC STAGING FOR
RAPID REHABILITATION OF QUEENSWAY MAIN BRIDGE



ALTERNATIVE A-A2
TRAFFIC STAGING FOR
CONVENTIONAL REHABILITATION OF QUEENSWAY MAIN BRIDGE

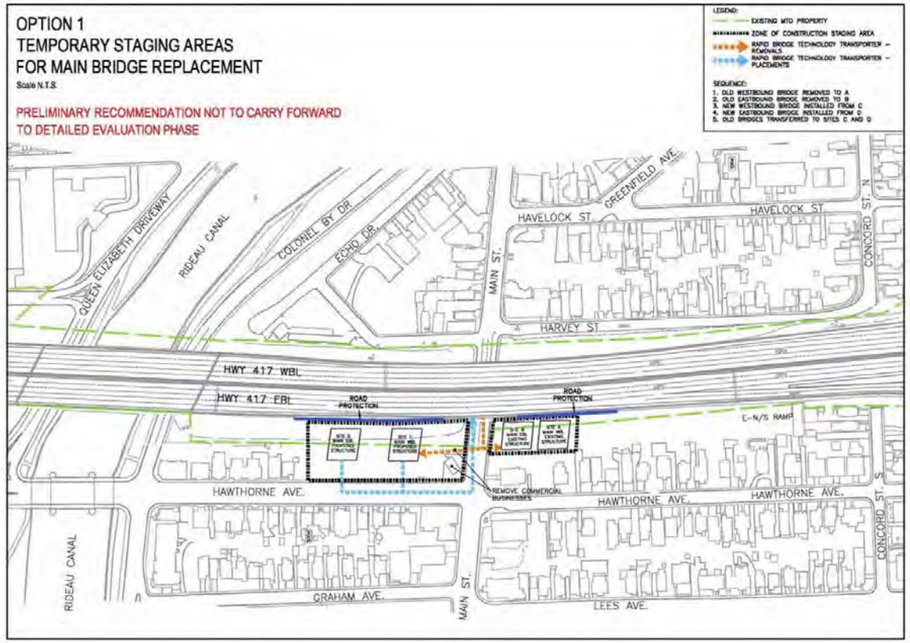


ALTERNATIVE B-B1
TRAFFIC STAGING FOR
CONVENTIONAL REPLACEMENT OF QUEENSWAY MAIN BRIDGE



OPTION 1
TEMPORARY STAGING AREAS
FOR MAIN BRIDGE REPLACEMENT
Scale N.T.S.

PRELIMINARY RECOMMENDATION NOT TO CARRY FORWARD
TO DETAILED EVALUATION PHASE

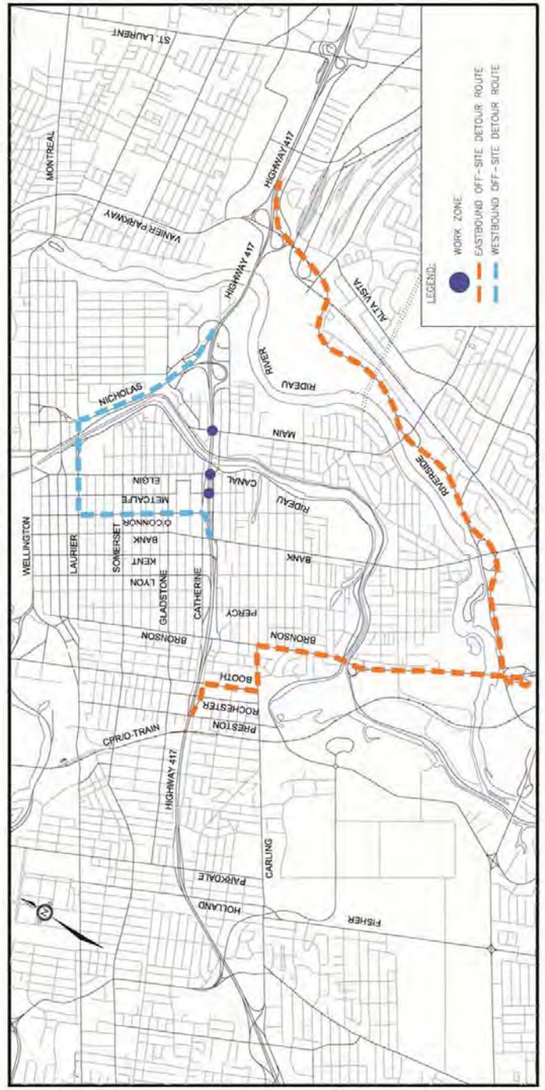


OPTION 2
TEMPORARY STAGING AREAS
FOR MAIN BRIDGE REPLACEMENT
Scale N.T.S.

PRELIMINARY RECOMMENDATION TO CARRY FORWARD
TO DETAILED EVALUATION PHASE



OFF-SITE DETOUR
RAPID REPLACEMENT OF QUEENSWAY
METCALFE, ELGIN, MAIN BRIDGES



Preliminary Design Alternatives
Rideau Canal Bridge

Preliminary Design Alternatives to the Undertaking carried forward for the Rideau Canal Bridge include rehabilitation or replacement of the bridge as bridge management strategies.

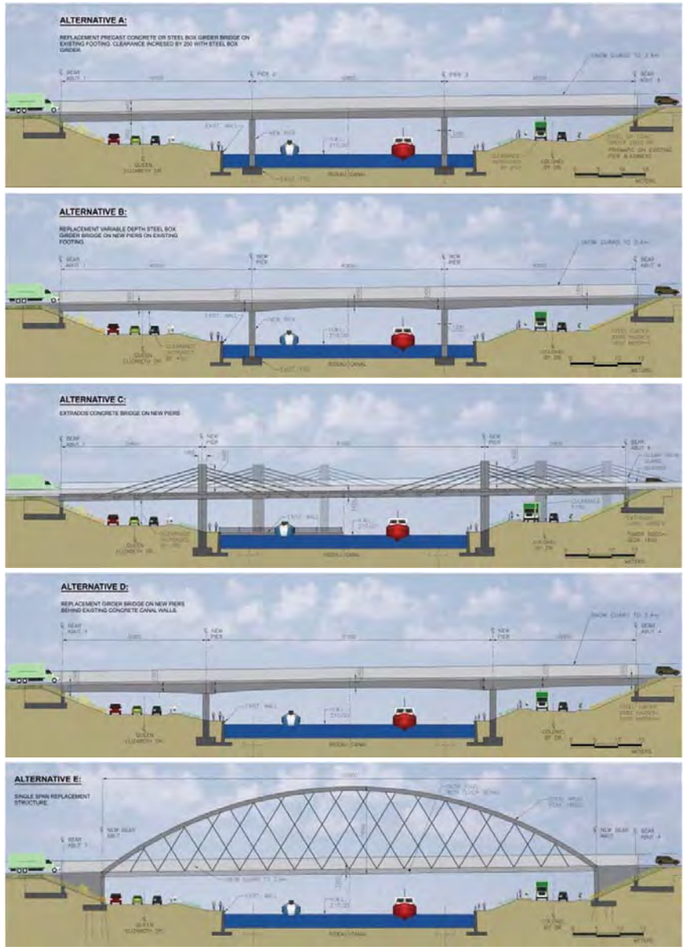
Bridge Preliminary Design Alternatives being considered include:

- **Alternative A** – Replacement – Girder Bridge at Existing Pier Location
- **Alternative B** – Replacement – Girder Bridge at Existing Pier Location
- **Alternative C** – Replacement – Extrados Concrete Bridge at New Pier Location
- **Alternative D** – Replacement – Girder Bridge at New Pier Location behind Existing Canal Walls
- **Alternative E** – Replacement – Single Span Structure
- **Alternative F** – Rehabilitation – Conventional

Construction Staging Alternatives for Bridge Replacement are presented on the following exhibits.

Traffic Management Alternatives are being considered for the conventional (construction in place) and rapid replacement (Queensway closure) alternatives and are presented on the following exhibits.

Rideau Canal Bridge Alternative Renderings

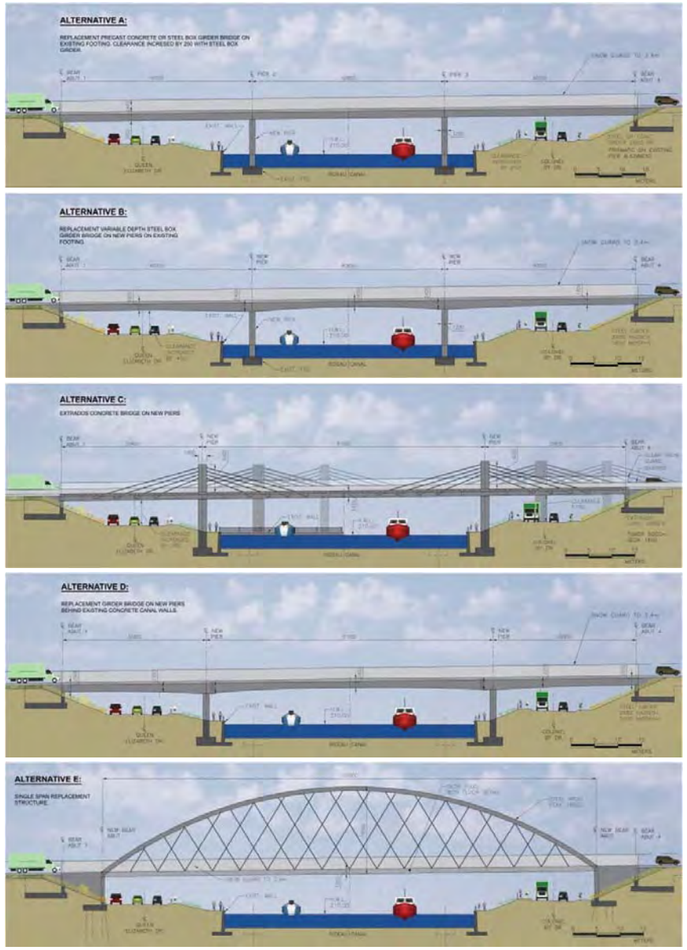


Alternatives Not Carried Forward: Alternative C and Alternative E

- Reduced flexibility for MTO
- High superstructure impacts heritage canal (reduces visual focus on canal)
- Hour-glassing Queensway median results in lower safety (curves on freeway), higher cost ($50 million), and triggers replacements of 6 adjacent bridges.

The Rideau Canal Bridge Alternatives Coarse Screening Memo is available on the Resource Table.

Rideau Canal Bridge Alternative Renderings



Alternatives Not Carried Forward: Alternative C and Alternative E

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- Hour-glassing Queensway median results in lower safety (curves on freeway), higher cost ($50 million), and triggers replacements of 6 adjacent bridges.

The Rideau Canal Bridge Alternatives Coarse Screening Memo is available on the Resource Table.

Rideau Canal Bridge Construction Alternatives

X **Canal Alternative 1:** Remote Staging Area using barges for removal and delivery of new superstructure. Conventional strip construction. Not carried forward based on canal constraints.

X **Canal Alternative 2A:** Conventional Construction in Strips.

✓ **Canal Alternative 2B:** Conventional Construction in Strips allowing wheel tracking on the joint between bridges. Recommended to be carried forward.

✓ **Canal Alternative 2C:** Conventional Construction in Strips. Recommended to be carried forward.

X **Canal Alternative 3A:** Rapid Replacement for complete superstructure replacement using Self Propelled Modular Transporters (SPMTs) from bridge farm sites used for Rigid Frames. Not recommended to be carried forward (substantial impacts to existing properties and traffic).

X **Canal Alternative 3B:** Rapid Replacement using three separate sections for each structure using SMPTs from bridge farm sites used for Rigid Frames. Not recommended to be carried forward (substantial impacts to existing properties and traffic).

X **Canal Alternative 3C:** Rapid Replacement using three separate sections for each structure using SMPTs from Ballantyne Park and bridge farm sites used for Rigid Frames. Not recommended to be carried forward (substantial impacts to existing properties and traffic).

X **Canal Alternative 3D:** Rapid Replacement using three separate sections for each structure using SMPTs from Ballantyne Park and bridge farm sites used for Rigid Frames. Not recommended to be carried forward (substantial impacts to existing properties and traffic).

✓ **Canal Alternative 4:** Demolish in place and jack and slide from sides (2 bridges replaced on same weekend).

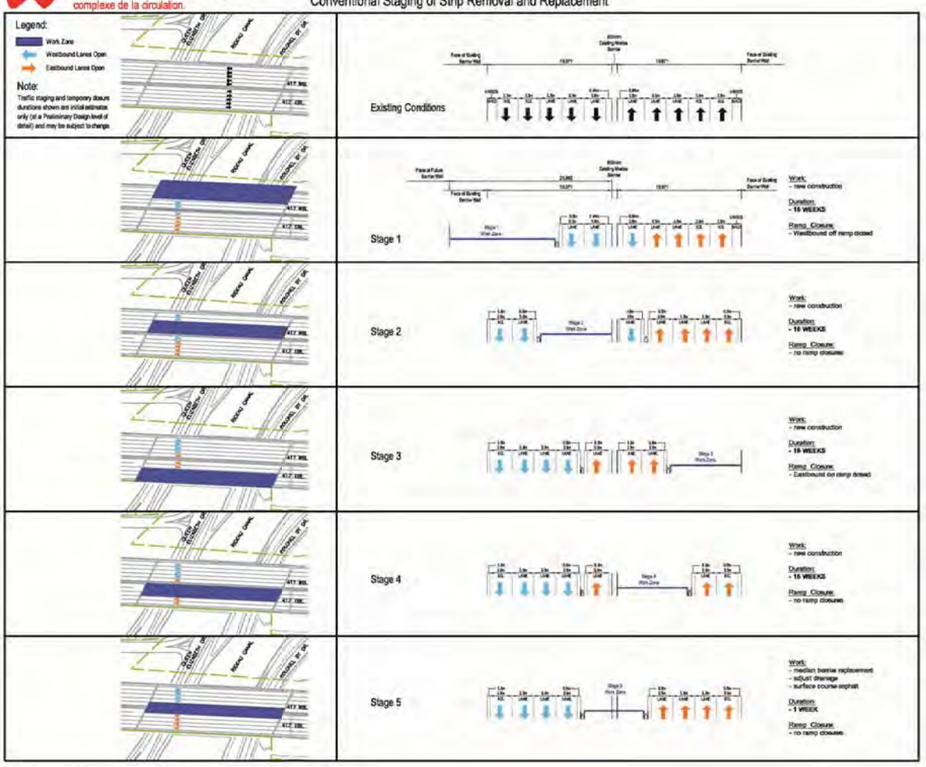
✓ **Canal Alternative 5:** Sequential jack and slide removing one bridge at a time (2 bridges replaced in two separate years).

✓ **Canal Alternative 6:** SPMT transport to Nicholas. Innovative technique to build platform under structure to lift the SPMT and each of the 3 spans sequentially to the elevation of the Queensway. The SPMT drives the bridge sections to Nicholas and returns with new sections. Requires support piers in canal.

The Rideau Canal Construction Methodology Alternatives Coarse Screening Memo is available on the Resource Table

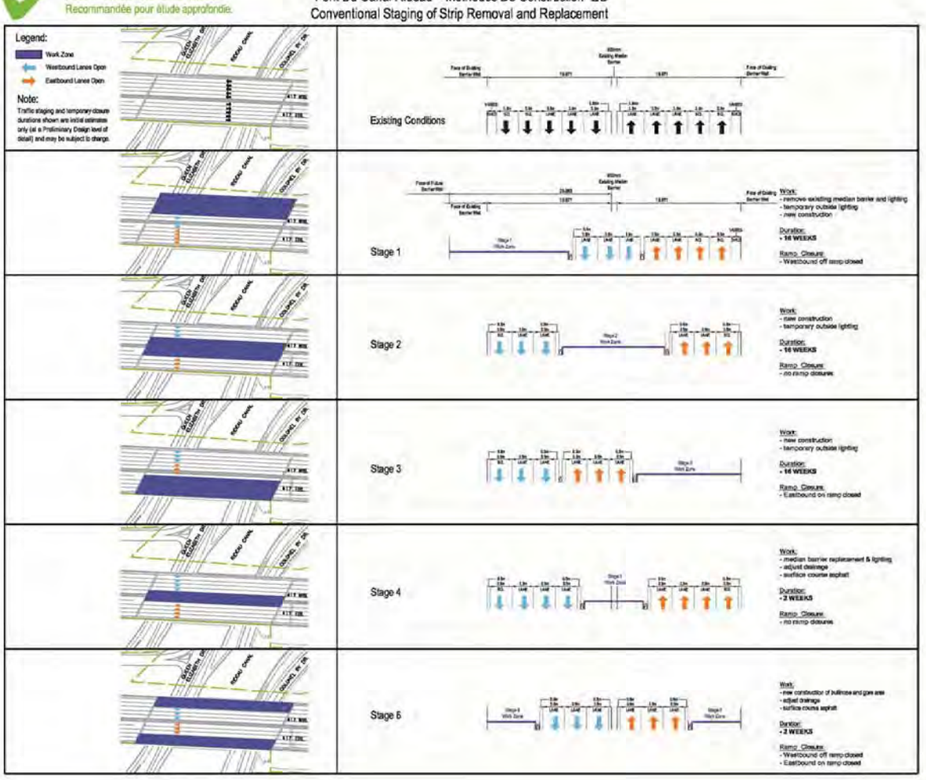
Not recommended to be carried forward due to battleship configuration.
Non recommandée en raison de la gestion complexe de la circulation.

Rideau Canal Bridge Construction Alternative 2A
Pont Du Canal Rideau – Méthodes De Construction 2A
Conventional Staging of Strip Removal and Replacement



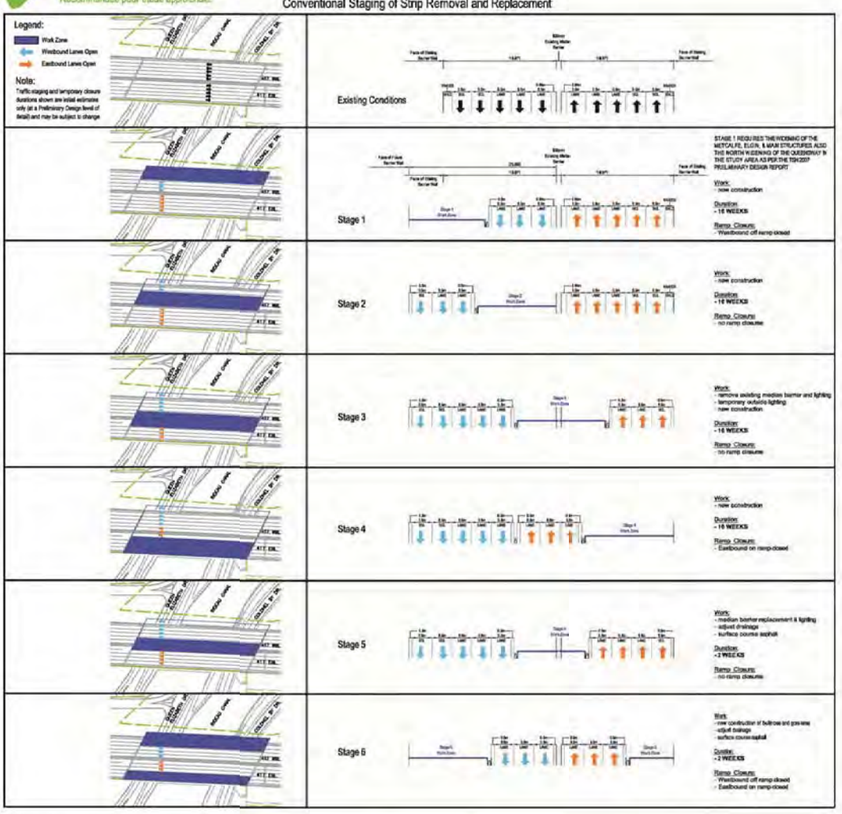
Recommended to be carried forward.
Recommandée pour étude approfondie.

Rideau Canal Bridge Construction Alternative 2B
Pont Du Canal Rideau – Méthodes De Construction 2B
Conventional Staging of Strip Removal and Replacement

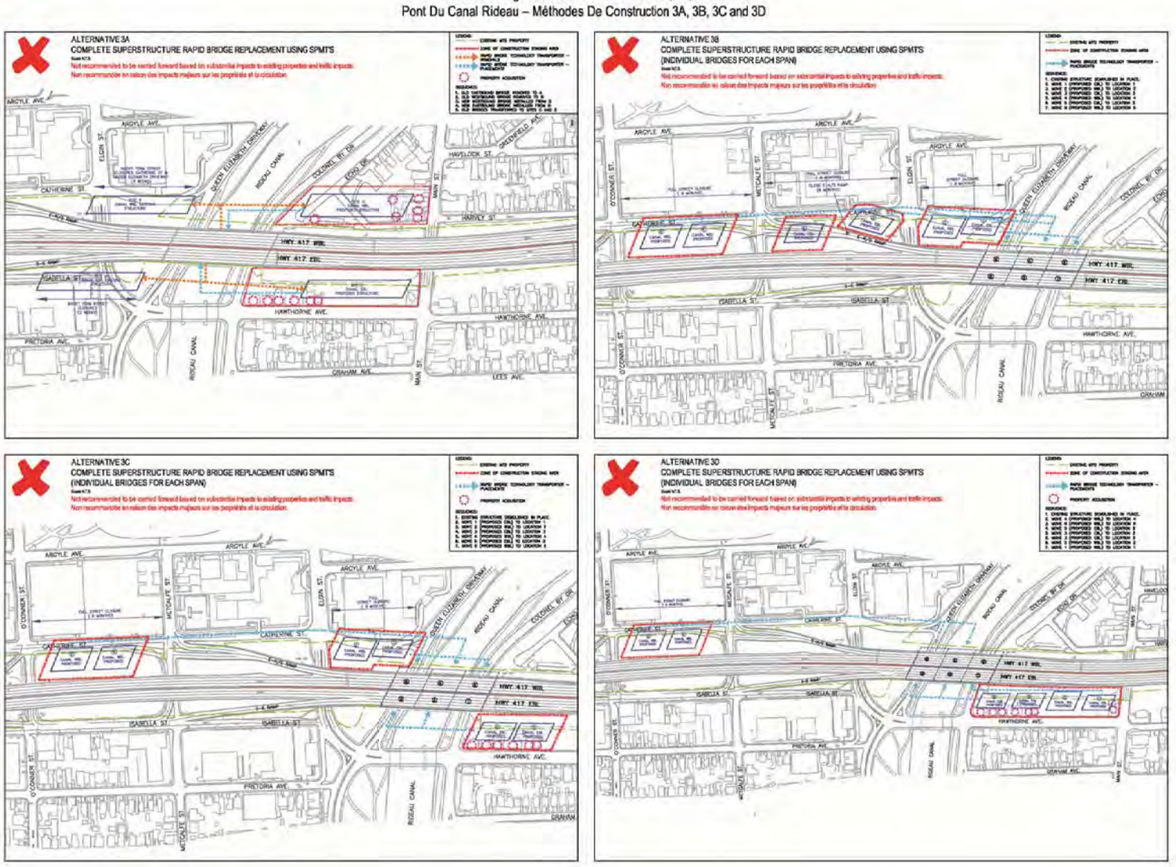


Recommended to be carried forward.
Recommandée pour l'étude approfondie.

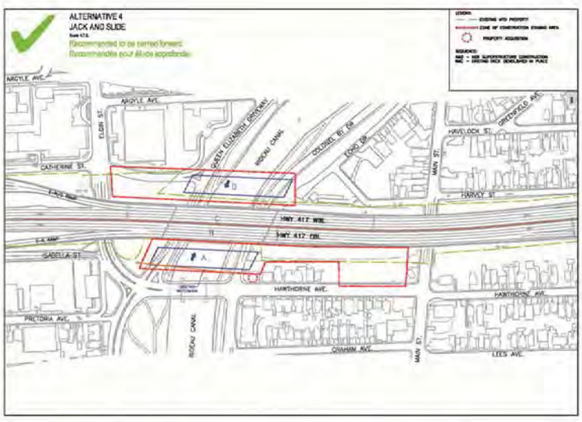
Rideau Canal Bridge Construction Alternative 2C
Pont Du Canal Rideau – Méthodes De Construction 2C
Conventional Staging of Strip Removal and Replacement

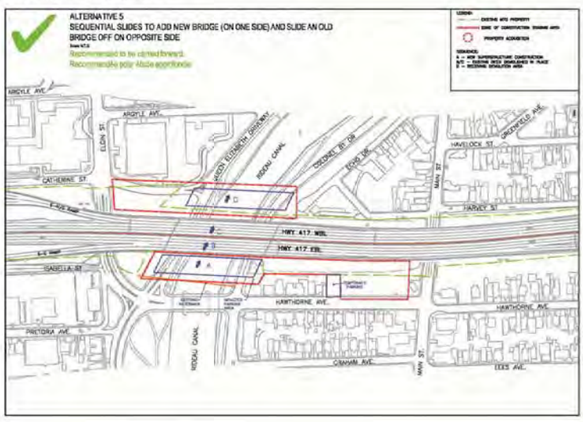


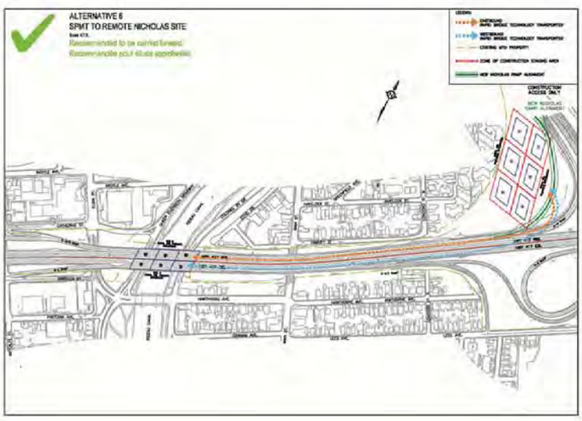
Rideau Canal Bridge Construction Alternative 3A, 3B, 3C and 3D
Pont Du Canal Rideau – Méthodes De Construction 3A, 3B, 3C and 3D



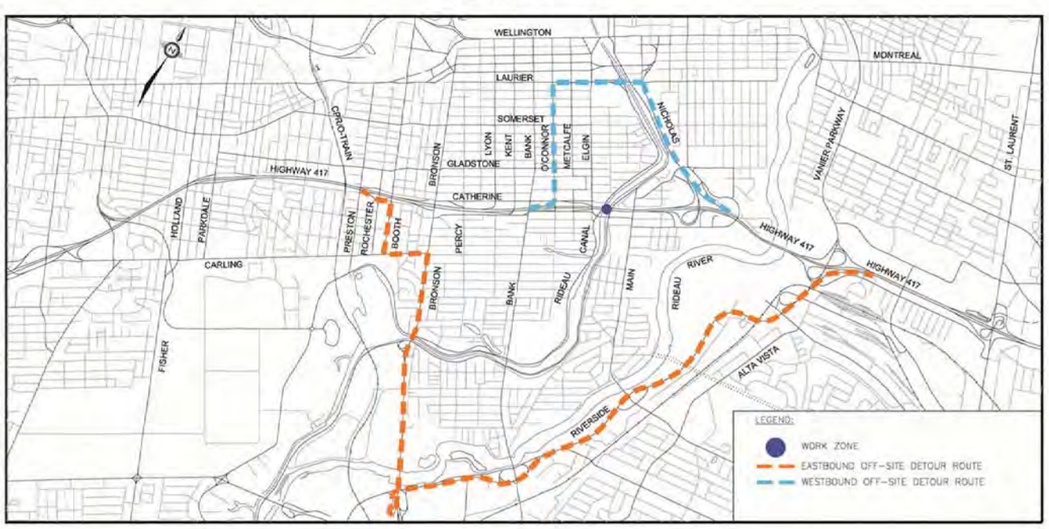
Rideau Canal Bridge Construction Alternative 4, 5, and 6
Pont Du Canal Rideau – Méthodes De Construction 4, 5, and 6







OFF-SITE DETOUR
RAPID REPLACEMENT OF QUEENSWAY
RIDEAU CANAL BRIDGE



Evaluation of Alternatives

The following groups of alternatives will be compared and presented at PIC No. 2:

Rigid Frame Bridge Alternatives:

- ✓ Rapid Rehabilitation
- ✓ Conventional Rehabilitation
- ✓ Rapid Replacement
- ✓ Conventional Replacement

Rideau Canal Bridge Alternatives:

- ✓ Alternative A: Replacement Girder Bridge on Existing Pier Location
- ✓ Alternative B: Replacement Girder Bridge on New Pier Location
- X Alternative C: Replacement Extrados Concrete Bridge on New Pier Location
- ✓ Alternative D: Replacement Girder Bridge on New Pier Location
- X Alternative E: Replacement: Single Span Structure
- ✓ Alternative F: Rehabilitation: Conventional (carried forward as baseline)

Rideau Canal Construction Staging Alternatives:

- X Canal Alternative 1: Barge Removal
- X Canal Alternative 2A: Conventional Construction in Strips
- ✓ Canal Alternative 2B: Conventional Construction in Strips
- ✓ Canal Alternative 2C: Conventional Construction in Strips
- X Canal Alternative 3A: SPMT Rapid Replacement (Complete Structure)
- X Canal Alternative 3B: SPMT Rapid Replacement (Separate Structures)
- X Canal Alternative 3C: SPMT Rapid Replacement (Separate Structures)
- X Canal Alternative 3D: SPMT Rapid Replacement (Separate Structures)
- ✓ Canal Alternative 4: Jack and Slide on One Weekend
- ✓ Canal Alternative 5: Jack and Slide in Two Separate Years
- ✓ Canal Alternative 6: SPMT Transport to Nicholas

Preliminary Evaluation Criteria

The following evaluation criteria may be used in the evaluation of the Preliminary Design Alternatives presented on the previous exhibits.

Transportation

- Traffic operations (delays to the travelling public)
- Collision potential
- Out-of-way travel (transit, pedestrians, cyclists and general traffic)
- Construction duration

Natural Environment

- Loss of vegetation
- Aquatic disturbance

Socio-Economic Environment

- Emergency Services
- Temporary business impacts (loss of parking)
- Permanent business buyouts
- Noise and air quality
- Tourism/events
- Contaminated property

Cultural Environment

- Impact to UNESCO world heritage site of the Rideau Canal
- Heritage views and cultural landscapes
- Heritage resources
- Archaeological potential

Property and Land Use

- Impacted properties

Cost

- Capital cost
- Operation and maintenance cost

Schedule – Next Steps

Following this meeting we will:

- Review all comments post PIC No. 1
- Evaluate alternatives
- Schedule PIC No. 2 (Spring 2018)
- Review all comments post PIC No. 2
- Finalize the Recommended Plans
- Prepare the Transportation Environmental Study Report (TESR)
- Place the Study Completion Notice in the newspaper
- 30-day public review period of the TESR
- Environmental Clearance

How can you remain involved in the Study?

- Request that your name/e-mail be added to the mailing list
- Provide a completed comment sheet
- Contact MTO or consultant representatives at any time
- Check the project website at **www.queenswaydowntownbridges.com**

Any of our representatives that are present can assist you with the above activities.

Thank you for your participation at tonight's Public Information Centre. Your input into this study is valued and appreciated. Please provide your completed comment sheet on or before **December 19, 2017**. All information is collected and used in accordance with the *Environmental Assessment Act* and the *Freedom of Information and Protection of Privacy Act*.

Étude de conception préliminaire et d'évaluation environnementale du projet de réfection et de remplacement des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main

Projet groupé (GWP) nº 4170-13-00



Séance d'information publique nº 1

Mardi 5 décembre 2017

Université Saint-Paul

Ottawa

QUEENSWAY DOWNTOWN BRIDGES
OTTAWA
METCALFE TO MAIN

Bienvenue

Bienvenue à la première séance d'information publique (SIP) de l'Étude de conception préliminaire et d'évaluation environnementale (EE) du projet de réfection et de remplacement des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main. Veuillez signer la feuille de présence et vous procurer une feuille de commentaires à la table d'inscription.

Cette séance a pour but de présenter les informations suivantes :

- Survol du projet et zone d'étude
- Processus et calendrier
- Rapport préliminaire du plan d'étude
- Conditions actuelles (environnement, circulation, ponts)
- Solutions de planification et recommandations préliminaires
- Solutions de conception préliminaire
- Prochaines étapes
- Collecte des commentaires du public

Si vous avez des questions au sujet du matériel de présentation, des documents de référence ou de tout autre aspect de cette étude, n'hésitez par à vous adresser aux représentants du MTO ou aux membres de l'équipe d'ingénierie-conseil ici présents.

Nous vous encourageons à exprimer vos idées, commentaires et préoccupations au sujet des informations présentées sur les panneaux. Veuillez déposer les feuilles de commentaires remplies dans la boîte prévue à cette fin, ou la faire parvenir à l'adresse postale ou à l'adresse de courriel indiquées au bas de la feuille de commentaires, au plus tard le 19 décembre 2017.

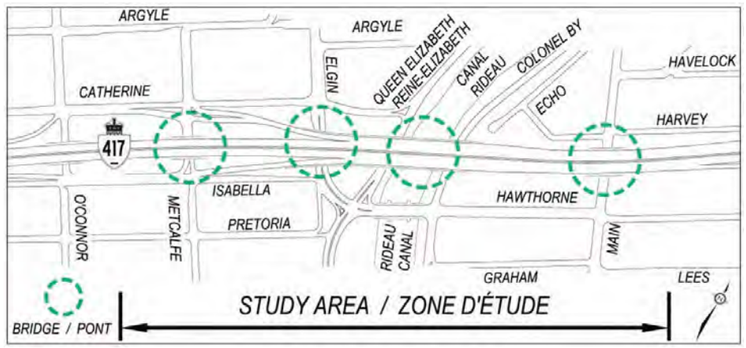
Les personnes intéressées peuvent donner leurs commentaires par écrit tout au long du processus d'EE. Tous les commentaires recueillis seront colligés selon les exigences de la *Loi canadienne sur l'évaluation environnementale* et la *Loi sur l'accès à l'information et la protection de la vie privée* et, à l'exception des renseignements personnels, feront partie du domaine public.

Introduction

Le MTO mène une étude de conception préliminaire et d'évaluation environnementale (EE) en vue d'établir des plans de gestion pour 7 ponts situés à quatre emplacements le long de l'autoroute 417 à Ottawa, soient la rue Metcalfe, la rue Elgin, le canal Rideau et la rue Main. La zone d'étude est illustrée ci-après. Les scénarios de planification envisagées dans cette étude incluent la réfection et le remplacement des ponts.

La zone d'étude a été segmentée pour permettre trois niveaux d'analyse distincts. La *zone d'étude élargie* englobe le secteur géographique où seront planifiés des détours à court terme en cas de fermeture temporaire de l'autoroute. La zone *d'étude immédiate* englobe le corridor autoroutier incluse dans l'emprise du MTO et contiendra les interventions proposées ainsi que les aires d'assemblage potentielles. Les *zones d'étude locales* quant à elles correspondent aux emplacements des ponts.

Un rapport préliminaire de plan d'étude a été préparé afin de proposer un énoncé des enjeux et des possibilités, un processus de planification et un plan de travail, les scénarios possibles, des méthodes de travail, un processus d'évaluation, un programme de consultation du public, des organismes concernés et des peuples autochtones, une liste de documents référence et les étapes à suivre au-delà de l'étude. Le rapport définit les principales tâches à réaliser pour compléter l'étude ainsi que les détails du processus de planification et de conception de l'EE. Il permet et encourage les commentaires tôt dans le processus de planification. Le plan d'étude sera finalisé à la suite de cette séance.



***Le rapport préliminaire du plan d'étude est disponible à la table de documentation.**

Études antérieures

Les études antérieures ci-après sont jugées d'intérêt particulier pour ce projet :

2007 : Évaluation environnementale et conception préliminaire de l'autoroute 417 entre l'autoroute 416 et le chemin Anderson [***Highway 417, from Highway 416 to Anderson Road, Environmental Assessment and Preliminary Design Study***] (GWP 663-930-00) – Cette évaluation environnementale a permis d'établir la vision à long terme de l'autoroute 417 dans le but d'encadrer les améliorations liées aux opérations et à la sécurité. Elle a complétée l'étape « planification » du corridor, mais sans toutefois aborder en détails les plans de gestion des ponts.

2016 : Évaluation environnementale et conception préliminaire des ponts du secteur intermédiaire du Queensway d'Ottawa entre l'avenue Holland et la rue O'Connor [***Ottawa Queensway Mid-town Bridges from Holland Avenue to O'Connor Street, Environmental Assessment and Preliminary Design Study***] (GWP 4075-11-00) – Cette évaluation environnementale a défini les plans de gestion des ponts pour les projets de réfection et de remplacement à l'ouest de la zone d'étude actuelle. L'étude actuelle examine à présent les plans de gestion des 7 structures situés directement à l'est du secteur intermédiaire.

Les REET de 2007 et de 2016 sont disponibles à la table de documentation.

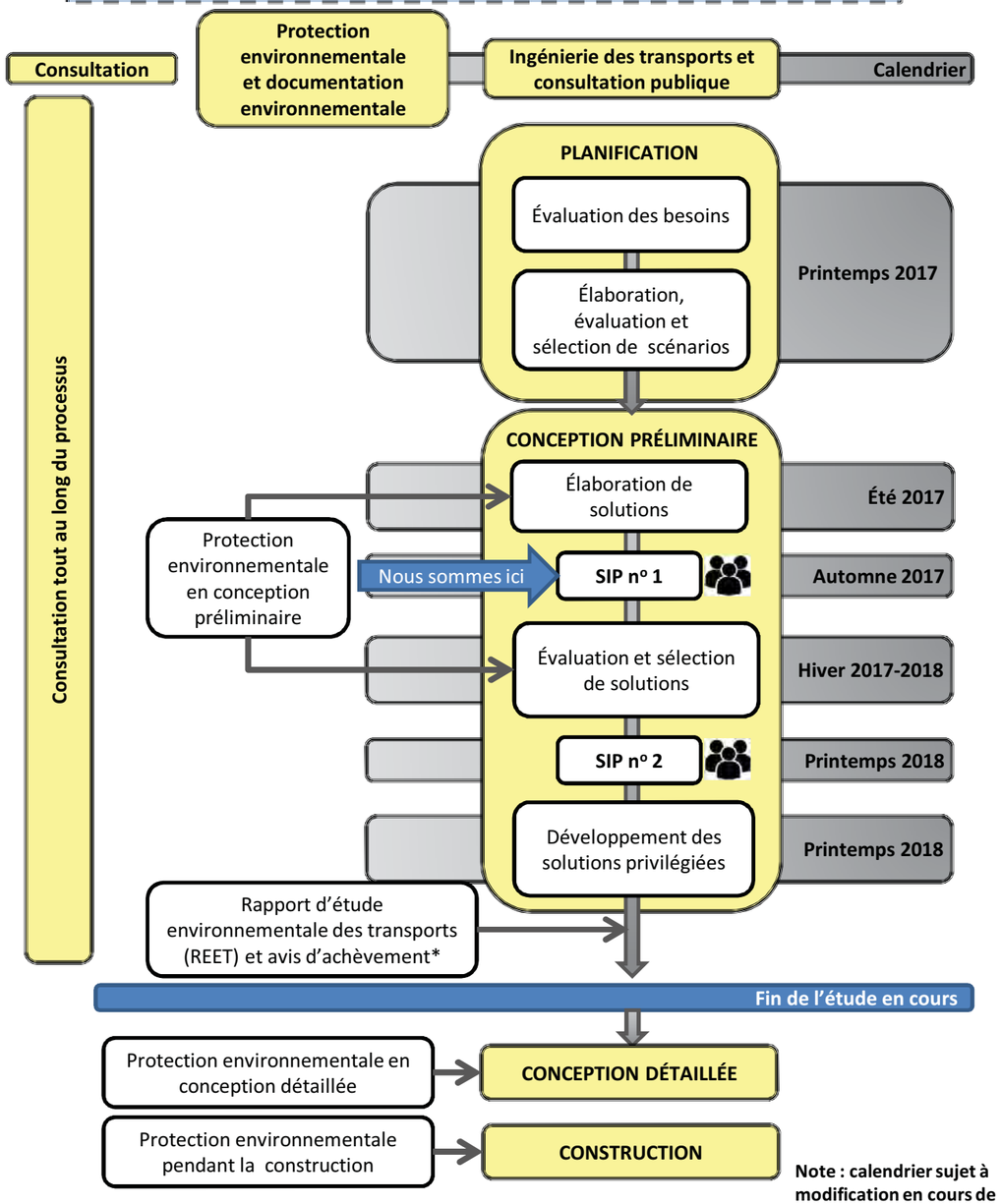
Survol du processus d'EE de portée générale du MTO pour les projets du groupe B

Ce projet est mené selon les exigences du ministère des Transports de l'Ontario (MTO) pour les évaluations environnementales de portée générale pour les projets de transports du groupe B (2000). Conformément à ces exigences, le projet produira les éléments livrables suivants :

- Un rapport d'étude environnementale des transports (REET) sera préparé et déposé auprès du bureau régional du ministère de l'Environnement et de l'Action en matière de changement climatique pour une période d'examen public de 30 jours.
- Un avis public sera publié dans un journal local au moment du dépôt du REET. Cet avis public du REET précisera tout endroit additionnel où les documents pourront être consultés.

Nous vous encourageons à communiquer avec l'équipe de projet du MTO si vous avez des questions ou des préoccupations au sujet de cette étude. Si, après avoir consulté le personnel du MTO, vos préoccupations demeurent non résolues, vous avez le droit de demander que le projet soit soumis à une évaluation environnementale distincte. La décision finale à cet égard revient au ministre de l'Environnement et de l'Action en matière de changement climatique.

Survol du processus d'EE de portée générale du MTO pour les projets du groupe B



Note : calendrier sujet à modification en cours de projet.

***Le REET sera disponible pour examen et commentaires du public pendant 30 jours.**

nonc des enjeux et des possibilit s

Enjeux :

La construction des sept (7) ponts de l'autoroute 417 au centre-ville d'Ottawa remonte à la construction initiale de l'autoroute entre 1959 et 1968. Le pont du canal Rideau arrive à la fin de sa vie utile. Contrairement aux 23 ponts situés plus à l'ouest, il n'existe aucun plan individuel ou coordonné de gestion de la réfection ou du remplacement des 7 ponts du centre-ville permettant d'assurer l'opération sécuritaire continue de l'autoroute dans les années à venir.

Possibilités :

- Établir un plan de gestion pour les 7 ponts de l'autoroute 417 situés entre la rue Main et la rue Metcalfe, poursuivant ainsi le programme du MTO qui consiste à établir des plans de gestion de ponts d'ouest en est le long de l'autoroute.
- Coordonner les plans de gestion pour les 7 ponts en tenant compte de la conception, de la gestion de la circulation et de la construction.

Conditions et contraintes actuelles

Contraintes g n rales

- Emprises de l'autoroute 417 tr s restreintes et aires d'assemblage r duites
- Am nagement actuel des aires d'assemblage potentielles

Principaux services d'utilit publique

- C bles lectriques et conduites de gaz enfouis
- Principale conduite municipale d'approvisionnement en eau (1200 mm)

Canal Rideau

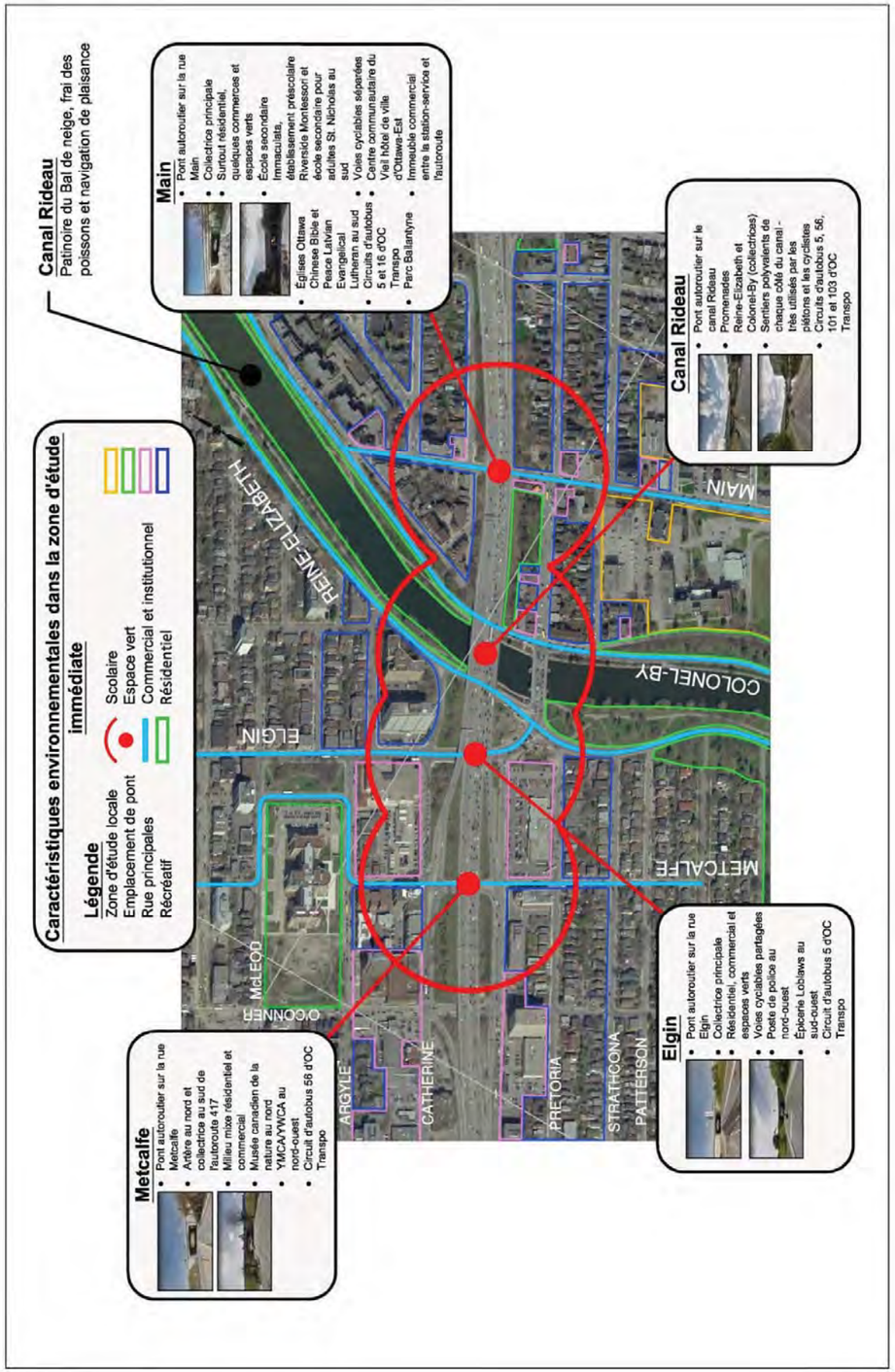
- Patrimoine mondial de l'UNESCO
- Contraintes de temps : saison de la navigation de plaisance (de mai jusqu' l'Action de gr ce en octobre); patinage sur le canal durant le Bal de neige (janvier mars), p riode de frai des poissons (avril juillet)
- Maintien de l'acc s sous le pont pour la promenade du Colonel-By, la promenade de la Reine-Elizabeth et les sentiers r cr atifs polyvalents
- Possibilit de sols contamin s en raison de l'ancienne utilisation du canal et des activit s ferroviaires du pass

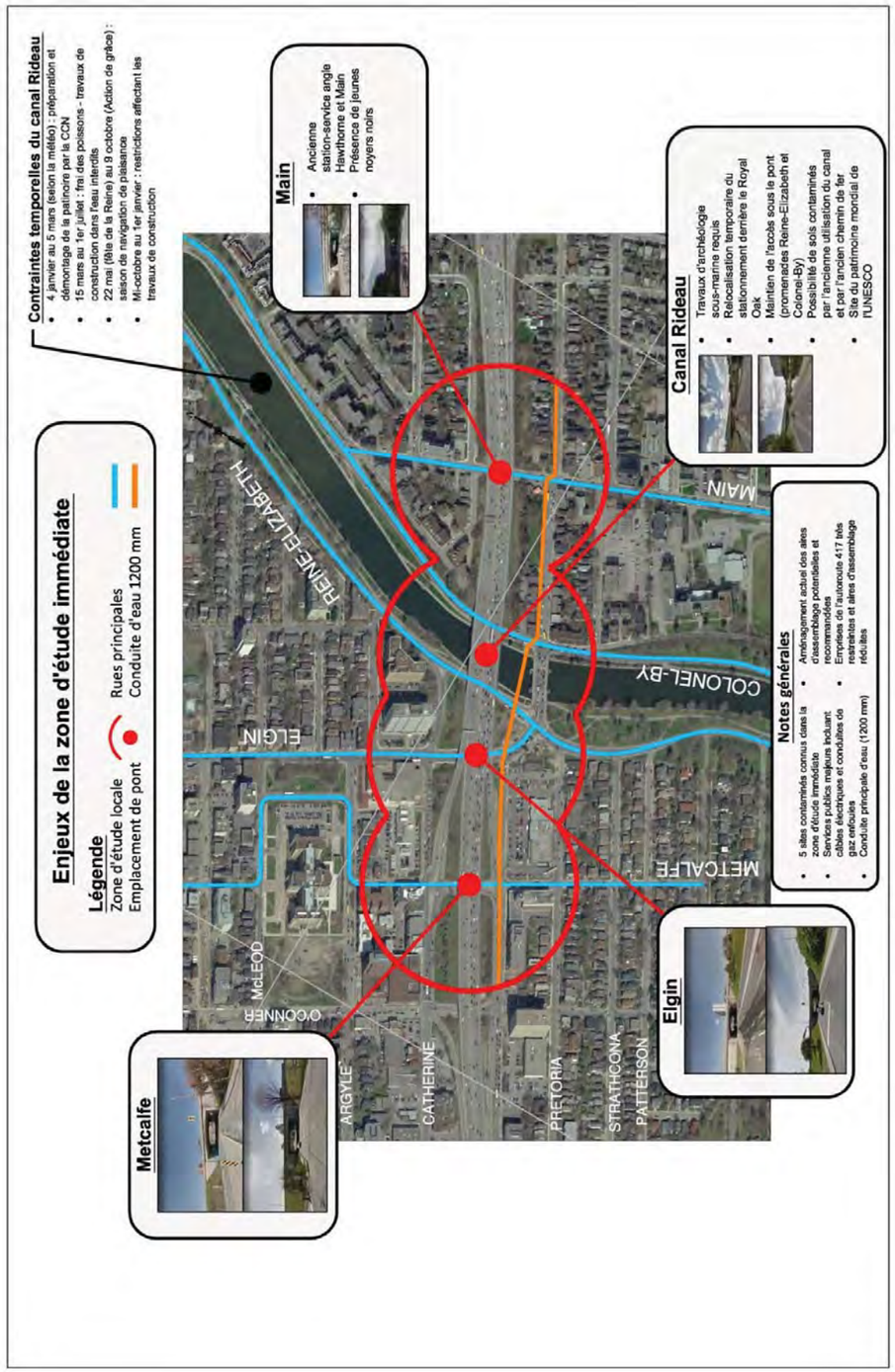
Rue Main

- Ancienne station-service
- Centre communautaire du Vieil h tel de ville d'Ottawa-Est
- difice commercial situ entre la station-service et l'autoroute 417
- Parc Ballantyne

Rue Metcalfe / rue Elgin

- Aucune contrainte connue





Conditions actuelles – environnement

Les ressources physiques, biologiques et socio conomiques de la zone d' tude ainsi que les conditions de circulation et l' tat physique actuel des ponts ont t pris en compte pour d terminer les effets potentiels du projet propos . Les tudes suivantes ont t r alis es ou sont en cours dans le cadre de ce projet :

- ✓ Milieu terrestre et aquatique
- ✓ Évaluation archéologique de niveau 1
- ✓ Aménagement urbain
- ✓ Étude générale de contamination
- ✓ Conception en fonction du contexte
- ✓ État des eaux souterraines
- ✓ Bruit

Le REET de l'autoroute 417 entre l'autoroute 416 et le chemin Anderson (GWP 663-930-00) de janvier 2007 et celui des ponts du secteur interm diaire du Queensway d'Ottawa entre l'avenue Holland et la rue O'Connor (GWP 4075-11-00) d'avril 2016 ainsi que leur tudes connexes ont aussi t consult s dans le cadre de ce projet.

Milieu naturel

valuation du milieu aquatique

Une enqu te de terrain a t effectu e le 22 octobre 2017 dans le canal Rideau sous l'autoroute 417. Le niveau d'eau tait abaiss depuis plusieurs jours mais il fut possible de pr lever des chantillons de poissons. Les esp ces suivantes furent captur es, identifi es et remises l'eau: crapet-soleil, raseux-de-terre noir, carpe commune, meunier noir, poisson-chat brun, achigan petite bouche, perchaude, crapet de roche et crapet arlequin.

Un contrat de Parcs Canada en 2008 pour mener des enqu tes le long du canal Rideau, ciblant en particulier les esp ces aquatiques en p ril – m n camus, m n d'herbe, suceur ballot et anguille d'Am rique –, fut octroy au Fish Ecology and Conservation Physiology Laboratory de l'Universit Carleton. Durant ces enqu tes, 28 esp ces de poisson furent identifi es. Aucune esp ce prioritaire ne fut rencontr e.





valuation du milieu terrestre

La zone d' tude et les aires d'assemblage se trouvent dans un milieu dens ment urbanis . Le couvert v g tal des pentes longeant les structures autorouti res est surtout constitu de p turin des pr s (Kentucky bluegrass) entretenu, de plantations et d'am nagements paysagers. Aucune esp ce v g tale, ni de faune terrestre ou ail e en p ril ne fut identifi e durant les enqu tes de terrain.

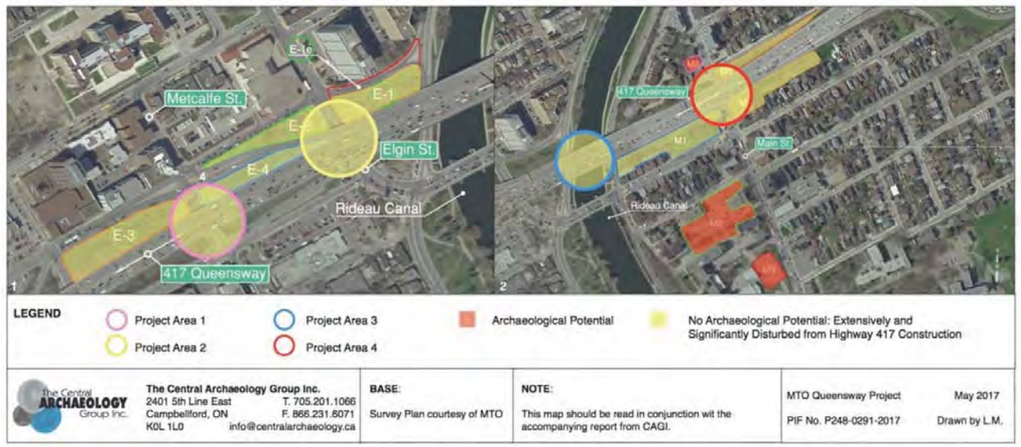






Arch ologie

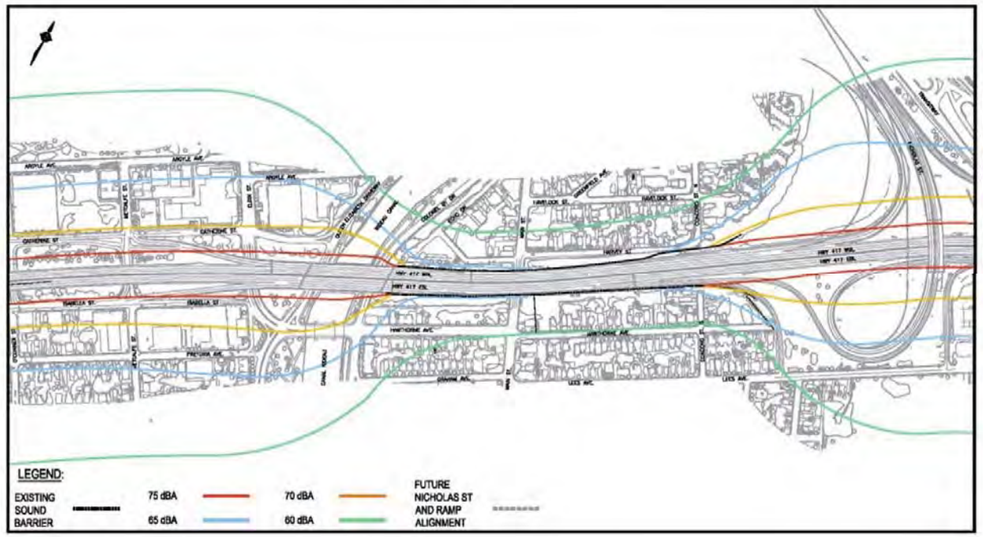
Une tude arch ologique de niveau 1 a t r alis e pour la zone d' tude dans le but d terminer le potentiel de d couverte de ressources arch ologiques pr - contact ou euro-canadiennes. Ce potentiel arch ologique est essentiellement nul en raison des importants travaux de construction associ s la mise en valeur de la zone d' tude au fil des ans. La carte ci-apr s illustre les lieux de potentiel arch ologique de la zone d' tude et des aires d'assemblage (endroits o seront construits les ponts de remplacement) propos es. L'examen des aires d'assemblage est r sum sur un autre panneau.



Bruit

Les barri res anti-bruit existants seront examin es dans le cadre de cette tude. Les niveaux acoustiques actuels illustr s ci-dessous sont bas s sur la circulation routi re pr vue en 2017. Des informations suppl mentaires seront fournies la 2e SIP.

NIVEAUX ACOUSTIQUES ACTUELS



Conception adapt e au contexte - Approche

L'approche et le traitement seront comparables ce qui a t produit pour l' tude des ponts du secteur interm diaire, juste l'ouest.





Le contexte particulier de chaque emplacement sera modélisé et la conception y sera adaptée. Ces images illustrent une approche comparable appliquée à l'étude des ponts du secteur intermédiaire.

Espaces de verdure proximit des ponts du centre-ville



Parc Ballantyne – vue en direction est



Larges bandes de remblais paysagers





Promenades et sentiers récréatifs de la CCN
Paysages culturels

Conception adapt e au contexte – autres caract ristiques importantes







Pont Metcalfe – vue en direction nord
Musée de la nature en arrière-plan

Contexte résidentiel, Ottawa-Est



Ancienne station-service angle Main et Hawthorne convertie en bureau de vente – non désigné en vertu de la Loi sur le patrimoine de l'Ontario, mais repère important dans la communauté



Centre communautaire du Vieil hôtel de ville d'Ottawa-Est sur la rue Main – désigné en vertu de la Loi sur le patrimoine de l'Ontario



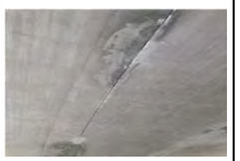
Pont du canal Rideau : vue à partir du pont Pretoria
Canal Rideau – lieu historique national et site du patrimoine mondial de l'UNESCO

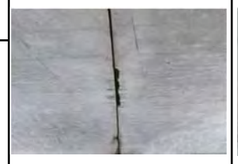
Conception adapt e au contexte – principes directeurs

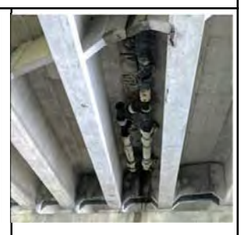
- Les travaux de conception adapt e au contexte (CAC) mettront profit les lignes directrices tablies pr c demment pour le projet des ponts du secteur interm diaire
- Lorsque les conditions du site le permettent, les l ments de CAC seront int gr s dans les travaux de conception
- Le MTO laborera un traitement paysager de base pour chaque emplacement de pont
- Les l ments de conception propos s qui d passent les normes du MTO dans le cadre de cette tude pourront tre r alis es en partenariat avec les communaut s concern es, le tout devant tre conforme aux conditions tablies par le MTO
- Les l ments et les consid rations de CAC pourront inclure ce qui suit :
    - o Lumi re – naturelle et artificielle
    - o Mat riaux
    - o Art public (en partenariat seulement)
    - o Vues
    - o Fa ades
    - o crans antibruit
    - o Am nagements paysagers v g taux
    - o Fournitures et quipement (en partenariat seulement)
- Le principe de base consiste rendre chaque pont plus s curitaire, plus clair , plus ouvert et plus cologique

tat actuel des ponts

Passage sup rieur de la rue Metcalfe			
Ann e de construction 1962	Type de pont Cadre rigide		
• Perte d' tanch it du joint de dilatation • Fissures, d lamination et paufrure au sommet de l'interface du mur de sout nement et de la cul e • Bris de sections du couronnement du mur de sout nement • Vie utile typique : 50-60 ans			

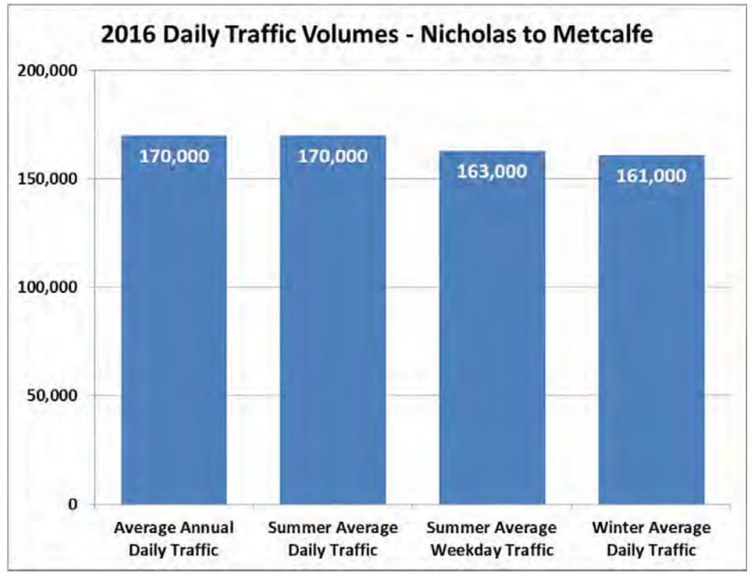
Passage sup rieur de la rue Elgin			
Ann e de construction 1962	Type de pont Cadre rigide		
• Perte d' tanch it du joint de dilatation • D lamination des sous-faces et des joints du tablier • D lamination des cul es et des murs de sout nement • D lamination et sections bris es du couronnement des murs de sout nement • Vie utile typique : 50-60 ans			

Passage sup rieur de la rue Main			
Ann e de construction 1962	Type de pont Cadre rigide		
• Perte d' tanch it du joint de dilatation • paufrure des sous-faces et des joints de dilatation longitudinaux du tablier • D lamination et paufrure la base des cul es • D lamination sur les murs de sout nement • Vie utile typique : 50-60 ans			

Pont et passage sup rieur du canal Rideau			
Ann e de construction 1962	Type de pont Poutre continue postcontrainte		
• Plusieurs poutrelles d lamin es au niveau des assises • D lamination et paufrure des poutres ext rieures et de la poutre m diane • D but de d t rioration des r parations apport es aux piliers			

Circulation

- L'autoroute 417 est un corridor de transport principal qui r pond aux besoins de mobilit locaux, r gionaux et de transit
- Le d bit de circulation bidirectionnel moyen est 170 000 v hicules par jour
- Durant les heures de pointe (matin et apr s-midi), la demande des d placements journaliers cr e des probl mes de congestion routi re
- La r fection ou le remplacement conventionnel des 7 structures exigera la fermeture s lective de voies et de bretelles, ce qui affectera la mobilit pour l'enti re dur e d'une saison de construction (8 mois)
- Ce mandat examinera les moyens d'att nuer les impacts sur la circulation par la r alisation des travaux lorsque les d bits de circulation sont moins lev s (soirs et fins de semaine)
- L' valuation des solutions inclura la prise en compte des impacts sur la circulation routi re



Sc narios possibles – sc narios de planification

Les sc narios possibles englobent les approches ou m thodes r pondant l' nonc des enjeux et des possibilit s associ au projet. Cette tape est une exigence obligatoire du processus d'EE de port e g n rale du MTO. Dans cette tude, l'attention est port e sur quatre emplacements. Les solutions possibles refl tent une gamme vari e de strat gies, incluant le statu quo (ne rien faire).

X **Sc nario 1** : Maintient du statu quo sans action significative pour g rer les structures vieillissantes. Cette approche accepte la d t rioration continue de ces ponts au cours d'un horizon de planification de 20 ans. **Sc nario NON recommand .**

Sc nario 2 : conform ment aux dispositions des EE de port e g n rale du MTO, cette solution consisterait en des am nagements de transport provinciaux neufs ou am lior s (r nov s). Puisque ces ponts existent d j , cette solution peut tre intitul e simplement gestion des infrastructures de ponts .

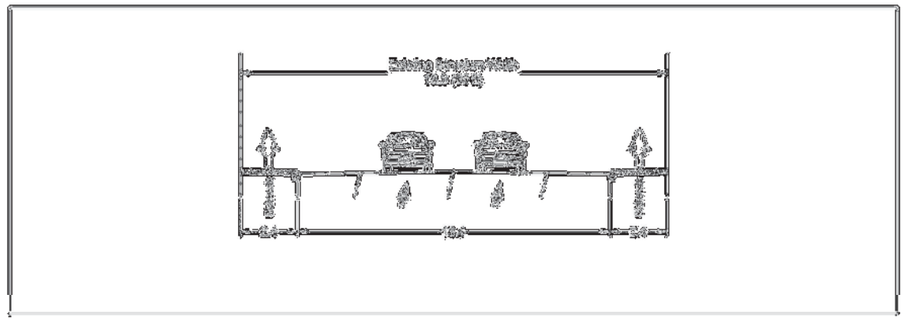
✓ **Sc nario 2a** : r nover les ponts existants dans le but de prolonger leur vie utile, incluant des am liorations structurales requises pour respecter les nouvelles normes parasismiques. **Sc nario recommand comme solution de conception pr liminaire.**

✓ **Sc nario 2b** : remplacer les ponts existants par de nouvelles structures. **Sc nario recommand comme solution de conception pr liminaire.**

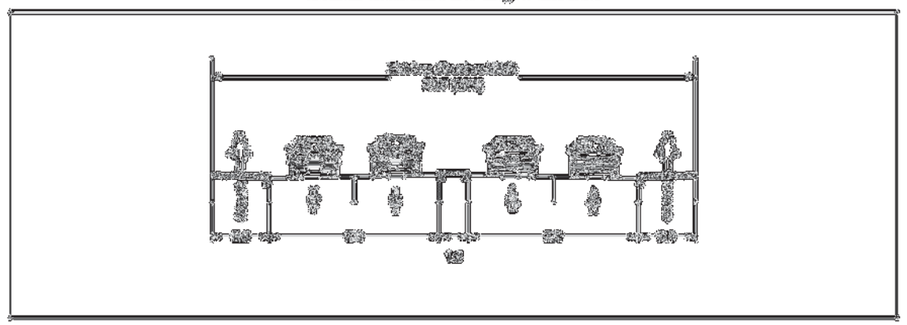
Le rapport d'évaluation des scénarios possibles est disponible à la table de documentation.

EXISTING SUPERSTRUCTURE CROSS SECTIONS

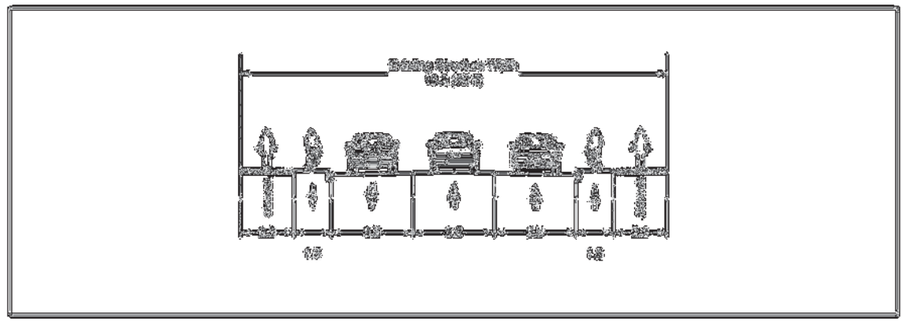
Cross Section on Nicholls Street



Cross Section on Elgin Street



Cross Section on Main Street



Solutions de conception pr liminaire
Ponts cadre rigide

Les sc narios retenus pour les ponts cadre rigide (rue Metcalfe, rue Elgin et rue Main) incluent leur r habilitation ou leur remplacement en tant que strat gies de gestion des ponts.

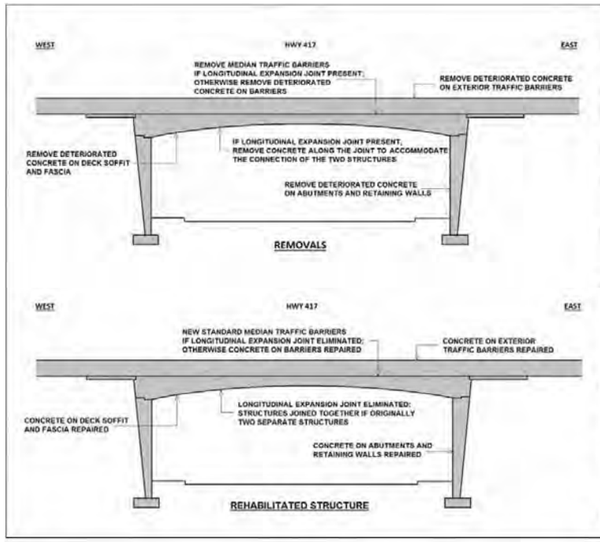
Les **solutions de conception pr liminaire** envisag es sont les suivantes :

- **Solution A-A1** – R fection rapide
- **Solution A-A2** – R fection conventionnelle
- **Solution B-B1** – Remplacement conventionnel
- **Solution B-C1** – Remplacement rapide

Diff rentes aires d'assemblage pour le remplacement rapide sont pr sentement l' tude et sont pr sent es sur les panneaux qui suivent.

Les plans de gestion de la circulation sont pr sentement l' tude pour le remplacement conventionnel (construction sur place) et rapide (fermeture de l'autoroute) sont pr sent s sur les panneaux qui suivent.

Solutions de conception pr liminaire
Ponts cadre rigide – r fection rapide



RÉFECTION RAPIDE

Séquence des travaux :

- Dévier la circulation de l'autoroute 417 et préparer le site selon l'échéancier des travaux.
- Enlever la glissière médiane au-dessus des rues Elgin et Main.
- Enlever et réparer le béton détérioré des glissières latérales en général et de la glissière médiane au-dessus de la rue Metcalfe, au besoin.
- Aux rues Elgin et Main, enlever le béton de la sous-face le long du joint pour permettre le raccordement des structures.
- Enlever et réparer le béton détérioré de la sous-face et de la bordure du tablier des culées et des murs de soutènement.
- Construire une nouvelle glissière médiane standard si requise.

Avantage :

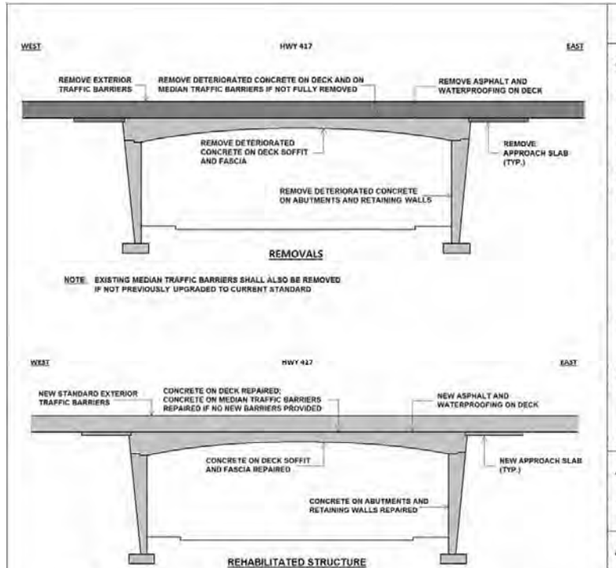
- Perturbation minimale de la circulation sur les rues locales.

Inconvénients :

- Fermeture possible d'une voie sur l'autoroute.
- Réfections majeures potentielles à venir après environ 10 ans.

Le plan de gestion de la circulation A-A1 : r fection rapide est pr sent sur les panneaux individuels des rues Metcalfe, Elgin et Main.

Solutions de conception pr liminaire
Ponts cadre rigide – r fection conventionnelle



RÉFECTION CONVENTIONNELLE

Séquence des travaux :

- Dévier la circulation de l'autoroute 417 et préparer le site selon l'échéancier des travaux.
- Enlever l'asphalte et le revêtement imperméable sur le tablier.
- Enlever la dalle d'approche.
- Enlever les glissières latérales au-dessus des rues Metcalfe et Main et la glissière médiane au-dessus de la rue Metcalfe.
- Enlever et réparer le béton détérioré sur le tablier, les glissières latérales au-dessus de la rue Elgin et la glissière médiane au-dessus des rues Elgin et Main.
- Enlever et réparer le béton détérioré de la sous-face et de la bordure du tablier, des culées et des murs de soutènement.
- Construire une nouvelle dalle d'approche.
- Construire de nouvelles glissières latérales au-dessus des rues Metcalfe et Main et une nouvelle glissière médiane au-dessus de la rue Metcalfe.
- Imperméabiliser et repaver le tablier.

Avantage :

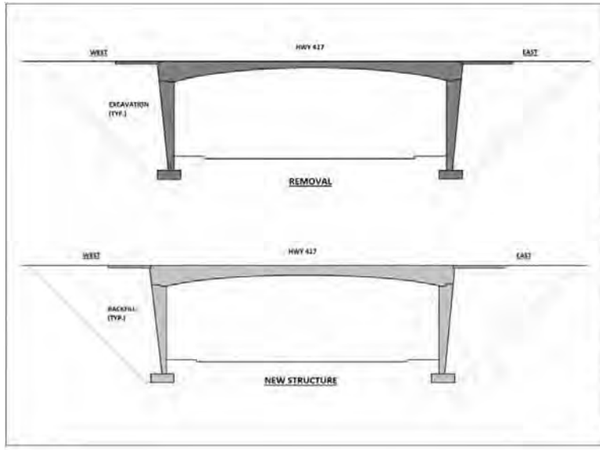
- Augmente la durée de vie utile de la structure d'environ 30 ans.

Inconvénients :

- Aucune modification possible de la travée ou du dégagement du pont.
- Requiert environ une saison pour compléter les travaux.
- Perturbation de la circulation sur l'autoroute 417 et sur les rues locales.

Le plan de gestion de la circulation A-A2 : R fection conventionnelle est pr sent sur les panneaux individuels des rues Metcalfe, Elgin et Main.

Solutions de conception pr liminaire
Ponts cadre rigide – remplacement conventionnel



REMPLACEMENT CONVENTIONNEL

Séquence des travaux :

- Installer un système de protection, dévier la circulation de l'autoroute 417 et préparer le site selon l'échéancier des travaux.
- Excaver et enlever la structure existante.
- Construire de nouvelles fondations et la nouvelle structure à cadre rigide en utilisant une méthode conventionnelle.

Avantages :

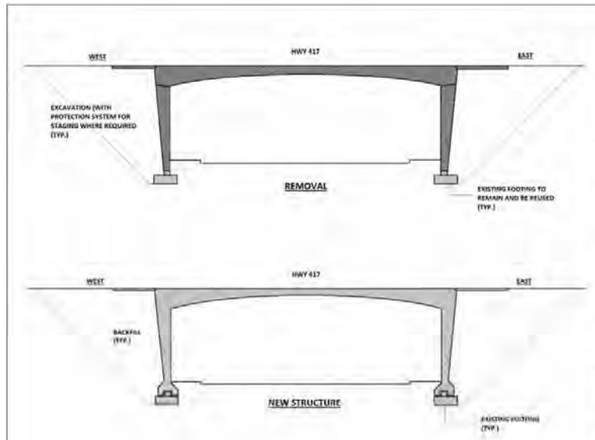
- Largeur de rue locale maintenue ou ajustée au besoin.
- Une structure entièrement nouvelle est construite avec une durée de vie utile de 75 ans.

Inconvénients :

- Durée des travaux plus longues, potentiellement une saison et demie.
- Perturbation de la circulation sur l'autoroute 417 et les rues locales.

Le plan de gestion de la circulation B-B1 : remplacement conventionnel est pr sent sur les panneaux individuels des rues Metcalfe, Elgin et Main.

Solutions de conception pr liminaire
Ponts cadre rigide – remplacement rapide



REMPLACEMENT RAPIDE

Séquence des travaux :

- Construire la nouvelle structure à cadre rigide sur le site d'assemblage.
- Installer un support temporaire et préparer la structure pour retrait.
- Installer un système de protection, excaver et scier les culées au-dessus des fondations pour arranger le raccordement à la nouvelle structure.
- Enlever la structure existante.
- Préparer les fondations et les restants de culées pour réception de la nouvelle structure.
- Installer la nouvelle structure à l'aide d'un transporteur modulaire autopropulsé.

Avantages :

- Perturbation minimale de la circulation.
- Aucun plan de gestion de la circulation requise.
- Une nouvelle structure est construite (sur des fondations existantes).
- Les fondations existantes sont réutilisées et les excavations sont minimisées.

Inconvénients :

- La durée de vie utile de la nouvelle structure pourrait être affectée par celle des fondations.
- Site d'assemblage requis près du pont à remplacer.
- Risques d'ouverture tardive et de fermeture complète de l'autoroute 417 à considérer.
- Le coût intrinsèque de la technologie de remplacement rapide est en sus.

Le plan de gestion de la circulation B-C1 : remplacement conventionnel est pr sent sur les panneaux individuels des rues Metcalfe, Elgin et Main.

Aires d'assemblage potentielles des structures cadre rigide – rue Main

Site	Potentiel pour le remplacement rapide de pont (RRP)
M-1 Adjacent à l'avenue Hawthorne, 10 m à l'ouest de la rue Main (parc Ballantyne)	• Adéquat → Possibilité d'un accès direct à la rue Main, aucun impact sur les résidences à proximité → L'aire de travail est acceptable → Les pentes du site sont bonnes
M-2 Rue Graham (école d'éducation aux adultes)	• Médiocre → Non conforme aux exigences de dimensions et de superficie → Trajet relativement long entre l'aire d'assemblage et l'emplacement final, comparé au site M-1 → Relocalisation requise des câbles aériens des deux côtés de la rue Main
M-3 (stationnement de l'école secondaire Immaculata)	• Médiocre → Non conforme aux exigences de dimensions et de superficie → La rue Main est trop étroite pour le transport de la structure → Importants travaux d'excavation requis pour améliorer la pente entre ce site et la rue Main → Impacts sur les câbles aériens des côtés est et ouest de la rue Main
M-4 Terrains du MTO sur le côté est de la rue Main, juste au sud de l'autoroute	• Médiocre → Non conforme aux exigences minimales de la dimension de la travée → Les véhicules de construction auraient de la difficulté de s'approcher des 2 structures qui devraient être construites dos à dos
M-5 Emprise du MTO juste au nord de l'autoroute, du côté est de la rue Main	• Médiocre → Grandeur est dimensions de l'emprise non conforme aux exigences → impacts sur les résidences à proximité → Perte de places de stationnement sur rue
M-6 Propriétés résidentielles au nord de l'autoroute, du côté ouest de la rue Main	• Médiocre → impacts importants sur les propriétés résidentielles (nécessité d'acquérir jusqu'à 6 résidences) → Répond aux exigences liées aux pentes du site
M-7 Terrain de football de l'école secondaire Immaculata	• Médiocre → La rue Main est trop étroite pour le transport de la structure → Perte du terrain de football/impacts sur la communauté

La note technique sur l'évaluation des aires d'assemblage des structures à cadre rigide est disponible à la table de documentation

Aires d'assemblage potentielles des structures cadre rigide
Rues Metcalfe et Elgin

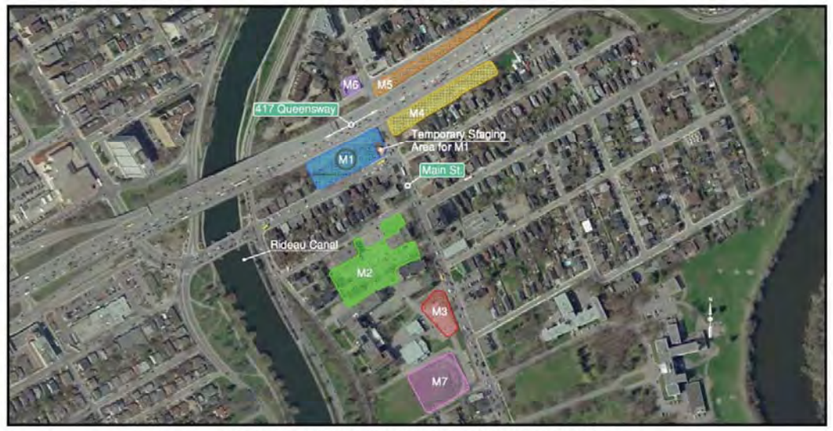
Site	Possibilités de remplacement rapide de pont (RRP)
E-1 Sur le côté nord de l'autoroute, à l'est de la rue Elgin	• Adéquat → Le site peut offrir un accès direct aux rues Elgin et Catherine → L'aire de travail est acceptable → Court trajet de déplacement → Aucun impact sur l'itinéraire de détour lorsque l'autoroute sera fermée → Les pentes vers le site sont bonnes
E-1e (site agrandi pour inclure la rue Catherine)	• Adéquat → Offre un meilleur accès à la structure du canal Rideau pour les grues et l'équipement de transport
E-2 Adjacent à la rue Elgin, du côté ouest	• Médiocre (pour l'entière structure) → Non conforme aux exigences de dimensions et de superficie pour un site de remplacement intégral de structure → Court trajet entre l'aire d'assemblage et l'emplacement du pont → Nécessité de relocaliser les câbles aériens → Aucun impact sur l'itinéraire de détour
E-3 Adjacent à la rue Metcalfe, immédiatement à l'ouest	• Adéquat → Accès direct à la structure de la rue Metcalfe → Peut accommoder la structure de la rue Elgin si E-1 non disponible à cause de contraintes de temps → Aucun impact sur la communauté
E-4 Terrains du MTO du côté est de la rue Metcalfe, entre l'autoroute et la bretelle de sortie vers la rue Catherine	• Médiocre → Non conforme aux exigences minimales de la dimension de la travée → Les véhicules de construction auraient accès au site à partir de la bretelle de sortie de l'autoroute, créant un risque de collisions

La note technique sur l'évaluation des aires d'assemblage des structures à cadre rigide est disponible à la table de documentation

POTENTIAL STAGING SITES - RIGID FRAME

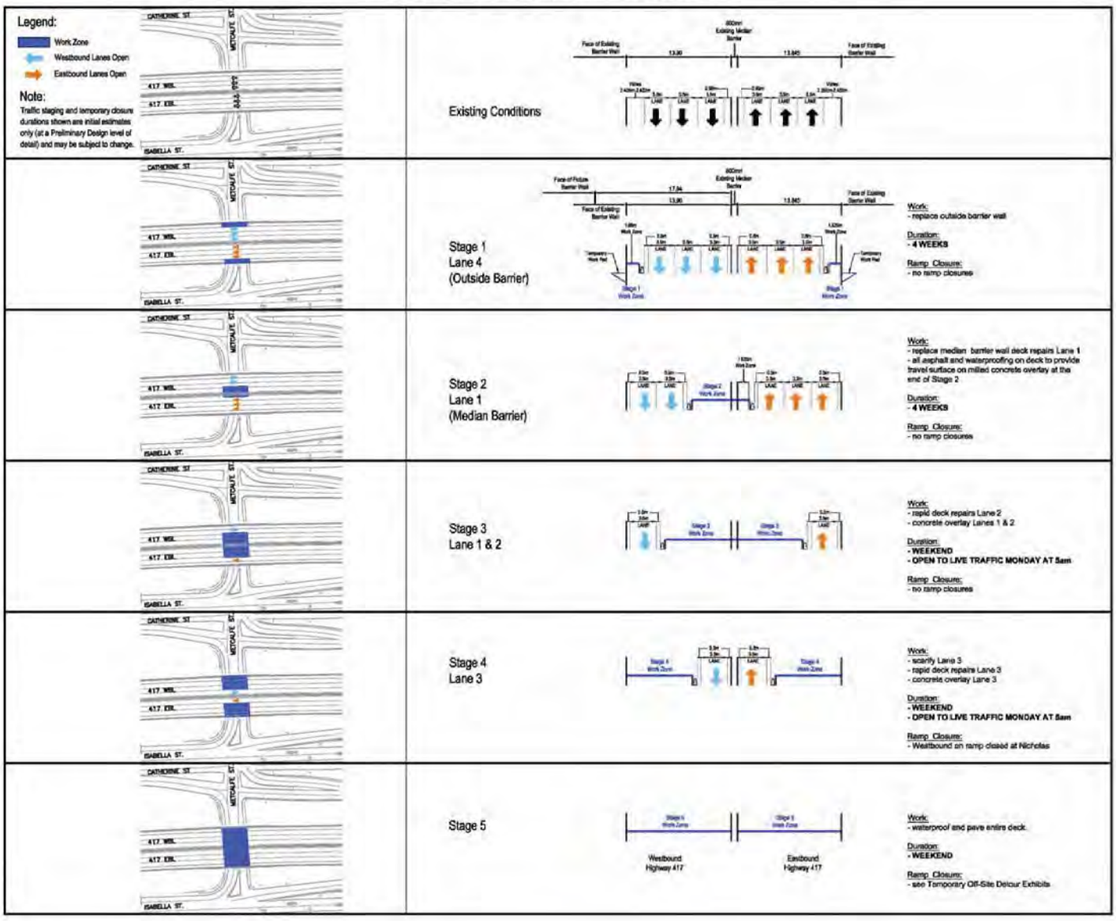


POTENTIAL STAGING SITES FOR THE METCALFE STREET AND ELGIN STREET BRIDGES

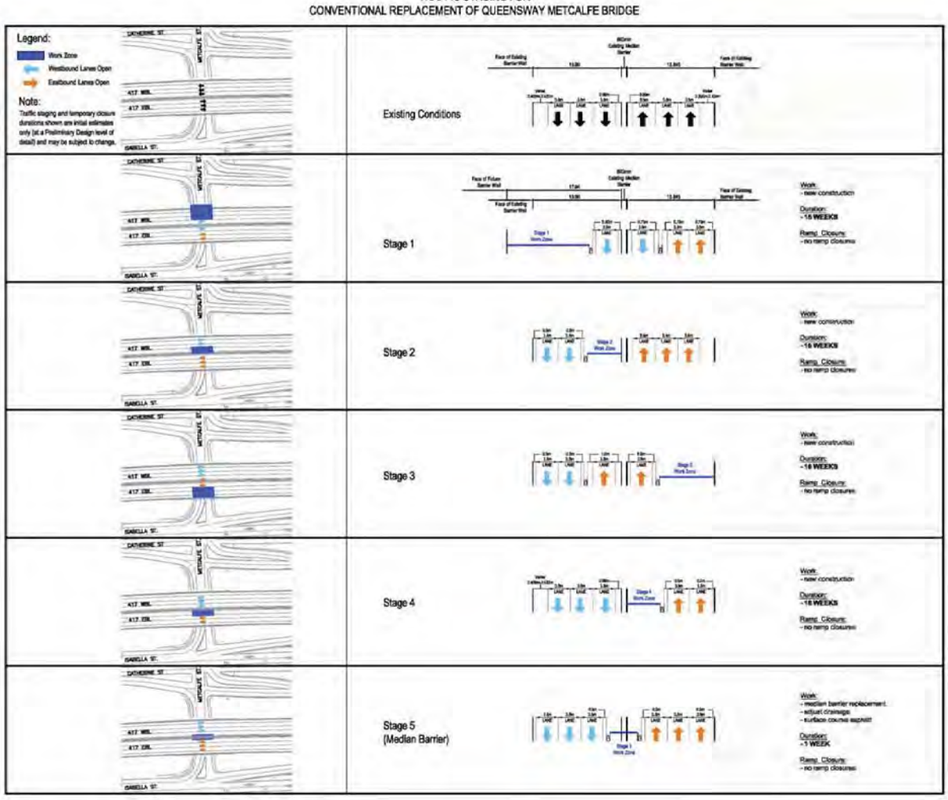


POTENTIAL STAGING SITES FOR MAIN STREET BRIDGE

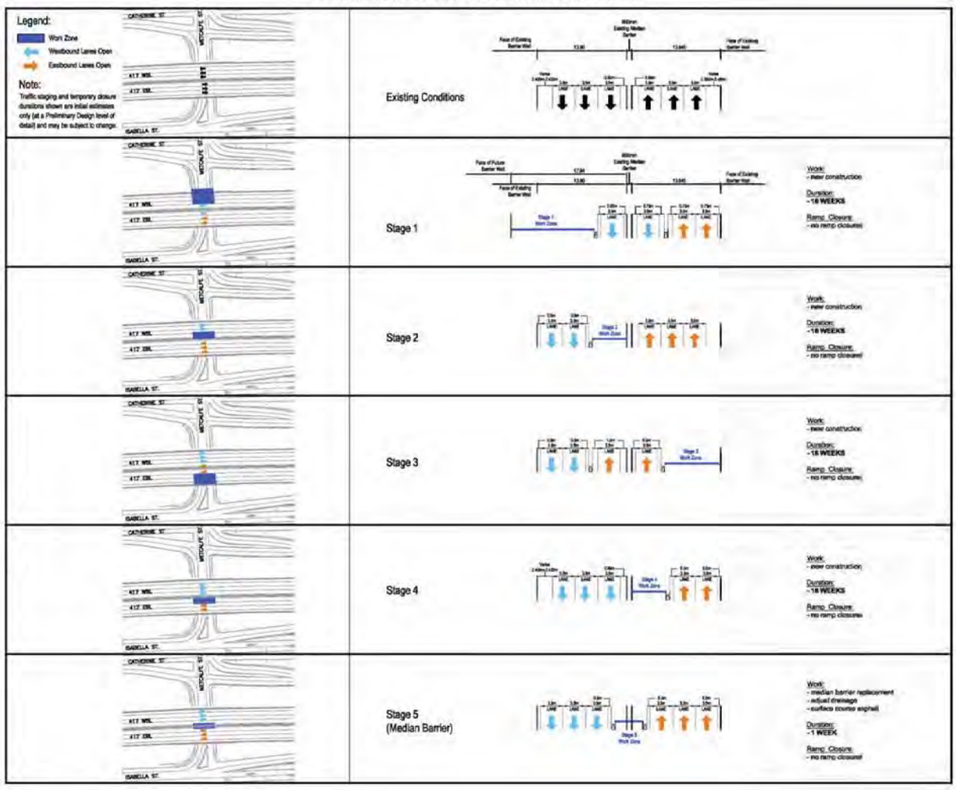
ALTERNATIVE A-A1
TRAFFIC STAGING FOR
RAPID REHABILITATION OF QUEENSWAY METCALFE BRIDGE



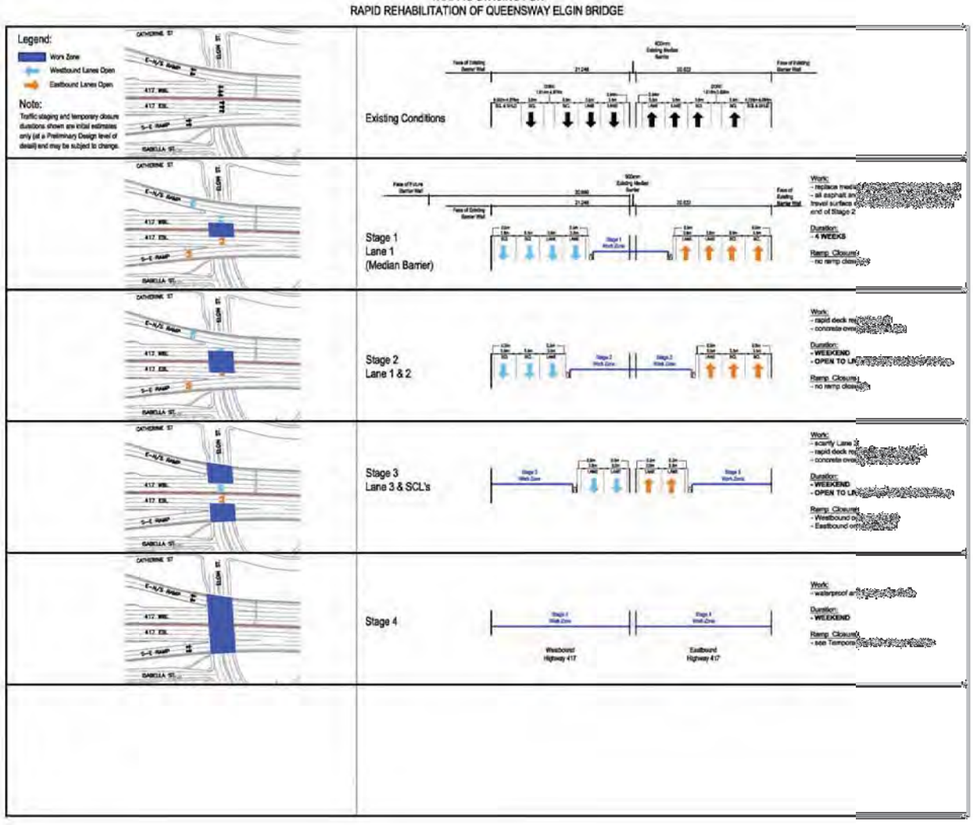
ALTERNATIVE B-B1
TRAFFIC STAGING FOR
CONVENTIONAL REPLACEMENT OF QUEENSWAY METCALFE BRIDGE



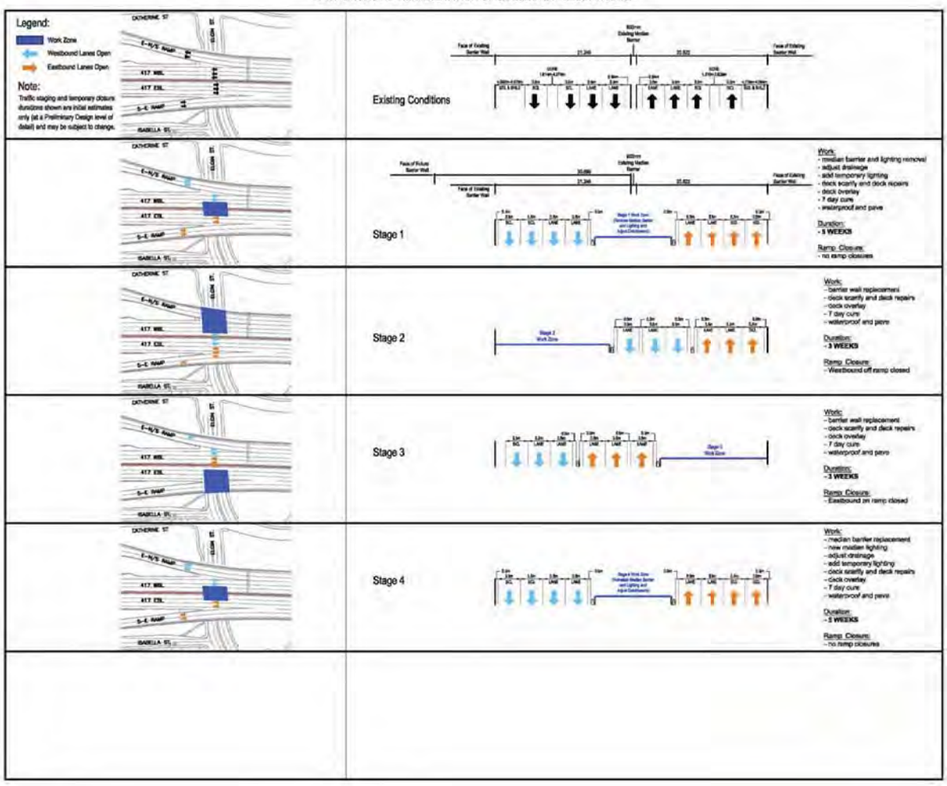
ALTERNATIVE B-B1
TRAFFIC STAGING FOR
CONVENTIONAL REPLACEMENT OF QUEENSWAY METCALFE BRIDGE



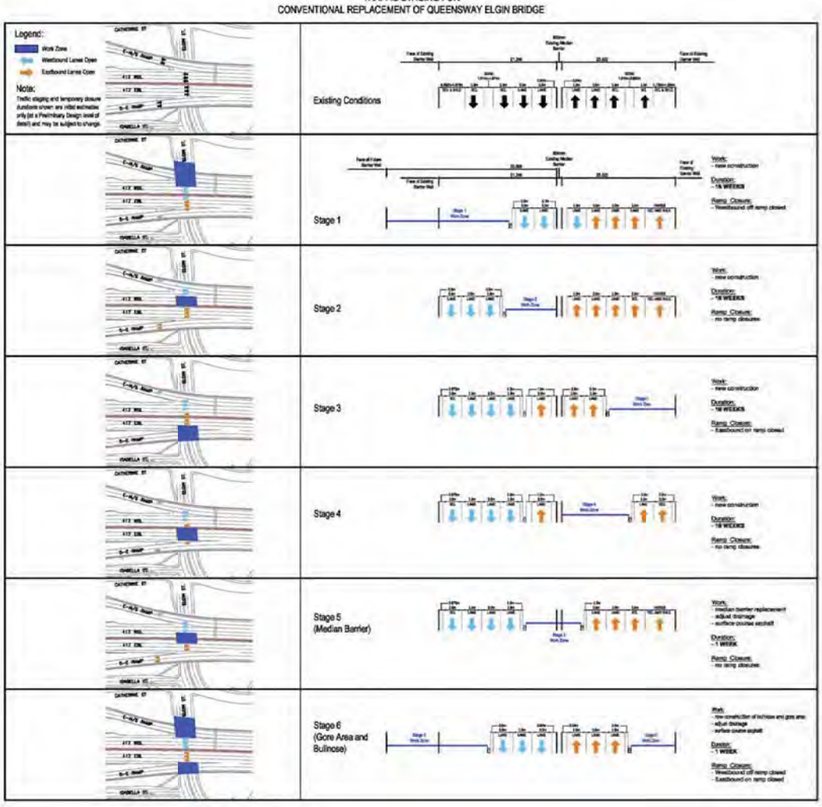
ALTERNATIVE A-A1
TRAFFIC STAGING FOR
RAPID REHABILITATION OF QUEENSWAY ELGIN BRIDGE



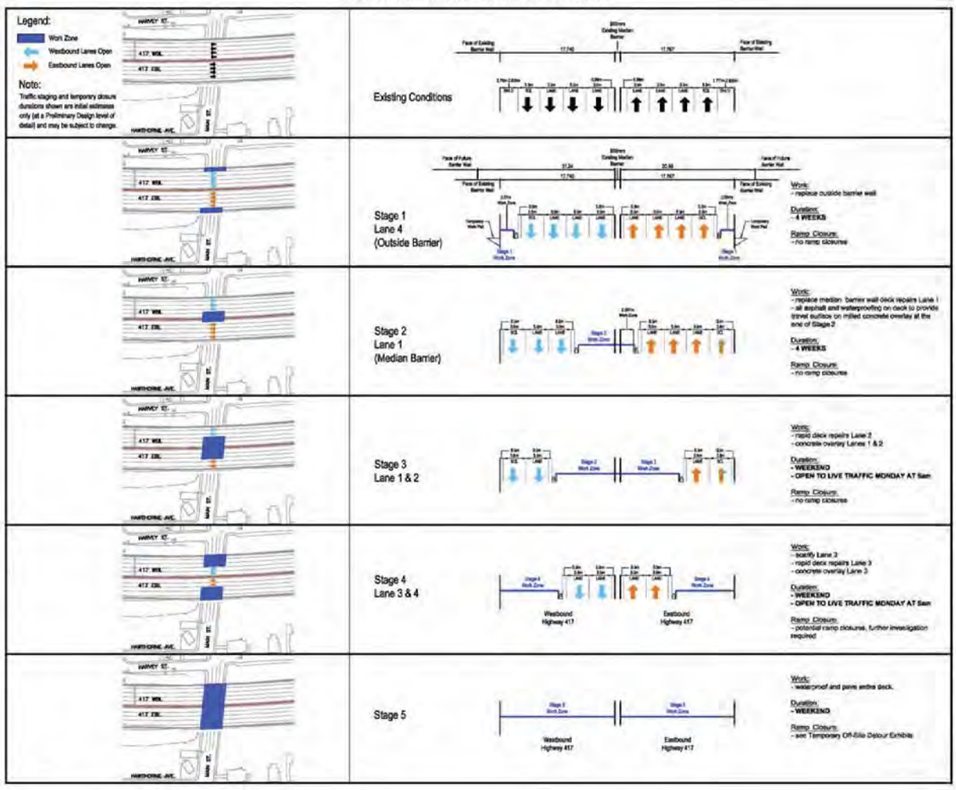
ALTERNATIVE A-A2
TRAFFIC STAGING FOR
CONVENTIONAL REHABILITATION OF QUEENSWAY ELGIN BRIDGE



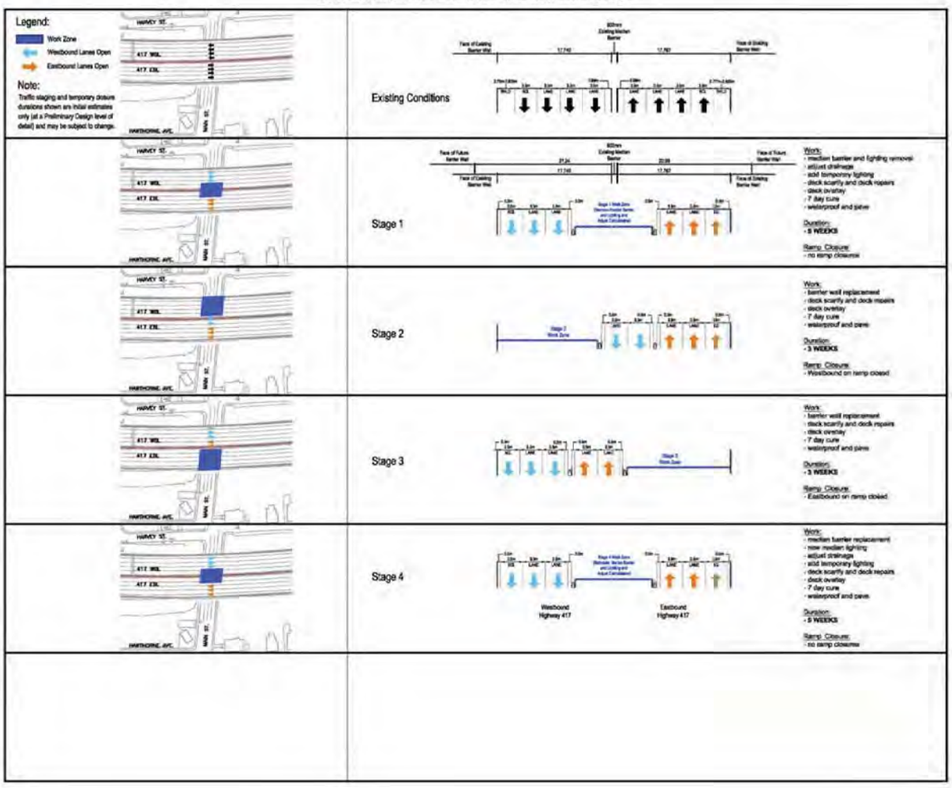
ALTERNATIVE B-B1
TRAFFIC STAGING FOR
CONVENTIONAL REPLACEMENT OF QUEENSWAY ELGIN BRIDGE

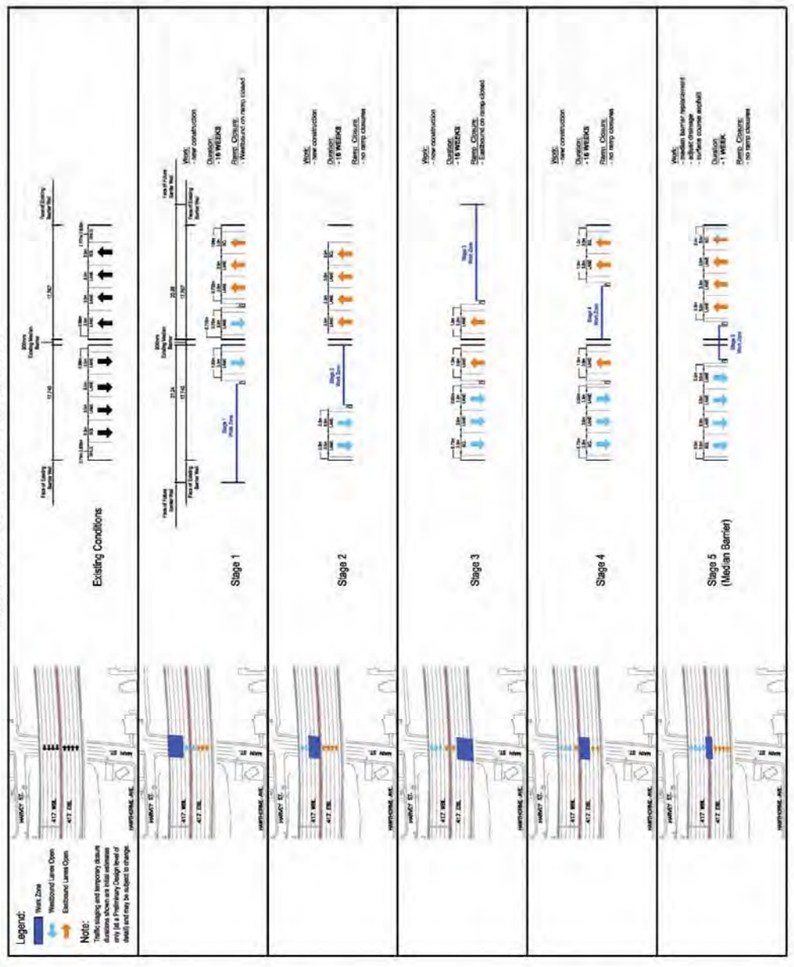


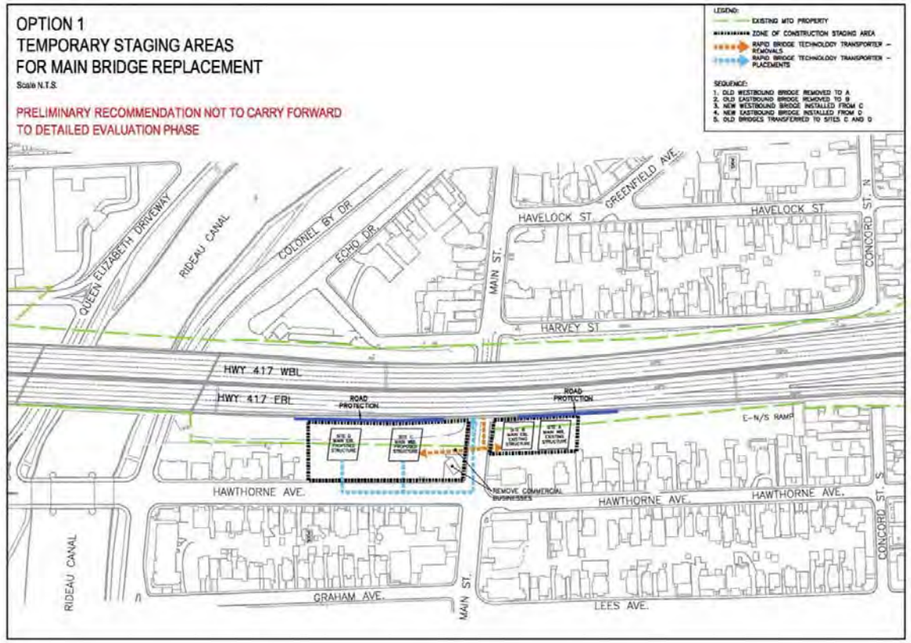
ALTERNATIVE A-A1
TRAFFIC STAGING FOR
RAPID REHABILITATION OF QUEENSWAY MAIN BRIDGE



ALTERNATIVE A-A2
TRAFFIC STAGING FOR
CONVENTIONAL REHABILITATION OF QUEENSWAY MAIN BRIDGE




ALTERNATIVE B-B1
TRAFFIC STAGING FOR
CONVENTIONAL REPLACEMENT OF QUEENSWAY MAIN BRIDGE
Existing Conditions
Stage 1
Stage 2
Stage 3
Stage 4
Stage 5
(Median Barrier)
Legend:
Work Zone
Westbound Lanes Open
Eastbound Lanes Open
Note:
Traffic staging and temporary closure details are preliminary only (At a Preliminary Design level of detail) and may be subject to change.


OPTION 1
TEMPORARY STAGING AREAS
FOR MAIN BRIDGE REPLACEMENT
Scale N.T.S.
PRELIMINARY RECOMMENDATION NOT TO CARRY FORWARD
TO DETAILED EVALUATION PHASE
LEGEND:
EXISTING MTO PROPERTY
ZONE OF CONSTRUCTION STAGING AREA
RAPID BRIDGE TECHNOLOGY TRANSPORTER – REMOVALS
RAPID BRIDGE TECHNOLOGY TRANSPORTER – PLACEMENTS
SEQUENCE:
1. OLD WESTBOUND BRIDGE REMOVED TO A
2. OLD EASTBOUND BRIDGE REMOVED TO B
3. NEW WESTBOUND BRIDGE INSTALLED FROM C
4. NEW EASTBOUND BRIDGE INSTALLED FROM D
5. OLD BRIDGES TRANSFERRED TO SITES C AND D
QUEEN ELIZABETH DRIVEWAY
RIDEAU CANAL
COLONEL BY DR.
ECHO DR.
MAIN ST.
GREENFIELD AVE.
HAVELOCK ST.
CONCORD ST. N
HARVEY ST.
HWY 417 WBL
HWY 417 EBL
ROAD PROTECTION
E-N/S RAMP
HAWTHORNE AVE.
REMOVE COMMERCIAL BUSINESSES
GRAHAM AVE.
LEES AVE.
CONCORD ST. S


OPTION 2
TEMPORARY STAGING AREAS
FOR MAIN BRIDGE REPLACEMENT
Scale N.T.S.
PRELIMINARY RECOMMENDATION TO CARRY FORWARD
TO DETAILED EVALUATION PHASE
LEGEND:
EXISTING MTO PROPERTY
ZONE OF CONSTRUCTION STAGING AREA
RAPID BRIDGE TECHNOLOGY TRANSPORTER – REMOVALS
RAPID BRIDGE TECHNOLOGY TRANSPORTER – PLACEMENTS
SEQUENCE:
1. OLD WESTBOUND BRIDGE REMOVED TO A
2. OLD EASTBOUND BRIDGE REMOVED TO B
3. NEW WESTBOUND BRIDGE INSTALLED FROM C
4. NEW EASTBOUND BRIDGE INSTALLED FROM D
5. OLD BRIDGES TRANSFERRED TO SITES C AND D
QUEEN ELIZABETH DRIVEWAY
RIDEAU CANAL
COLONEL BY DR.
ECHO DR.
MAIN ST.
GREENFIELD AVE.
HAVELOCK ST.
CONCORD ST. N
HARVEY ST.
HWY 417 WBL
HWY 417 EBL
ROAD PROTECTION
E-N/S RAMP
HAWTHORNE AVE.
REMOVE COMMERCIAL BUSINESSES
GRAHAM AVE.
LEES AVE.
CONCORD ST. S



Solutions de conception pr liminaire
Pont du canal Rideau

Les sc narios retenus pour le pont du canal Rideau incluent sa r fection ou son remplacement en tant que strat gies de gestion des ponts.

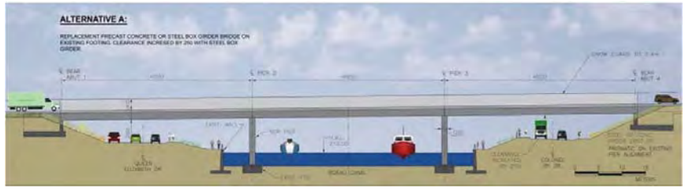
Les **solutions de conception pr liminaire** envisag es sont les suivantes :

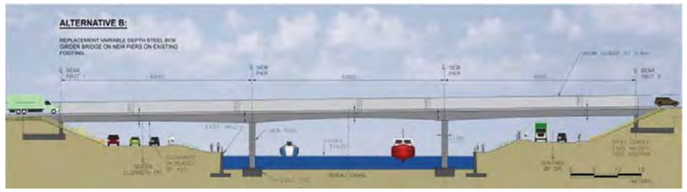
- **Solution A** : remplacement – pont poutres sur les piliers existants
- **Solution B** : remplacement – pont poutres sur de nouveaux piliers
- **Solution C** : remplacement – pont extradoss en b ton sur de nouveaux piliers
- **Solution D** : remplacement – pont poutres sur de nouveaux piliers derri re les murs du canal
- **Solution E** : remplacement – pont trav e unique
- **Solution F** : r fection conventionnelle

Diff rentes aires d assemblage possibles pour le remplacement du pont sont pr sent es sur les panneaux suivants.

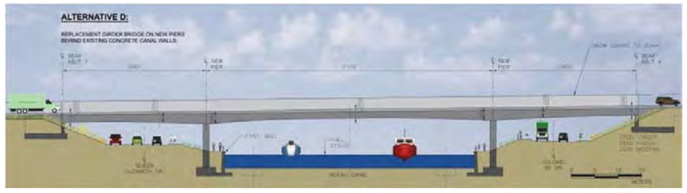
Diff rents plans de gestion de la circulation sont envisag s pour le remplacement de pont conventionnel (sur place) et rapide (fermeture de l autoroute) et sont pr sent s sur les panneaux suivants.

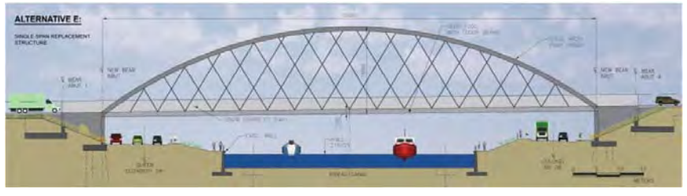
Pont du canal Rideau
Illustration des solutions possibles









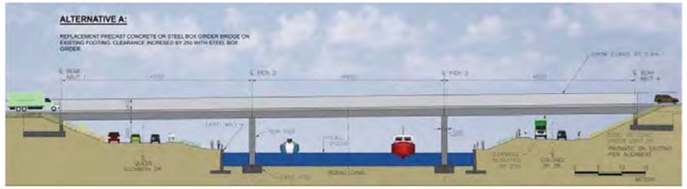


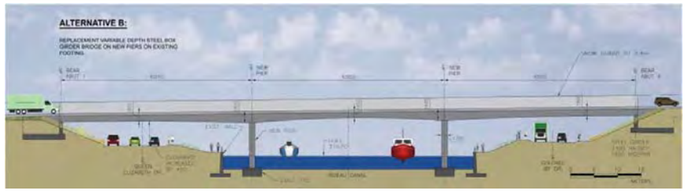
Solutions non retenues : C et E

- Flexibilit r duite pour le MTO
- impacts visuels importants d'une superstructure lev e (diminution de l'attrait visuel du canal)
- Diminution de la s curit sur l'autoroute en raison du r tr cissement du terre-plein, co t sup rieur (50 M$) et obligation de remplacer cinq ponts voisins.

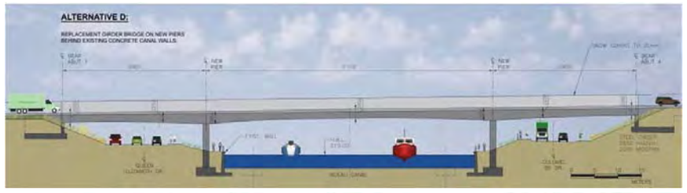
La note technique sur l'évaluation préliminaire des solutions de conception pour le pont du canal Rideau est disponible à la table de documentation.

Pont du canal Rideau
Illustration des solutions possibles











Solutions non retenues : C et E

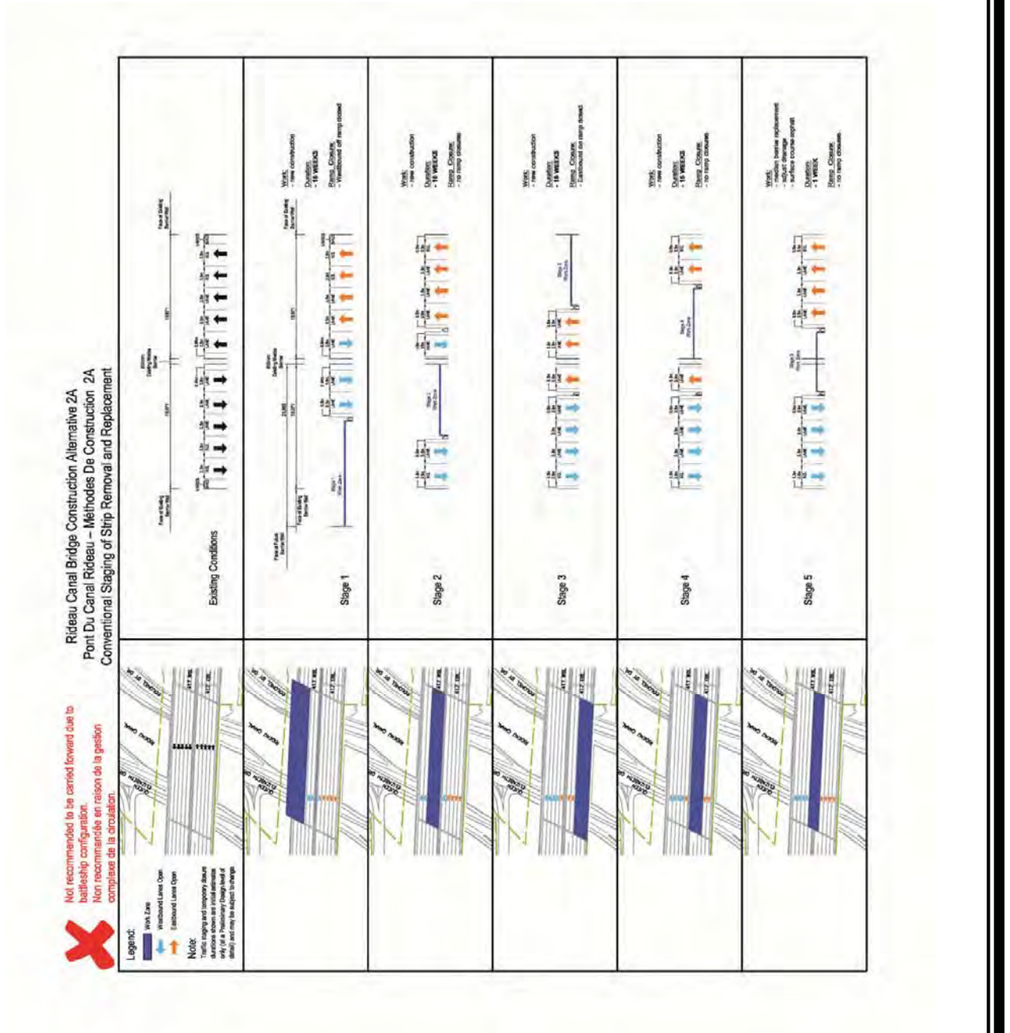
- Flexibilit r duite pour le MTO
- impacts visuels importants d'une superstructure lev e (diminution de l'attrait visuel du canal)
- Diminution de la s curit sur l'autoroute en raison du r tr cissement du terre-plein, co t sup rieur (50 M$) et obligation de remplacer cinq ponts voisins.

La note technique sur l'évaluation préliminaire des solutions de conception pour le pont du canal Rideau est disponible à la table de documentation.

Pont du canal Rideau – M thodes de construction

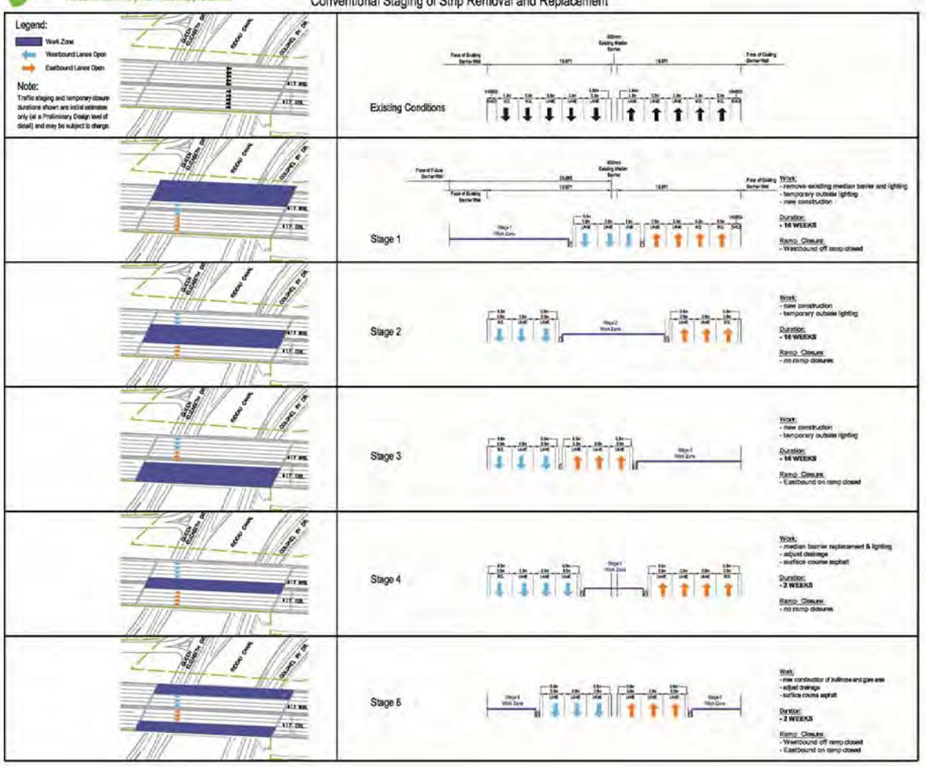
- X **M thode 1 :** utilisation de barges pour le retrait et la mise en place de la superstructure partir d'une aire d assemblage loign e. Construction conventionnelle par bandes. Non recommand e en raison des contraintes du canal.
- X **M thode 2A :** construction conventionnelle par bandes.
- ✓ **M thode 2B :** construction conventionnelle par bandes permettant la circulation routi re sur le joint entre les ponts. Recommand e pour tude approfondie.
- ✓ **M thode 2C :** construction conventionnelle par bandes avec travaux additionnels compl t s avant construction. Recommand e pour tude approfondie.
- X **M thode 3A :** remplacement rapide de la structure enti re l'aide de transporteurs modulaires autopropuls s (TMA) partir des aires d assemblage. Non recommand e (impacts majeurs sur les propri t s et sur la circulation).
- X **M thode 3B :** remplacement rapide en trois sections distinctes pour chaque structure l'aide de TMA partir des aires d assemblage. Non recommand e (impacts majeurs sur les propri t s et sur la circulation).
- X **M thode 3C :** remplacement rapide en trois sections distinctes pour chaque structure l'aide de TMA partir des aires d assemblage et du parc Ballantyne. Non recommand (impacts majeurs sur les propri t s et sur la circulation).
- X **M thode 3D :** remplacement rapide en trois sections distinctes pour chaque structure l'aide de TMA partir des aires d assemblage et du parc Ballantyne. Non recommand (impacts majeurs sur les propri t s et sur la circulation).
- ✓ **M thode 4 :** d mant lement sur place, puis soul vement et glissement partir des bords (remplacement de deux ponts la m me fin de semaine).
- ✓ **M thode 5 :** retrait s quentiel par soul vement et glissement, un pont la fois (remplacement de deux ponts en deux ans, un pont par ann e).
- ✓ **M thode 6 :** transport par TMA jusqu' la rue Nicholas. Technique innovatrice consistant construire une plateforme sous la structure afin de lever les TMA et les trois trav es une une jusqu' la hauteur de l autoroute. Les TMA emportent les sections de pont jusqu' la rue Nicholas et retournent avec les nouvelles sections. N cessite des piliers de sout nement dans le canal.

La note technique sur l'évaluation préliminaire des méthodes de construction du pont du canal Rideau est disponible à la table de documentation.



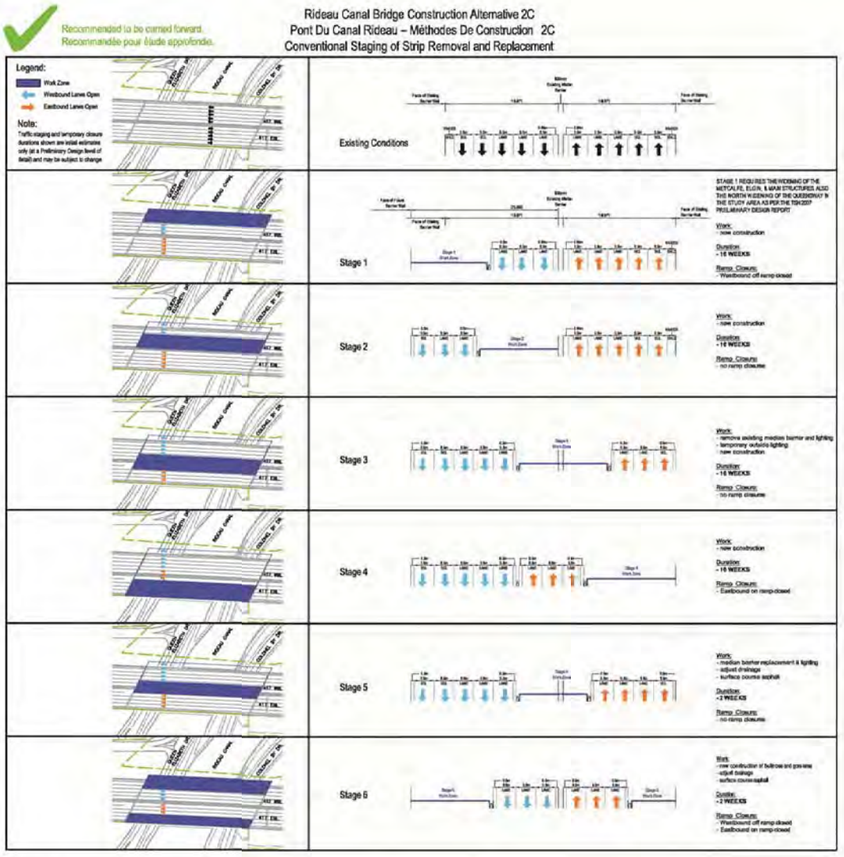
Recommended to be carried forward.
Recommandée pour étude approfondie.

Rideau Canal Bridge Construction Alternative 2B
Pont Du Canal Rideau – Méthodes De Construction 2B
Conventional Staging of Strip Removal and Replacement

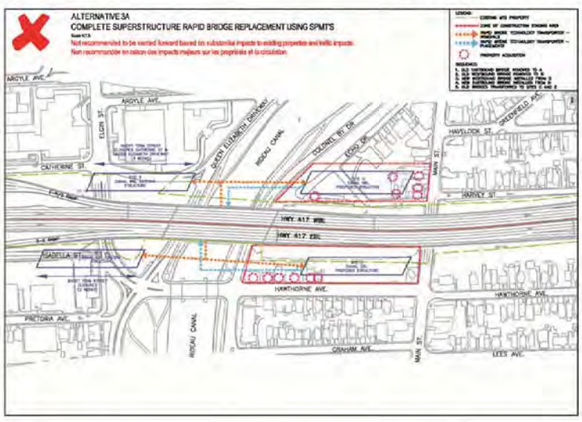


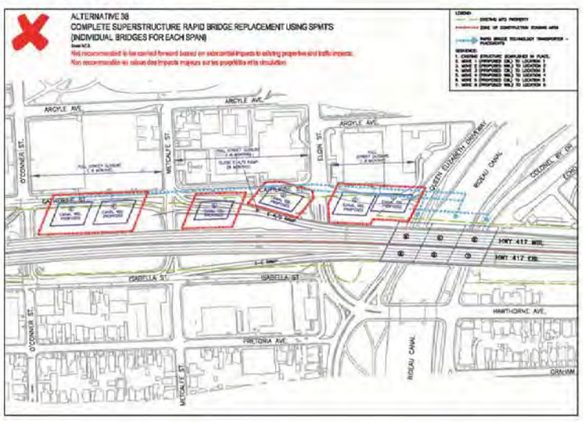
Recommended to be carried forward.
Recommandée pour étude approfondie.

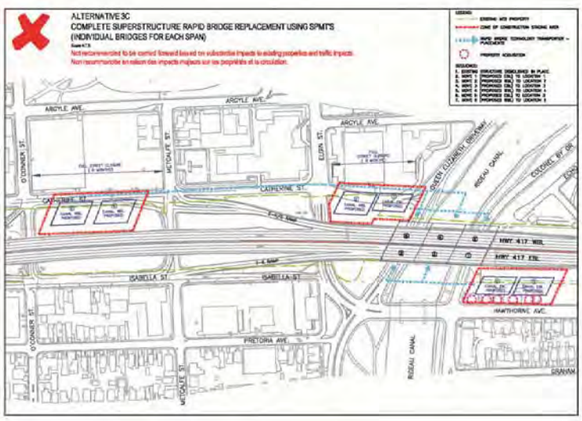
Rideau Canal Bridge Construction Alternative 2C
Pont Du Canal Rideau – Méthodes De Construction 2C
Conventional Staging of Strip Removal and Replacement

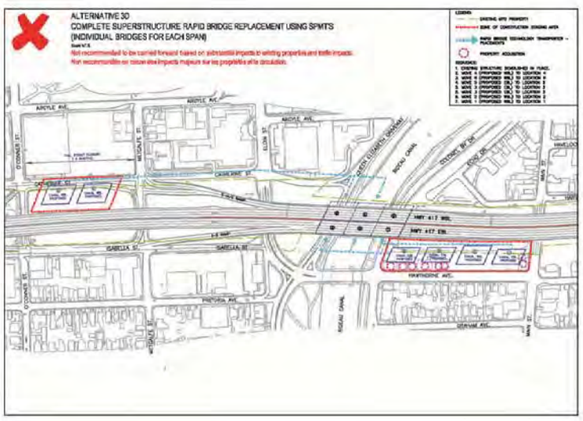


Rideau Canal Bridge Construction Alternative 3A, 3B, 3C and 3D
Pont Du Canal Rideau – Méthodes De Construction 3A, 3B, 3C and 3D

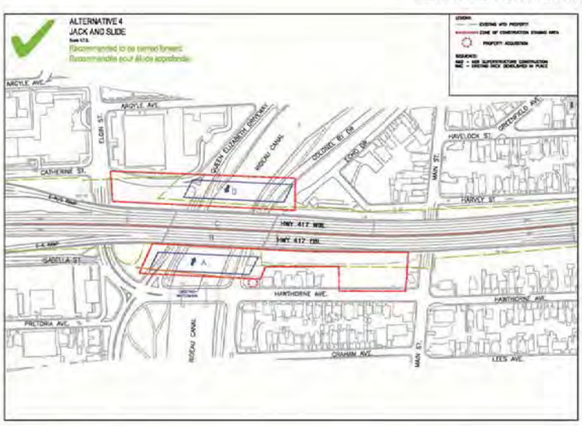


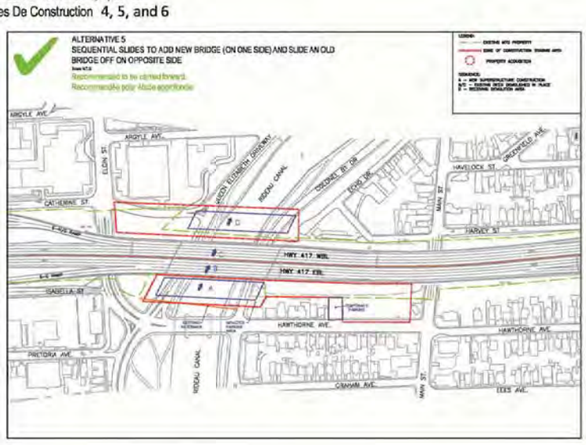


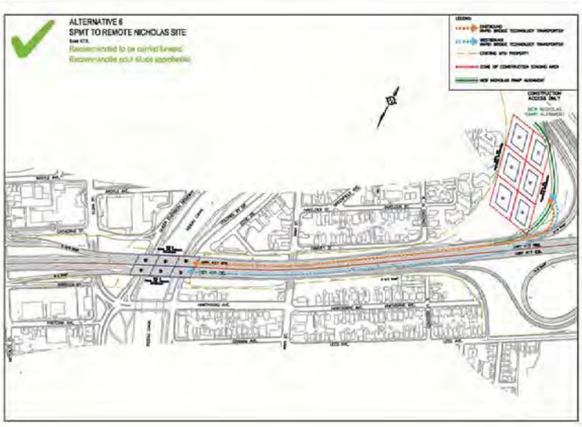




Rideau Canal Bridge Construction Alternative 4, 5, and 6
Pont Du Canal Rideau – Méthodes De Construction 4, 5, and 6









valuation des solutions

Les solutions suivantes seront compar s et pr sent s lors de la 2e SIP :

Solutions pour les ponts cadre rigide :

- ✓ • R fection rapide
- ✓ • R fection conventionnelle
- ✓ • Remplacement rapide
- ✓ • Remplacement conventionnel

Solutions pour le pont du canal Rideau :

- ✓ • Solution A : remplacement, pont poutres sur les piliers existants
- ✓ • Solution B : remplacement, pont poutres sur de nouveaux piliers
- X • Solution C : remplacement, pont extradoss en b ton sur de nouveaux piliers
- ✓ • Solution D : remplacement, pont poutres sur de nouveaux piliers
- X • Solution E : remplacement, pont trav e unique
- ✓ • Solution F : r fection conventionnelle (solution retenue comme r f rence)

M thodes de construction sur le canal Rideau :

- X • M thode 1 : retrait avec barges
- X • M thode 2A : construction conventionnelle par bandes
- ✓ • M thode 2B : construction conventionnelle par bandes
- ✓ • M thode 2C : construction conventionnelle par bandes
- X • M thode 3A : remplacement rapide avec TMA (structure enti re)
- X • M thode 3B : remplacement rapide avec TMA (par sections)
- X • M thode 3C : remplacement rapide avec TMA (par sections)
- X • M thode 3D : remplacement rapide avec TMA (par sections)
- ✓ • M thode 4 : soul vement et glissement, 2 ponts en une fin de semaine
- ✓ • M thode 5 : soul vement et glissement, un pont par ann e
- ✓ • M thode 6 : transport par TMA jusqu' Nicholas

Crit res de l’ valuation pr liminaire

Les crit res d’ valuation suivants peuvent tre utilis s pour valuer les diff rentes Solutions de conception pr sent es dans les planches pr c dentes.

Transport

- coulement de la circulation (retards pour les automobilistes)
- Risques de collision
- D tours (transport en commun, pi tons, cyclistes et automobilistes)
- Dur e des travaux

Environnement naturel

- Perte de v g tation
- Perturbation du milieu aquatique

Environnement socio conomique

- Services d’urgence
- impacts temporaires sur les commerces (perte de places de stationnement)
- Expropriation de commerces
- Bruit ambiant et qualit de l’air
- Tourisme et v nements
- Terrains contamin s

Environnement culturel

- Impacts sur un site du patrimoine mondial de l’UNESCO (canal Rideau)
- Vues patrimoniales et paysages culturels
- Richesses patrimoniales
- Potentiel arch ologique

Propri t s et am nagement

- Propri t s touch es

Co t

- Co t d’immobilisation
- Co t d’exploitation et d’entretien

Calendrier du projet – Prochaines tapes

Apr s la r union de ce soir, nous allons :

- Analyser tous les commentaires apr s la 1re s ance d’information publique (SIP)
- valuer les solutions
- Organiser la 2e SIP (printemps 2018)
- Analyser tous les commentaires apr s la 2e SIP
- Finaliser les plans recommand s
- Pr parer le Rapport d’ tude environnementale sur les transports (REET)
- Publier l’Avis d’ach vement de l’ tude dans les journaux
- Accorder une p riode d’examen public de 30 jours du REET
- Obtenir les autorisations n cessaires en mati re d’environnement

Comment rester au fait de l’ tude?

- Demandez de faire ajouter votre nom et adresse lectronique la liste de diffusion
- Compl tez et remettez une feuille de commentaires
- Communiquez en tout temps avec les repr sentants du MTO ou de la firme d’ing nierie-conseil
- Consultez le site web du projet, **www.queenswaydowntownbridges.com**

Nos repr sentants sur place peuvent vous aider avec les activit s ci-dessus.

Merci de votre participation la s ance d’information publique de ce soir. Nous appr cions et valorisons votre participation l’ tude. Veuillez remettre votre feuille de commentaires remplie d’ici le **19 d cembre 2017**. Tous les renseignements sont recueillis et utilis s en conformit avec la Loi sur les valuations environnementales et la *oi s r l acc s l information et la rotection de la vie riv e*

Appendix C
Comment Sheets



Comment Sheet
Public Information Centre (PIC) No. 1
Tuesday, December 5, 2017

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street
Group Work Project No. 4170-13-00

Thank you for attending tonight's public meeting. Please provide your comments on any of the material presented.

1. Please please do coordinate with City of Ottawa planning, if for no other reason but toget the present plans right. For example Main Street is NOT a major Collector but a complete Street essentially functioning as one law in ea. direction, and harboring cycle paths & sidewalks.
2. Adding lanes to 417 at the bridge locations is most ill advised. What we really need is a South Ottawa By-pass!

(Please turn over if additional space is required.)

Please complete your comment sheet this evening and place in the comment box provided OR send your completed comment sheet by **December 22, 2017** to:

Steve Taylor, P.Eng.
BT Engineering Inc.
100 Craig Henry Drive, Suite 201
Ottawa, Ontario K2G 5W3
Tel: (613) 228-4813 Fax: (613) 280-1305
steven.taylor@bteng.ca

Dave Lindensmith, P. Eng.
Senior Project Engineer
Ministry of Transportation
1355 John Counter Boulevard
Kingston, Ontario K7L 5A3
Tel.: (613) 540-5130 Fax: (613) 540-5106
dave.lindensmith@ontario.ca

Personal information contained on this form is collected under the authority of Section 29(2) of the Municipal Freedom of Information and Protection of Privacy Act, R.S.O. 1990, c.M.56 as amended. Any comments received will be collected under the Act and, with the exception of personal information, will become part of the public record.

[redacted]

Please check a box if you would like to be added to our mailing list to be informed of the publication of the TESR/PDR. ☐ mailing address ☒ email

Public Information Centre (PIC) No. 1
Tuesday, December 5, 2017

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street Group Work Project No. 4170-13-00

2. Cont'd
I understand that a by-pass was proposed south of Hunt Club Road in the late 90's but not carried forward.
Surely its time has come. This would limit this to bridge replacement and avoid more vehicle intrusion into the inner city fabric.
No one seems to think about the through-traffic (trucks especially) using the present 417 to an-town (part of the 170,000 vehicles a day).
Why not eliminate that (some 40,000 vehicles) and save our valuable urban space.

QUEENSWAY DOWNTOWN BRIDGES OTTAWA

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Tuesday, December 5, 2017

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street Group Work Project No. 4170-13-00

Thank you for attending tonight's public meeting. Please provide your comments on any of the material presented.

- Very comprehensive info. Almost too much for general public. However, I guess we need all the info.
- Very helpful explanation of project from 30,000 ft up from Mr. Taylor. Thanks.

(Please turn over if additional space is required.)

Please complete your comment sheet this evening and place in the comment box provided OR send your completed comment sheet by **December 22, 2017** to:

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100 Craig Henry Drive, Suite 201
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Group Work Project No. 4170-13-00

Thank you for attending tonight's public meeting. Please provide your comments on any of the material presented.

A very comprehensive review of the alternative approaches by Steven – Thank you!

(Please turn over if additional space is required.)

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[redacted]

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Group Work Project No. 4170-13-00

Thank you for attending tonight's public meeting. Please provide your comments on any of the material presented.

re: Royal Oak - this is a community meeting place - used for meetings, get togethers after community meetings - We wouldn't like that anything too "New" should replace it. Also Garden Construction building needs to be saved, and I quite like the little building between it and the 417.

If Ballentyne Pk is used for construction, please replace all trees with the largest and most diverse possible.

(Please turn over if additional space is required.)

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[redacted]

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Tuesday, December 5, 2017

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street
Group Work Project No. 4170-13-00

Thank you for attending tonight's public meeting. Please provide your comments on any of the material presented.

The issue of greatest concern to us is the future look of the Rideau Canal Bridge. I think this is a great opportunity to improve the current view of the Canal and put in a bridge that fits in well with the Canal & the Pretoria Bridge. I think that Alternative 2 is most likely to achieve this.

(Please turn over if additional space is required.)

Please complete your comment sheet this evening and place in the comment box provided OR send your completed comment sheet by **December 22, 2017** to:

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BT Engineering Inc.
100 Craig Henry Drive, Suite 201
Ottawa, Ontario K2G 5W3
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[redacted]

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Request to be added to the mailing list

(Please turn over if additional space is required.)

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[redacted]

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7

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Tuesday, December 5, 2017

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street
Group Work Project No. 4170-13-00

Thank you for attending tonight's public meeting. Please provide your comments on any of the material presented.

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[redacted]

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8

From: [redacted]
Sent: December 6, 2017 2:38 PM
To: steven.taylor@bteng.ca
Subject: Queensway Downtown Bridges Study

Hello Mr. Taylor,

I am writing to ask that the Queensway Downtown Bridges study consider increasing the width of the Elgin Street overpass. There is a strong desire to provide cycling lanes on Elgin Street, but it is not currently possible due to the limited width of the overpass. It appears that a conventional replacement method should allow the width of the street to be increased to allow for cycling lanes.

Regarding the canal overpass, I strongly believe that the bridge piers should be removed from the canal.

Cheers,

[redacted]

1

9 **From:** [redacted]
Sent: December 22, 2017 11:43 AM
To: Steve Taylor (steven.taylor@bteng.ca); dave.lindensmith@ontario.ca
Subject: Follow up to PIC No. 1 for Queensway Downtown Bridges

These projects will be in a sensitive area. I believe the design criteria should include consideration of the impact of the structures on the surroundings – in addition to those of interest to the NCC.

For example – what kind of environment is created by the spaces below the bridges.

The current situation is poor – and the project is an opportunity to make a very significant improvement – with a very small additional cost.

[redacted]



10 **From:** [redacted]
Sent: December 22, 2017 9:13 PM
To: Steve Taylor
Cc: dave.lindensmith@ontario.ca
Subject: Re: GWP 4170-13-00 RE: Follow up to PIC No. 1 for Queensway Downtown Bridges

I was thinking as well of all the other bridges. Metcalfe. O'Connor Kent. I have no doubt that the NCC and Parks will insist on something good at the canal. I am less convinced that the province has any interest in the rest of the Queensway environs. (For example - is there any actual practical requirement for the chain link fences along Catherine and Isabella? Getting rid of them would be a great first step.)

Thanks for your note and for including me in the conversation. Look forward to seeing what next.

[redacted]

On Dec 22, 2017, at 3:46 PM, Steve Taylor <steven.taylor@bteng.ca> wrote:

Thanks for the comment [redacted] It will be included in our record of consultation.

As part of the assignment we will include a review of context sensitive design for the preferred alternative. This will be known later in 2018. I assure you this will include consideration for the surrounding areas of the canal bridge.
Have a Merry Christmas. Talk in 2018.
Steve

<image004.jpg>
Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
President
100 Craig Henry Drive, Suite 201
Ottawa, Ont. K2G 5W3
E-Mail: steven.taylor@bteng.ca
Phone: 613-228-4813
FAX: 1-613-280-1305
Toll Free: 1-855-228-4813
www.bteng.ca

From: [redacted]
Sent: December 22, 2017 11:43 AM
To: Steve Taylor (steven.taylor@bteng.ca); dave.lindensmith@ontario.ca
Subject: Follow up to PIC No. 1 for Queensway Downtown Bridges

These projects will be in a sensitive area. I believe the design criteria should include consideration of the impact of the structures on the surroundings – in addition to those of interest to the NCC.

For example – what kind of environment is created by the spaces below the bridges.

The current situation is poor – and the project is an opportunity to make a very significant improvement – with a very small additional cost.

[redacted] image005.png> <image006.png> <image007.png>

Darcie Dillon

From: Katherine Scott <katherine.scott@bteng.ca>
Sent: December 11, 2017 8:02 AM
To: [redacted]
Cc: Lindensmith Dave (MTO); Steve Taylor; [redacted]; Darcie Dillon
Subject: Re: Queensway downtown bridges

Good morning [redacted]

The PIC exhibits are available at the following link: http://queenswaydowntownbridges.com/wp-content/uploads/2017/07/GWP4170-13-00-17-010-PIC-1-EN-Exhibits-Dec-6-17-QC.pdf

A link to the exhibits is also available at the bottom of the 'Public Consultation' page on the website.

Let me know if you have any additional questions.

Thanks

BT ENGINEERING
Katherine Scott, EIT
[redacted]
www.bteng.ca

On Sun, Dec 10, 2017 at 9:53 PM, Steve Taylor <steven.taylor@bteng.ca> wrote:

[redacted]

I am asking Katherine to confirm that the PIC exhibits are posted on the web site.

Steve

BT ENGINEERING
Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.

Darcie Dillon

From: Katherine Scott <katherine.scott@bteng.ca>
Sent: December 11, 2017 8:01 AM
To: [redacted]
Cc: Darcie Dillon; Steve Taylor
Subject: Re: PIC info - downtown 417 bridges

Good morning [redacted]

The PIC exhibits are available at the following link: http://queenswaydowntownbridges.com/wp-content/uploads/2017/07/GWP4170-13-00-17-010-PIC-1-EN-Exhibits-Dec-6-17-QC.pdf

A link to the exhibits is also available at the bottom of the 'Public Consultation' page on the website.

Let me know if you have any additional questions.

Thanks,

Katherine

BT ENGINEERING
Katherine Scott, EIT
25 Base Line Road West, Unit 11A
London, ON N6J 1V1
E-Mail: katherine.scott@bteng.ca
Phone: 519-672-2222
www.bteng.ca

On Sun, Dec 10, 2017 at 10:29 PM, Steve Taylor <steven.taylor@bteng.ca> wrote:

[redacted]

I am asking Katherine to confirm if and when they will be available.

Steve

BT ENGINEERING
Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.

President

100 Craig Henry Drive, Suite 201

Ottawa, Ont. K2G 5W3

E-Mail: steven.taylor@bteng.ca

Phone: 613-228-4813

FAX: 1-613-280-1305

Toll Free: 1-855-228-4813

www.bteng.ca

From: [redacted]
Sent: December 10, 2017 12:06 PM
To: steven.taylor@bteng.ca
Cc: Lindensmith Dave (MTO); [redacted]
Subject: Queensway downtown bridges

Good afternoon Mr. Taylor

Following up on our discussion at the PIC on December 5, could you please let me know when the materials presented will be available on the internet?

Cheers

[redacted]

President

100 Craig Henry Drive, Suite 201

Ottawa, Ont. K2G 5W3

E-Mail: steven.taylor@bteng.ca

Phone: 613-228-4813

FAX: 1-613-280-1305

Toll Free: 1-855-228-4813

www.bteng.ca

From: [redacted]
Sent: December 8, 2017 8:34 AM
To: steven.taylor@bteng.ca
Subject: PIC info - downtown 417 bridges

I looked on http://queenswaydowntownbridges.com/en_CA/latest-news/study-design/ but couldn't find the information that was displayed at this week's open house - has it been posted yet?

We met at the end of the Tuesday session.

[redacted]

Appendix A-3

Public Information Centre No. 2 Summary Report

BT ENGINEERING

Ottawa Queensway Downtown Bridges Preliminary Design and Environmental Assessment Study for Rehabilitation/Replacement GWP 4170-13-00

PIC No. 2 Summary Report

May 31, 2019

BT Eng Project 17-010

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Appendices

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Appendix C Comment Sheets

1.0 Introduction

The Ministry of Transportation (MTO) initiated this Class Environmental Assessment (EA) in the summer of 2017 for the rehabilitation or replacement of 7 bridges on the Queensway from Metcalfe Street easterly to Main Street. The 7 bridges include 4 locations at Metcalfe Street, Elgin Street, Rideau Canal (including crossings of Queen Elizabeth Drive and Colonel By Drive) and Main Street.

This EA Study will complete all phases of the Provincial Transportation Facilities Class EA (MTO Class EA) for a Group B EA and Preliminary Design project by establishing the need and justification for the project, considering all alternatives and proactively involving the public in defining an EA and Preliminary Design recommended plan for improvements.

At the completion of the Group B EA and Preliminary Design project, a Transportation Environmental Study Report (TESR) will be prepared for a 30-day public review.

The project location is shown in **Figure 1** and the study area is shown in **Figure 2**.

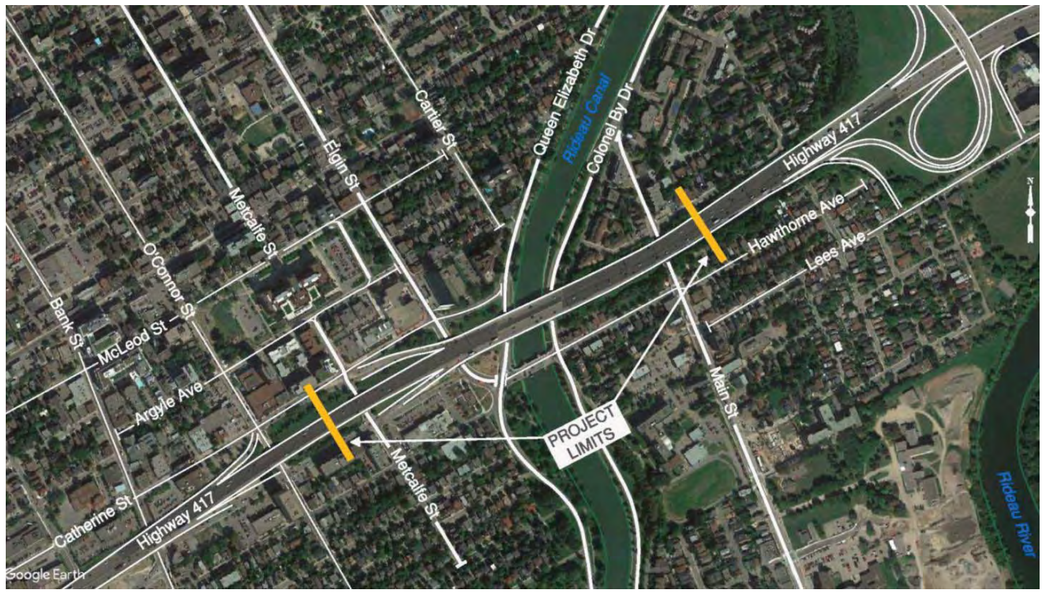


Figure 1: Project Location

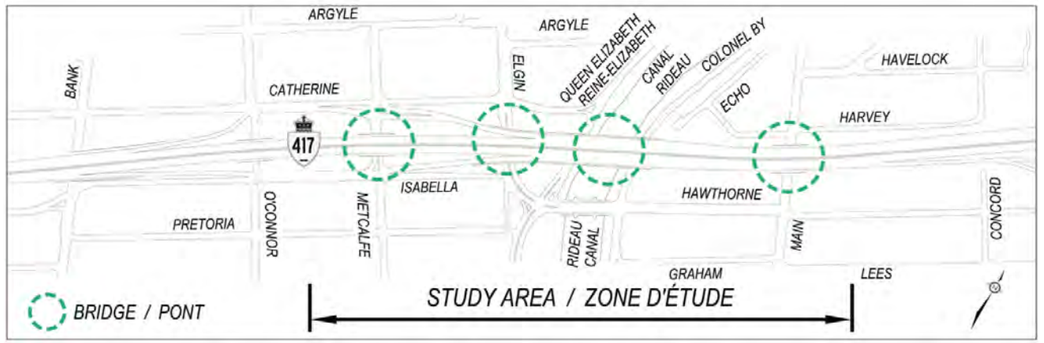


Figure 2: Study Area

The second Public Information Centre (PIC) for this project was held on:

Wednesday, April 24, 2019
at
Saint Paul University, Guigues Building
223 Main Street, Ground Floor
Ottawa, Ontario
3:00 pm to 4:00 pm (Agencies and Municipalities staff)
4:00 pm to 8:00 pm (Public and Stakeholders)

The PIC included presenting the following in bilingual format:

- Project overview and Study Area;
- EA Process and Schedule;
- Project goals and the Problem and Opportunity Statement;
- Consultation to date;
- Assessment of Alternative Planning Solutions;
- Preliminary Design Alternatives (Alternative Methods) including bridge management strategy, staging sites, construction methodology and traffic staging;
- Analysis Evaluation of Preliminary Design Alternatives;
- Technically Preferred Alternatives (TPA's) and refinements;
- Noise assessment;
- Statement of Flexibility;
- Effects and Mitigation; and
- Next Steps

MTO and consultant representatives (including bilingual representatives) were available to respond to any inquiries.

All members of the public and interest groups were invited to the second PIC to view the presentation material and to discuss the project with the MTO and consultant representatives.

Thirty-two (32) people registered at the PIC. Each person was encouraged to provide a written comment regarding any issues or concerns.

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of
Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street
GWP 4170-13-00
PIC No. 2 Summary Report

2.0 Public and Agency Consultation

One of the key aspects of the project is to provide the public, interested parties, affected agencies and municipalities with the opportunity for input. In order to ensure this objective is met, a public and agency notification program was undertaken. The program includes a number of communication mechanisms, discussed in the following sections. The Study Design Report was finalized following the first PIC and was available on the project website and at the PIC.

2.1 Newspaper Notice and Flyers

Notice of the second PIC was placed in The Ottawa Citizen (in English) on Tuesday, April 9, 2019 and Le Droit (in French) on Tuesday, April 9, 2019.

Flyers, in English and French and identical to the notices, were hand delivered to over 500 public residents within the Study Area on April 10, 2019, see **Figure 3**.

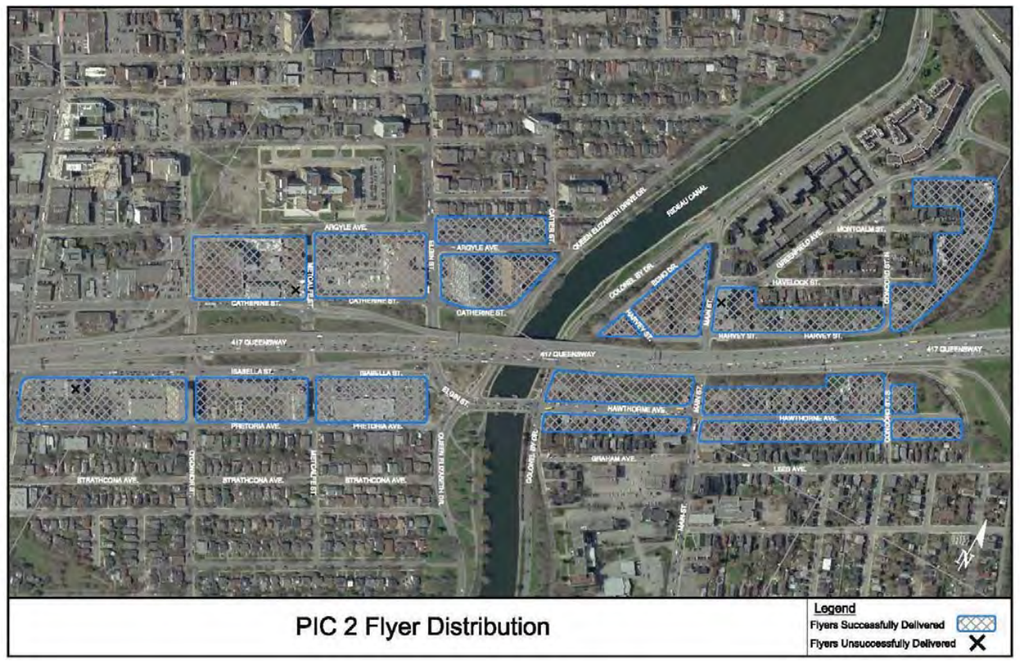


Figure 3: Flyer Distribution Map

The newspaper notices, flyers and select notification letters are in **Appendix A**.

2.2 Agency and Stakeholder Contacts

The following agencies were invited to attend the PIC by mail and e-mail:

- Aboriginal Affairs and Northern Development Canada
- Canadian Environmental Assessment Agency Ontario Region
- Public Works
- Transport Canada / Navigable Waters Protection Program
- Ministry of Agriculture, Food and Rural Affairs
- Ministry of Environment, Conservation and Parks (Ottawa District)
- Ministry of Indigenous Relations and Reconciliation
- Ministry of Natural Resources and Forestry
- Ministry of Environment, Conservation and Parks (Eastern Region)
- Ministry of Community and Social Services – Eastern Region
- Ministry of Innovation, Science and Economic Development Canada
- Ministry of Municipal Affairs and Housing
- Ministry of Tourism, Culture and Sport
- Ministry of Tourism, Culture and Sport, Ottawa Built Heritage Sub-Committee
- Rideau Valley Conservation Authority
- National Capital Commission (NCC)
- Parks Canada
- Ontario Provincial Police (Ottawa Detachment)
- City of Ottawa
- Conseil Des Écoles Catholiques De Langue Française Du Centre Est - Consortium de transport scolaire d'Ottawa
- Conseil Des Écoles Publiques De L'Est De L'Ontario
- Ottawa-Carleton District School Board and Catholic School Board / Ottawa Student Transportation Authority
- Ottawa-Carleton District School Board and Catholic School Board / Ottawa Student Transportation Authority
- Allstream
- Bell
- Enbridge Gas Distribution
- Hydro One Distribution
- Hydro One Transmission
- Hydro Ottawa
- Rogers Communications
- Capital Railway (O-Train)
- CP Rail
- CAA Ontario
- Ontario Trucking Association
- Dow's Lake Residents' Association
- Ottawa Bicycle Club
- Rideau River Residence Association
- Sustainable Living Ottawa East
- Invest Ottawa
- Ontario East Economic Development Commission
- Ottawa Chamber of Commerce
- Ottawa Real Estate Board
- Ottawa Tourism
- Transport Action Ontario
- Share the Road
- Vision Zero Canada
- Transportation Options
- Healthy Transportation Coalition
- ACORN Ottawa
- Action Sandy Hill
- Bank Street BIA
- Centretown Citizens' Community Association
- Citizens for Safe Cycling
- City Centre Coalition

- Community Activities Group of Old Ottawa East
- Dalhousie Community Association
- Downtown Rideau BIA
- Ecology Ottawa
- Envirocentre Ottawa
- Federation of Citizens' Associations of Ottawa-Carleton
- Glebe Annex Community Association
- Glebe BIA
- Glebe Community Association
- Glebe Report
- Lowertown Community Association
- Mainstreeter
- Old Ottawa South Community Association
- Ottawa East Community Association
- Ottawa Riverkeeper
- Preston Street BIA
- Somerset Street Chinatown BIA
- Somerset Village BIA
- The Centretown BUZZ
- Walk Ottawa
- GRC Architect

Notification of the PIC was communicated to most directly affected residents by newspaper notice and flyer, directly impacted local business owners by letter and advance meetings, local municipalities by letter/e-mail, Members of Provincial Parliament by letter, and external agencies and interested groups by letter/e-mail.

2.3 Indigenous Peoples

Individual letters were sent to the following Indigenous Peoples in the vicinity of the Study Area, inviting them to attend the meeting:

- Bonnechere Algonquins First Nation
- Chippewas of Georgina Island
- Mississaugas of the New Credit First Nation
- Mississaugas of Scugog Island First Nation
- Beausoleil First Nation
- Alderville First Nation
- Curve Lake First Nation
- Williams Treaty First Nation
- Algonquins of Pikwakanagan
- Algonquins of Ontario
- Kinounchepinini Algonquin First Nation
- Kijicho Manito Madaouskarin – Anishinaabe Baptiste
- Algonquins of Greater Golden Lake First Nation
- Mattawa / North Bay Algonquin First Nation
- Shabot Obaadjiwan First Nation
- Snimikobi Algonquin First Nation
- Whitney and Area Algonquin Community
- Hiawatha First Nation
- Moose Deer Point First Nation
- Ottawa Region Métis Council
- Métis Nation of Ontario

2.4 Elected Officials

The following Members of Provincial Parliament were invited to the PIC:

- Hon. Nathalie Des Rosiers (MPP for Ottawa-Vanier)
- Joel Harden (MPP for Ottawa Centre)

- Jeremy Roberts (MPP for Ottawa West-Nepean)
- John Fraser (MPP for Ottawa South)

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street
GWP 4170-13-00
PIC No. 2 Summary Report

3.0 PIC Comments

Thirty-three (33) display panels/boards were set up around the perimeter of the room, in both English and French, to be viewed at leisure, as well as two videos. The first video showed a “fly around” of the Technically Preferred Alternative for the Rideau Canal, illustrating the new bridge from various viewpoints including: from the canal; from the NCC pathways and parkways; from above; and while driving on the Queensway. The second video demonstrated a jack and slide bridge replacement on the Cayuga River over the time of the move. A copy of the PIC No. 2 presentation boards is provided in **Appendix B**.

Seven (7) comment sheets were received at the PIC. Three (3) emails were received during the subsequent 2-week comment period. Copies of the comments, excluding personal information, are provided in **Appendix C**. The results of the comments and discussions are summarized in the following sections.

3.1 Summary of Comments

The results of the comments received and discussions held at PIC No. 2 are summarized below in **Table 1**. The comments have been summarized by general subject matter.

Table 1: Summary of Written Comments
Public Information Centre No. 2
April 24, 2019

Comment	Number of Respondents	Comment Sheet Reference No.
Concern about traffic congestion on detour routes	1	1
Concern for noise during construction	2	1, 10
Would like to see the acquired property turned into park space for public use	1	2
Request for noise policy review for level of noise from the Queensway	1	2
Could have shown video of additional TPA’s	1	3
The notification area could have been expanded to include additional impacted residents within the Study Area	2	3, 7
The noise barrier design should be reviewed	1	4
Request for PIC exhibits to be sent	2	5, 9
Concern for loss of businesses in the community	2	7, 8
If trees are removed they should be replanted with a similar type/size.	1	7
Concern for damage to property during construction due to vibrations and large equipment.	1	10
Return Ballantyne Park for park use after construction	1	10

Additional verbal comments included:

- How long until construction of the bridges begins?
- How long will municipal streets, the Rideau Canal and NCC parkways be closed?
- Interest in the widening of Queensway eastbound from Main Street easterly.
- Length of detour routes for pedestrians and cyclists.

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of
Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street
GWP 4170-13-00
PIC No. 2 Summary Report

4.0 Next Steps

Following the second PIC, all comments will be reviewed and refinements may be made to the TPAs, based on these comments. The Recommended Plan will be finalized and presented in the Transportation Environmental Study Report (TESR), which will be available for a 30-day public review period.

The final Recommended Plans will be presented to the City of Ottawa Transportation Committee in the fall 2019.

If no bump-ups are received by the Minister of the Environment, Conservation and Parks, the study will receive environmental clearance and the project will proceed to detail design and construction.

Appendix A
Newspaper Notices, Flyers and Letters

Newspaper Notices

Measles can be 'very devastating' to kids: pediatrician

Retired doctor recounts how illness ravaged city in his early years of practice

ELIZABETH PAYNE

Dr. Barry Adams still remembers a late-night house call to a home in Hull where a three-year-old girl had a high fever. Adams quickly diagnosed the girl with measles, which was endemic in those days.

He tried to make her more comfortable and to cool her down. Just as he was preparing to leave, the mother, who lived alone with her daughter, had a seizure. Adams remained at the home until 3 a.m. watching over both of them and waiting until the mother was able to care for her sick child.

To anyone who has never experienced it, red measles is a disease like no other. Adams, 85, saw plenty of it during 49 years as a pediatrician in Ottawa.

"Measles is 10 times worse than the flu," he said. "Children are very sick with it. You can just see in their eyes that they are suffering."

When he started in medicine, in 1965, measles was common. Adams would see four to five cases a week in his office between September and April. Those children had some of the highest fevers he ever saw in his practice.

Most children were sick for a week to 10 days with high fever, bright red rash and respiratory symptoms, before recovering. They stayed home until the rash faded, usually a week to 10 days. In some cases, they developed complications, including viral pneumonia and encephalitis, which could lead to disability and even death. Between two and three patients out of 1,000 died.

Adams treated patients with serious complications from measles, "but thank God, they recovered."

By the time he hung up his stethoscope in 2015, measles had been vanquished in Canada thanks to highly effective childhood vaccines. For the last 20 years of his practice, Adams never saw a case.

More than two decades after endemic measles was eradicated in Canada, outbreaks are once again occurring, in part because of vaccine hesitancy. Ottawa Public Health has confirmed two unrelated cases in recent days. Both patients are adults who became infected while travelling.

To health professionals like Adams, who know what measles can do, it is shocking to see the illness return.

"People don't realize it is very devastating to children."

WHY ARE WE SEEING CASES IN OTTAWA?

Ottawa Public Health confirmed one case late last week and a second case on Sunday night. Both of the people infected are adults and both had travelled internationally. The cases are not related.

Measles deaths were reduced dramatically around the world up to 2017, thanks to vaccines. But cases have been on the rise since then, alarming global health officials. Cases rose by more than 48 per cent worldwide between 2017 and 2018 with 10 countries, including France, the Philippines and Brazil, accounting for almost three-quarters of the cases.

With travel common, more people are exposed to measles, which can hang in the air for up to two hours after an infected person has left a room and is considered among the most contagious diseases.

The Ottawa cases are two of five in Ontario since the beginning of the year. There has been a larger outbreak in British Columbia and several other cases across the country.

NOT JUST VACCINE HESITANT VULNERABLE

Even with relatively high vaccination rates, some people are vulnerable to infection. They include children under one who have not yet been vaccinated, people with compromised immune systems and the vaccine hesitant — those who have not been vaccinated.

The first measles, mumps and rubella (MMR) vaccine is not usually administered until a child is 12 months old, but can be given as early as six months if families are travelling.

There is another group that public health officials are focusing on: the inadvertently under-vaccinated. These include people who think they were vaccinated but were not, as well as people who have had one vaccine but not a booster.

"A lot of adults have a loose understanding of the vaccination history," said Dr. Sarah Wilson from Public Health Ontario.

People who are uncertain of their immunization status, she said, should check with a doctor and get vaccinated before they travel overseas.

People born before 1970 are generally considered immune because measles was common before then, but Wilson said they should still get one dose of MMR vaccine before travelling overseas. Those born after 1970 who are unsure about their vaccination status should receive two doses.

"I think we need to really get the message out that for anyone who is planning a trip outside North America, they need to be vaccinated and speak to their doctor."

In Ottawa, meanwhile, public health officials are dealing with the time-consuming work of contacting hundreds of people who might have been infected in the past few weeks. Health officials have contacted close family members of those infected as well as those in some of the locations the people visited while infected, such as clinics and emergency rooms.

Neither of the cases has spread, although measles has a long incubation period of about 14 days.

Ottawa Public Health also released times and locations during which people might have been exposed to measles.

For the case announced April 7, those locations of potential exposure are:

- March 29, 2019, 2 p.m.–6:30 p.m. Loblaws, 100 McArthur Ave.
- March 29, 2019, 9:15 p.m.–9:25 p.m., OC Transpo bus Route 12, Montreal Road and North River Road to Rideau Street and Sussex Drive.
- March 29, 2019, 9:25 p.m.–9:50 p.m., OC Transpo bus Route 6, Rideau Street and Sussex Drive to Heron Road. and Bank Street.
- March 29, 2019, 10 p.m.–March 30, 2019, 1:30 a.m., O'Brien's Pub and Eatery, 1145 Heron Rd.
- March 30,2019, 4:45 p.m.–8 p.m., Coconut Lagoon Restaurant, 853 St. Laurent Blvd.
- April 1, 2019, 11 a.m.–1:30 p.m. Shoppers Drug Mart and Dynacare Laboratory, 150 Montreal Rd.
- April 2, 2019, 7:30 p.m.–April 3, 2019, 7:45 p.m., The Ottawa Hospital General Campus, emergency department.
- April 3, 2019, 5:45 p.m.–April 4, 2019, 5:30 p.m. The Ottawa Hospital General Campus, 7 West.

For the case announced April 3, the locations of potential exposure are:

- March 26, 2019, 10 a.m.–6 p.m.: 40 Hines Rd. — lobby, elevator or ground floor.
- March 27, 2019, 10 a.m.–3:30 p.m.: 40 Hines Rd. — lobby, elevator or ground floor.
- March 27, 2019, 5:30 p.m.–9 p.m.: Real Canadian Superstore, 760 Eagleson Rd.
- March 27, 2019, 5:30 p.m.–9 p.m.: Ottawa West Medical Centre, 760 Eagleson Rd. 2nd floor.
- March 30, 2019, 1 p.m.–5:45 p.m.: Queensway Carleton Hospital Emergency Department.
- April 2, 2019, 9 a.m.–noon: Queensway Carleton Hospital Ambulatory Care.

Anyone with early symptoms including fever, cough, white spots in the mouth or a rash, should isolate themselves and call before visiting a health provider.

The Ottawa Public Health website at ottawapublichealth.ca has additional information.



Dr. Barry Adams, who treated patients with serious complications from measles, is shocked to see the illness return. *WAYNE CUDDINGTON FILES*



A bottle of the combined vaccine for measles, mumps and rubella. *POSTMEDIA FILES*

GARAGES | GARDEN SHEDS | CABINS
GAZEBOS | POOL HOUSES | STUDIOS

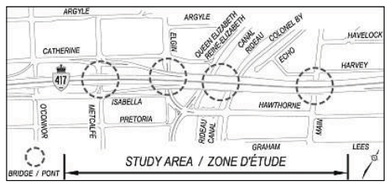


PUBLIC INFORMATION CENTRE NO. 2

Ottawa Queensway Downtown Bridges Environmental Assessment Study
Metcalfe Street to Main Street
Group Work Project 4170-13-00

THE STUDY

The Ontario **Ministry of Transportation (MTO)** has retained **BT Engineering Inc. (BTE)** to undertake a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study will determine the appropriate strategy for the rehabilitation or replacement of these bridges.



THE PROCESS

This study is following the *Class Environmental Assessment for Provincial Transportation Facilities (2000)* planning process for a Group "B" project, with the opportunity for external agency and public consultation throughout the project. The first Public Information Centre (PIC) was held in December 2017. This second PIC is being held at this key point in the study to present the technical recommendations and mitigation plan and to receive public input. The PIC will be 'drop in' format. Representatives of the MTO and BTE will be in attendance to receive comments and answer questions about the study. Please join us at the PIC scheduled on:

Date: **Wednesday, April 24, 2019**
Time: **4:00 p.m. - 8:00 p.m.**
Location: **Saint Paul University, Guigues Building, 223 Main Street, Ground Floor (enter off Main Street)**

Upon completion of this study, a Transportation Environmental Study Report (TESR) will be prepared and made available for a 30-day public review period. A further notice of the TESR public review period will be published in the *Ottawa Citizen* and *Le Droit* and on the project website.

COMMENTS

If you cannot attend this PIC and you would like to discuss the project, receive additional information or provide input, please contact the BTE Project Manager or MTO Senior Project Engineer listed below, or visit the project website at: **www.queenswaydowntownbridges.com**

Steve Taylor, P.Eng.
Project Manager
BT Engineering Inc.
100 Craig Henry Drive, Suite 201
Ottawa, ON K2G 5W3
tel: 613 228-4813
toll-free: 1-855-228-4813
fax: 613-280-1305
e-mail: steven.taylor@bteng.com

Dave Lindensmith, P.Eng.
Senior Project Engineer
Ministry of Transportation
1355 John Counter Boulevard
Kingston, ON K7L 5A3
tel: 613 540-5130
toll-free: 1-800-267-0295
fax: 613 540-5106
e-mail: dave.lindensmith@ontario.ca

If you have any accessibility requirements in order to participate in this project, please contact one of the Project Team members listed above.

All information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act (2009)*. With the exception of personal information, all comments will become part of the public record.

Pour des renseignements en français, veuillez communiquer avec Daniel Riendeau au 613 228-4813 ou à daniel.riendeau@bteng.ca

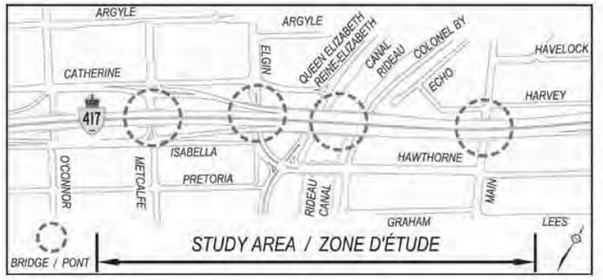
Ontario

DEUXIÈME SÉANCE D'INFORMATION PUBLIQUE

Étude d'évaluation environnementale des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main
Projet de groupe 4170-13-00

L'ÉTUDE

Le **ministère des Transports de l'Ontario (MTO)** a retenu les services de la société **BT Engineering Inc. (BTE)** pour réaliser une étude de conception préliminaire et d'évaluation environnementale de la réfection ou du remplacement de sept ponts (quatre emplacements) de l'autoroute 417 (Queensway) entre les rues Metcalfe et Main, incluant le pont du canal Rideau, à Ottawa. L'étude identifiera les stratégies à adopter pour la réfection ou le remplacement de ces ponts.



LE PROCESSUS

L'étude suit le processus de planification établi par l'*Évaluation environnementale de portée générale pour les installations provinciales de transport* (2000) pour les projets du groupe B et les organismes externes et le public seront consultés tout au long du projet. La première séance d'information publique (SIP) a eu lieu en décembre 2017. La deuxième SIP, présentée à cette étape critique du projet, a pour but de présenter les recommandations techniques et le plan d'atténuation et pour recueillir les idées et commentaires du public. La séance sera de type « portes ouvertes ». Des représentants du MTO et de BTE seront présents pour recueillir les commentaires et répondre aux questions. Nous vous invitons cordialement à assister à cette séance d'information publique :

Date : **mercredi 24 avril 2019**
Heure : **16 h à 20 h**
Lieu : **Université Saint-Paul, pavillon Guigues**
223, rue Main, rez-de-chaussée (entrer par la rue Main)

Une fois l'étude terminée, un rapport d'étude environnementale sur les transports (REET) sera préparé et fera l'objet d'une période d'examen public de 30 jours. Un avis de dépôt du REET sera alors publié dans *l'Ottawa Citizen* et *Le Droit* et affiché sur le site web du projet.

COMMENTAIRES

Si vous ne pouvez assister à la SIP mais souhaitez discuter du projet, obtenir plus d'informations ou partager vos idées et commentaires, veuillez communiquer avec l'une ou l'autre des personnes suivantes, ou consultez le site web du projet à l'adresse suivante : **www.queenswaydowntownbridges.com**

Steve Taylor, P.Eng.
Gestionnaire du projet
BT Engineering Inc.
100, promenade Craig Henry, bureau 201
Ottawa (Ontario) K2G 5W3
tél. : 613 228-4813
sans frais : 1 855 228-4813
téléc. : 613 280-1305
courriel : steven.taylor@bteng.com

Dave Lindensmith, P.Eng.
Ingénieur principal de projet
Ministère des Transports de l'Ontario
1355, boulevard John Counter
Kingston (Ontario) K7L 5A3
tél. : 613 540-5130
sans frais : 1 800 267-0295
téléc. : 613 540-5106
courriel : dave.lindensmith@ontario.ca

Si vous avez des besoins particuliers en matière d'accessibilité pour pouvoir participer au projet, veuillez communiquer avec un des membres de l'équipe de projet mentionnés ci-dessus.

Tous les renseignements seront recueillis en conformité avec la *Loi sur l'accès à l'information et la protection de la vie privée* de 2009. À l'exception des renseignements personnels, tous les commentaires feront partie du domaine public.

Pour obtenir des renseignements en français, veuillez communiquer avec Daniel Riendeau au 613 228-4813 ou à daniel.riendeau@bteng.ca.

Ontario



Le VG de la Ville d'Ottawa, Ken Hughes – PATRICK WOODBURY, ARCHIVES LE DROIT

«Il y a beaucoup de choses qui ne vont pas»

SYLVIE BRANCH
sbranch@ledroit.com

De nombreuses lacunes ont été observées dans les contrats de location des propriétés appartenant à la Ville d'Ottawa, révèle le vérificateur général de la municipalité Ken Hughes dans son plus récent rapport annuel.

Le volumineux document de 121 pages contient 87 recommandations, lesquelles ont toutes été approuvées par la Ville.

Sur les huit sujets étudiés par le bureau du VG, les contrats de location remportent la palme du plus grand nombre de recommandations, soit 30. Ce programme de la Ville permet à la municipalité de générer des millions de dollars chaque année.

« C'est inhabituel, mais il y a beaucoup de choses qui ne vont pas », a lancé M. Hughes devant les membres du Comité de vérification lundi.

Les membres du Comité ont été nombreux à décrier la situation pointant du doigt l'administration municipale.

« C'est une vérification qui est inquiétante. Il s'agit d'un gaspillage de fonds des contribuables si nous ne maximisons pas nos installations », soutient le conseiller Georges Darouze.

L'équipe de M. Hugues rapporte que lorsque la Ville loue, à des entreprises privées ou à des groupes communautaires, les établissements qui lui appartiennent, elle n'a aucune politique de location générale, que les loyers ne correspondent pas toujours à leur valeur réelle sur le marché et que certains baux à long terme n'ont pas été renégociés depuis 15 ans.

Le directeur municipal, Steve Kanellakos, a affirmé que le personnel tentera de trouver des solutions afin d'éviter qu'une telle situation se reproduise.

Parmi les autres sujets abordés par le VG, il pointe du doigt les services d'ambulance. Selon M. Hughes, des correctifs doivent être apportés afin d'assurer que les renseignements personnels soient mieux protégés.

De plus, la municipalité doit revoir son système de sécurité plus particulièrement dans le cas des travailleurs saisonniers et des stagiaires.

« Il faut compter de cinq semaines à plusieurs mois avant qu'on annule les cartes d'accès des employés qui en sont plus au service de la Ville », note le bureau du VG.

Plan de vérification de 2019

VÉRIFICATIONS OPÉRATIONNELLES

- Service des règlements municipaux, application des règlements
- Services du parc automobile
- Théâtres Meridian Centrepointe
- Centres des arts Shenkman

VÉRIFICATIONS DE CONFORMITÉ

- Comptabilité et distributions en cascade de Lansdowne
- Fonds de prévoyance du train léger sur rail
- Plan d'approvisionnement relatif à la phase 2 du train léger sur rail

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Flyers

ONTARIO GOVERNMENT NOTICE

Public Information Centre No. 2

Ottawa Queensway Downtown Bridges Environmental Assessment Study
Metcalfe Street to Main Street
Group Work Project 4170-13-00

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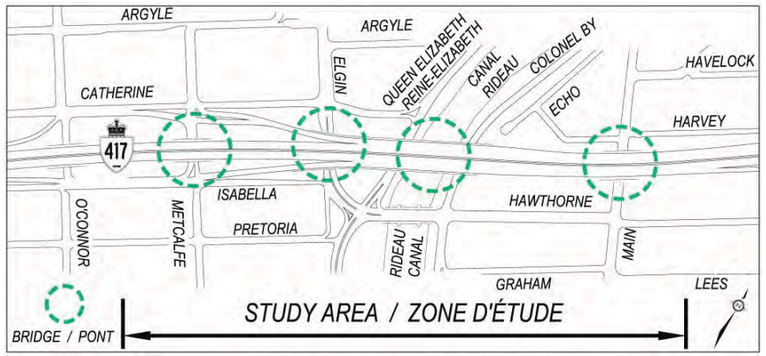

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COMMENTS - If you cannot attend this PIC and you would like to discuss the project, receive additional information or provide input, please contact the BTE Project Manager or MTO Senior Project Engineer listed below, or visit the project website at: **www.queenswaydowntownbridges.com**.

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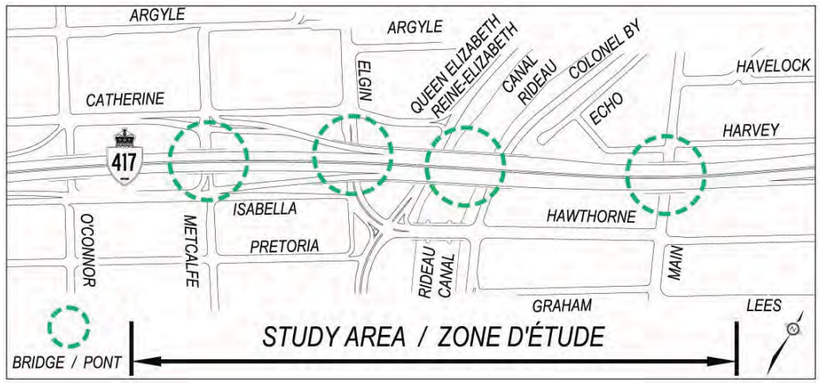
AVIS DU GOUVERNEMENT DE L'ONTARIO

Deuxième séance d'information publique

Étude d'évaluation environnementale des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main
Projet de groupe 4170-13-00

L'ÉTUDE – Le **ministère des Transports de l'Ontario (MTO)** a retenu les services de la société **BT Engineering Inc. (BTE)** pour réaliser une étude de conception préliminaire et d'évaluation environnementale de la réfection ou du remplacement de sept ponts (quatre emplacements) de l'autoroute 417 (Queensway) entre les rues Metcalfe et Main, incluant le pont du canal Rideau, à Ottawa. L'étude identifiera les stratégies à adopter pour la réfection ou de remplacement de ces ponts.



LE PROCESSUS – L'étude suit le processus de planification établi par l'*Évaluation environnementale de portée générale pour les installations provinciales de transport* (2000) pour les projets du groupe B et les organismes externes et le public seront consultés tout au long du projet. La première séance d'information publique (SIP) a eu lieu en décembre 2017. La deuxième SIP, présentée à cette étape critique du projet, a pour but de présenter les recommandations techniques et le plan d'atténuation et pour recueillir les idées et commentaires du public. La séance sera de type « portes ouvertes ». Des représentants du MTO et de BTE seront présents pour recueillir les commentaires et répondre aux questions. Nous vous invitons cordialement à assister à cette séance d'information publique :

Date : mercredi 24 avril 2019
Heure : 16 h à 20 h
Lieu : Université Saint-Paul, pavillon Guigues, 223, rue Main, rez-de-chaussée (entrer par la rue Main)

Une fois l'étude terminée, un rapport d'étude environnementale sur les transports (REET) sera préparé et fera l'objet d'une période d'examen public de 30 jours. Un avis de dépôt du REET sera alors publié dans l'*Ottawa Citizen* et *Le Droit* et affiché sur le site web du projet.

COMMENTAIRES – Si vous ne pouvez assister à la SIP mais souhaitez discuter du projet, obtenir plus d'informations ou partager vos idées et commentaires, veuillez communiquer avec l'une ou l'autre des personnes suivantes, ou consultez le site web du projet à l'adresse suivante : **www.queenswaydowntownbridges.com** :

Steve Taylor, P.Eng.
Gestionnaire du projet
BT Engineering Inc.
100, promenade Craig Henry, bureau 201
Ottawa (Ontario) K2G 5W3
Tél. : 613 228-4813
Sans frais : 1 855 228-4813
Télécopieur : 613 280-1305
steven.taylor@bteng.ca

David Lindensmith, P.Eng.
Ingénieur principal de projet
Ministère des Transports de l'Ontario
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Tél. : 613 540-5130
Sans frais : 1 800 267-0295
Télécopieur : 613 540-5106
dave.lindensmith@ontario.ca

Si vous avez des besoins particuliers en matière d'accessibilité pour pouvoir participer au projet, veuillez communiquer avec un des membres de l'équipe de projet mentionnés ci-dessus.

Tous les renseignements seront recueillis en conformité avec la *Loi sur l'accès à l'information et la protection de la vie privée* de 2009. À l'exception des renseignements personnels, tous les commentaires feront partie du domaine public.

Pour obtenir des renseignements en français, veuillez communiquer avec Daniel Riendeau au 613 228-4813 ou à daniel.riendeau@bteng.ca.

Sample Letters

April 9, 2019

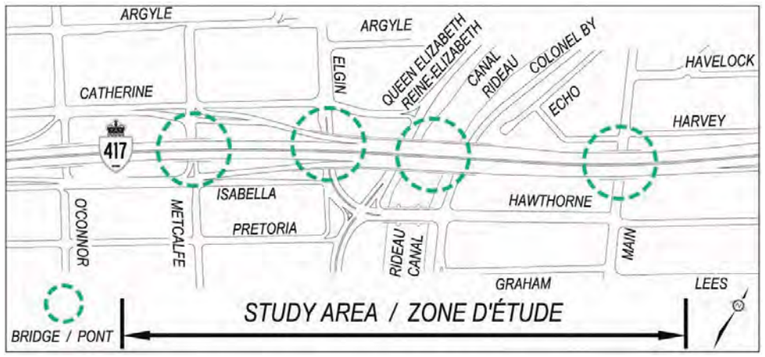
Dear Stakeholder:

Re: Ontario Ministry of Transportation (MTO) – Environmental Assessment Study for the Rehabilitation / Replacement of Ottawa Queensway Downtown Bridges, Metcalfe Street to Main Street (G.W.P. 4170-13-00)

Notice of Public Information Centre No. 2

THE STUDY

The Ontario Ministry of Transportation (MTO) has retained BT Engineering Inc. (BTE) to undertake a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study will determine the appropriate strategy for the rehabilitation or replacement of these bridges.



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Yours truly,

Steve Taylor, P. Eng., BTE
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Gordon Bell, Consultant Environmental Planner

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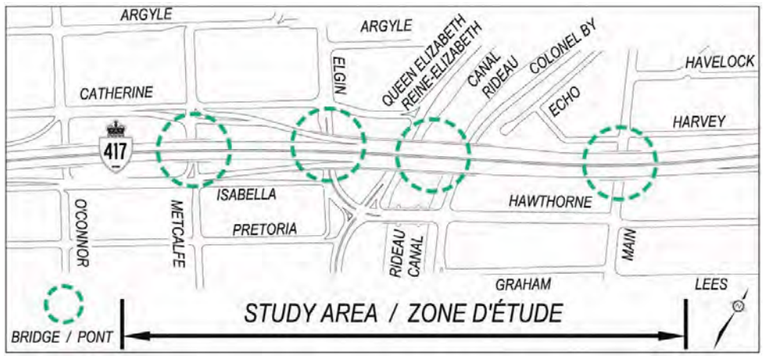

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Ministère des Transports

Section de la planification et de la conception
1355, boulevard John Counter
CP/Service de sacs 4000
Kingston (Ontario) K7L 5A3
Tél.: 613-540-5130
Téléc. 613 540-5106

Ontario

Date

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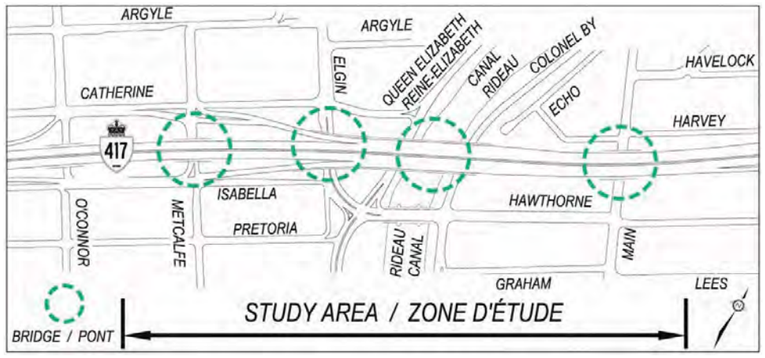

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Yours truly,

Dave Lindensmith, P. Eng.
Senior Project Engineer
Ministry of Transportation

cc: Steve Taylor, Consultant Project Manager
John Hanna, MTO Senior Environmental Planner
Gordon Bell, Senior Environmental Planner

Appendix B
PIC No. 2 Exhibits



Welcome!

Preliminary Design and EA Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown bridges from Metcalfe Street to Main Street

Group Work Project No. 4170-13-00

Welcome to the second Public Information Centre (PIC) No. 2 meeting for the Environmental Assessment Study for the Rehabilitation/ Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street. **Please record your attendance on the Sign-in Sheet and obtain a Comment Sheet at the registration desk.**

The purpose of this PIC No. 2 is to present information concerning:

- Project Overview and Study Area
- EA Process and Schedule
- Technical Recommendations and Mitigation Plan
- Next Steps
- Obtain your Comments

Should you have any questions regarding the presentation materials, background reports or any other aspect of the study, please speak to the MTO or Consultant Study Team members in attendance.

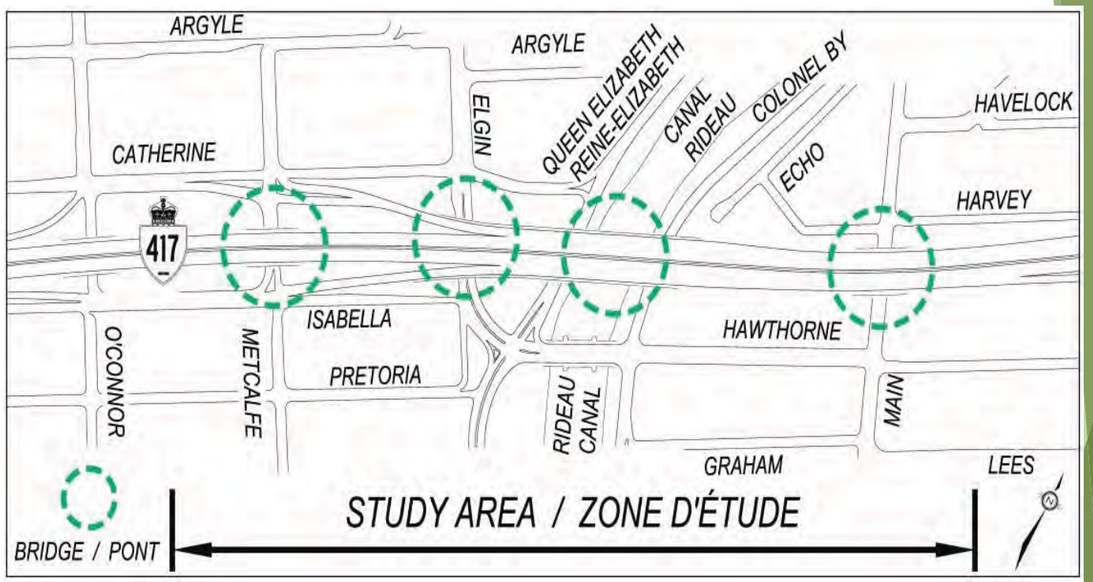
We encourage your input/feedback on the material being presented on the display boards. Please deposit completed comment sheets in the comment box or mail/e-mail to the address at the bottom of the sheet by **May 10, 2019**.

There is an opportunity at any time during the Class EA process for interested persons to provide written input. Any comments received will be collected under the *Environmental Assessment Act* and *Freedom of Information and Protection of Privacy Act*, with the exception of personal information, will become part of the public record.

Introduction

MTO is conducting an Environmental Assessment and Preliminary Design study to establish bridge management plans for 7 bridges at 4 sites on the Ottawa Queensway at the following locations: Metcalfe Street; Elgin Street; Rideau Canal; and Main Street. The Study Area is presented below. The study is assessing both rehabilitation and replacement alternatives.

A Study Design Report (SDR) was prepared to present: the proposed problem and opportunity statements; a blueprint of the proposed Work Plan and Study Process; proposed alternatives to the undertaking; proposed alternative methods of carrying out the alternative and the proposed evaluation process; proposed public, agency and indigenous peoples consultation; and proposed documentation and post study steps. The report outlines the key activities required to complete the study and the EA preliminary planning and design process. The SDR was finalized after the first PIC and is available on both the Resource Table* and the website at www.queenswaydowntownbridges.com



***The Final Study Design Report is available on the Resource Table**

Background Studies

Two other studies that have been completed and are relevant to this study include:

2007: Highway 417 (Ottawa Queensway) from Highway 416 easterly to Anderson Road, Environmental Assessment and Preliminary Design Study (GWP 663-930-00): this EA defined the overall corridor freeway plan.

2016: Ottawa Queensway Mid-town Bridges from Holland Avenue to O'Connor Street, Environmental Assessment and Preliminary Design Study (GWP 4075-11-00): this EA defined bridge management plans for 23 structures for rehabilitation and replacement projects to the west of the current study area.

The 2007 and 2016 TESRs are available on the Resource Table

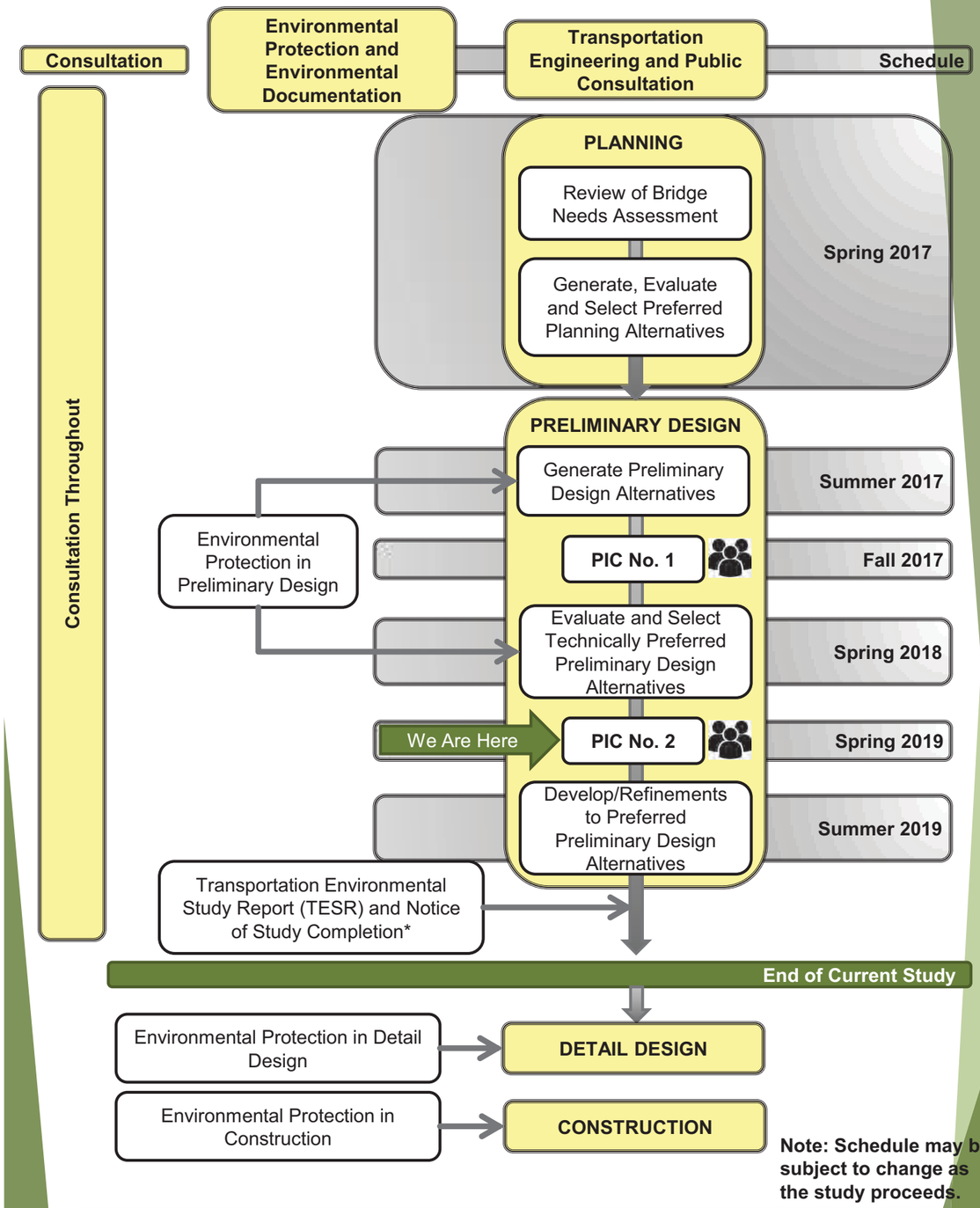
Overview of the MTO Class EA Process for Group B Projects

This project is being conducted in accordance with the requirements of the Ministry of Transportation (MTO) Class Environmental Assessment for Provincial Transportation Facilities (2000) for a Group B project. As part of these requirements, the following will occur:

- A Transportation Environmental Study Report (TESR) will be prepared and filed with the Regional Office of the Ministry of the Environment, Conservation and Parks (MECP) for a 30-day public review period.
- A public notice will be published in the local newspaper (daily English and French) at the time of submission for the TESR to the MECP. The public notice for the completion and filing of the TESR will identify any additional location(s) where the document can be viewed.

You are encouraged to contact the MTO Project Team if you have questions or concerns about this study. If you feel, after consulting with MTO staff, that serious environmental concerns remain unresolved, it is your right to request that the project be subject to an Individual Environmental Assessment. The decision rests with the Minister of the Environment, Conservation and Parks.

Overview of the MTO Class EA Process for Group B Projects



Problem / Opportunity Statement

Problem:

The seven (7) Ottawa Queensway Downtown bridges date from the original Queensway construction period from 1959 to 1968. In addition, the Queensway Rideau Canal Bridge is nearing the end of its service life. Unlike the 23 Mid-town bridges to the west, these bridges do not yet have individual or coordinated bridge management plans for rehabilitation or replacement to ensure the continued safe operation of the highway for the future planning horizon.

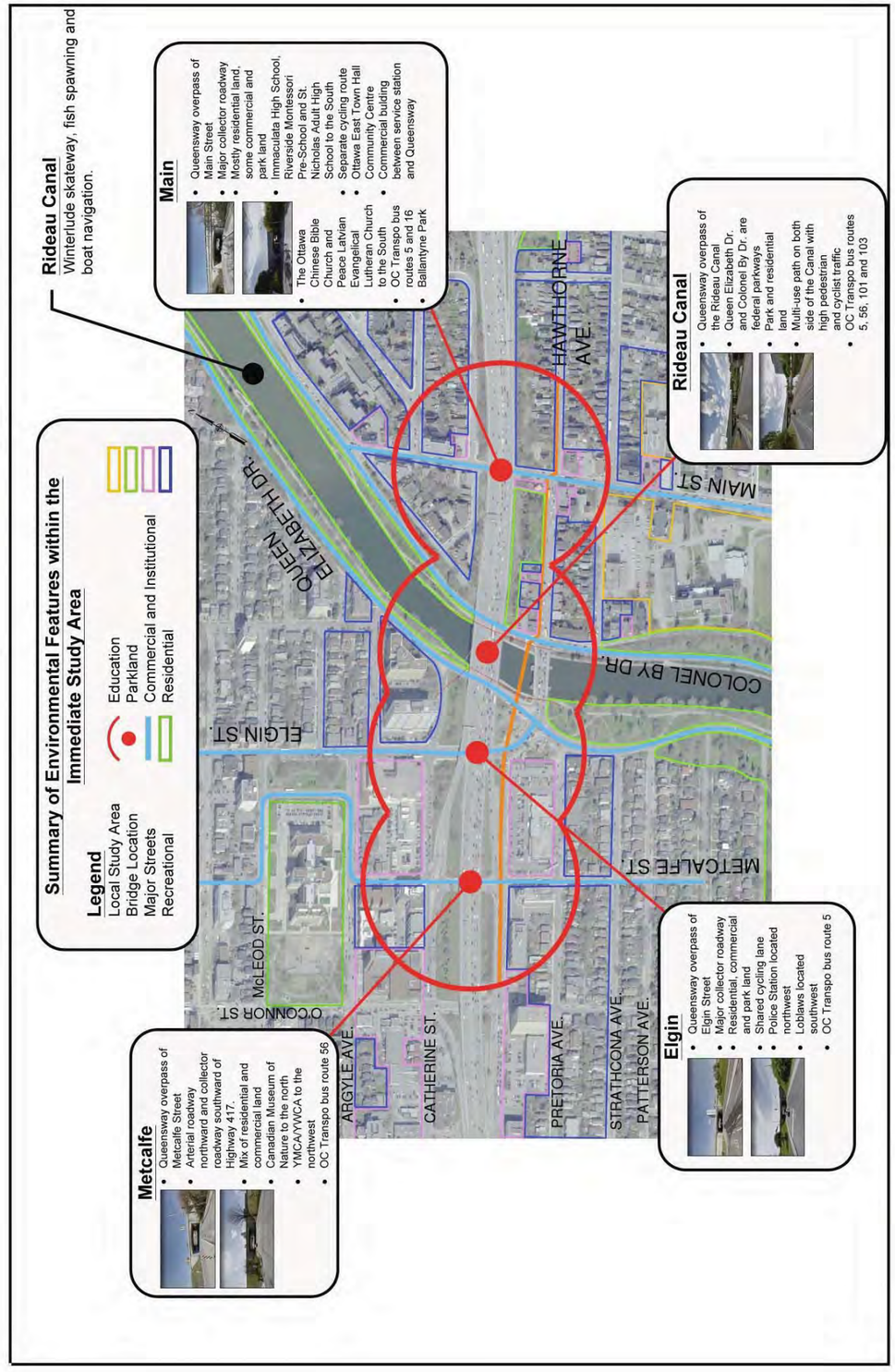
Opportunity:

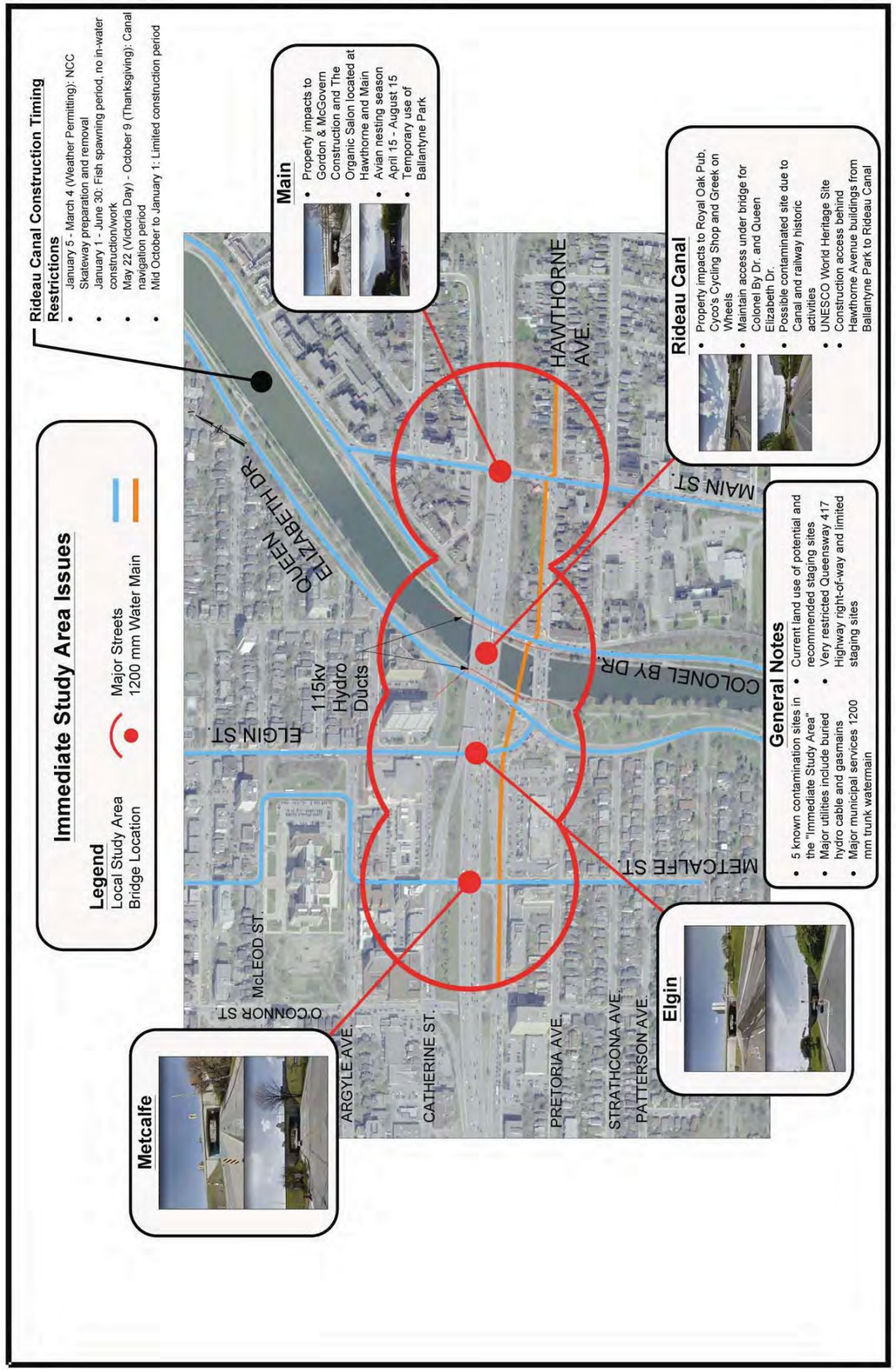
- Establish bridge management plans for the 7 Queensway bridges from Main Street to Metcalfe Street, continuing the MTO program of establishing bridge management plans from west to east along the Queensway.
- Coordinate the bridge management plans for the 7 bridges based on design, traffic staging and construction considerations.
- Coordinate Mid-town bridge work (23 structures to the west) with this project's downtown bridge work (environmental mitigation, traffic staging, bridge staging sites, etc.)

Bridge Types and Evaluation

The seven downtown bridges have been divided into two groups, based on the type of bridge structure:

- Rigid frame bridges (Metcalfe Street, Elgin Street and Main Street): this type of bridge is one continuous single span structure (no joints at abutments)
- Rideau Canal Bridge: a multi-span bridge with heritage context





Consultation to Date

We've consulted the following as part of this study:

- Indigenous Peoples
  - Notification for Study Commencement and PIC's
- National Capital Commission (NCC) and their Advisory Committee for Planning, Design, and Realty (ACPDR)
- Parks Canada
- Transport Canada
- City of Ottawa
- Ministry of the Environment, Conservation and Parks
- Ministry of Tourism, Culture and Sport
- Property/Business Owners
- Community Associations
- Members of the Public
  - Study Commencement Notices in French and English daily newspapers
  - Study Website
  - PIC No. 1 December 5, 2017

Alternatives to the Undertaking – Planning Alternatives

Alternatives to the Undertaking represent alternative ways or methods of addressing the Problem / Opportunity Statement specific to this study. Considering Alternatives to the Undertaking is a mandated task under the MTO Class EA. In this study, the focus is on four bridge locations. These alternatives reflect different strategies and include the “Do Nothing” approach (maintaining the status quo but not addressing the Problem / Opportunity Statement).

X **Alternative 1**: The “Do Nothing” Alternative maintains the status quo of the existing bridges with no significant actions taken to manage aging infrastructure. This approach would accept further deterioration within the 20 year planning horizon. **This alternative is NOT recommended to be carried forward.**

Alternative 2: In accordance with the MTO Class EA, this alternative would be new and/or improved (rehabilitated) Provincial Transportation Facilities (bridges). Since the bridge sites already exist, the alternative could be simply referred to as “Management of Bridge Infrastructure”.

✓ **Alternative 2a**: Rehabilitate the existing bridges to extend their service lives including structural upgrades to meet existing seismic code requirements. **This alternative is recommended to be carried forward.**

✓ **Alternative 2b**: Replace the existing bridges with new structure(s). **This alternative is recommended to be carried forward.**

The Assessment of Alternatives to the Undertaking Report is available on the Resource Table.

Alternative Methods - Preliminary Design Alternatives Rigid Frame Bridge Sites

Preliminary Design Alternatives carried forward for the rigid frame bridge sites (Metcalfe Street, Elgin Street and Main Street) include rehabilitation or replacement of the bridges as bridge management strategies. Four sets of preliminary design alternatives have been considered, including:

Bridge Preliminary Design Alternatives being considered include:

- Rapid Rehabilitation
- Conventional Rehabilitation
- Conventional Replacement
- Rapid Replacement

Staging Area Site Alternatives are being considered for Rapid Replacement. The alternatives are presented on the following exhibits.

Traffic Management Alternatives are being considered for conventional construction (construction in place, reduced number of travel lanes on the Queensway and municipal streets during construction) and rapid replacement (full Queensway closure on one weekend during replacement). The alternatives are described in the Highway Staging Report* available on the Resource Table.

***The Highway Staging Report is available on the Resource Table.**

Potential Staging Sites for Rigid Frame Structures – Main Street

Location	RBR Potential
✓ M-1 Adjacent to Hawthorne Avenue just 10m west of Main Street (Ballantyne City Park / municipal park area)	• Good → Access can be direct onto Main Street with no impact on nearby residences → Work area is acceptable → Grades to site good
M-2 Graham Street (Adult Education Building)	• Poor → Does not meet area and dimension requirements → Relatively long travel route from staging area to bridge structure compared to site M-1 → Overhead utility relocations required both sides of Main Street
M-3 (use of Immaculata High School Parking area)	• Poor → Does not meet area or dimension requirements → Main Street is too narrow to transport structure → To improve the profile from this site to Main Street major excavation would be required. → Impacts to overhead utilities along west/east sides of Main Street
M-4 MTO lands east side of Main Street , immediately south of the Queensway	• Poor → Does not meet minimum span dimension needs → Construction vehicles would have difficulty to access 2 structures that would have to be built back to back.
M-5 MTO ROW immediately north of the Queensway, east side of Main Street	• Poor → Size/dimensions of ROW site do not meet requirements → Impact on nearby residences → loss of on street parking
M-6 Residential properties located north of Queensway west side of Main Street	• Poor → Major residential impact (up to 6 residential buyouts) → Grade requirements satisfied
M-7 Immaculata High School football field	• Poor → Main Street has insufficient width transportation of new structures not possible. → Loss of community use of the football field /community impacts

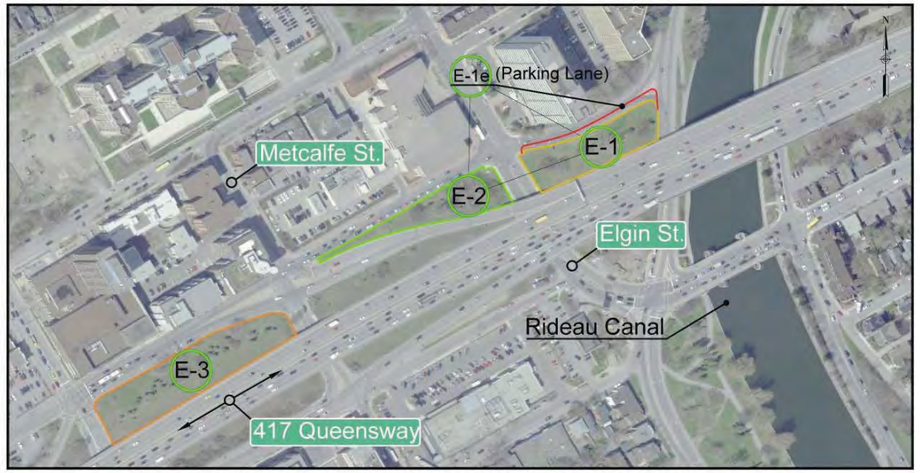
The Rigid Frame Staging Sites Assessment Memo is available on the Resource Table

Potential Staging Sites for Rigid Frame Structures – Elgin and Metcalfe Streets

Location	RBR Potential
✓ E-1 Adjacent to Elgin Street, north of the Queensway just to the east of the Elgin Street Bridge site.	• Good → Site can have direct access to Elgin Street and Catherine Street → Work area is acceptable → Short travel route → No impact on detour route while Queensway is closed → Grades to site good
✓ E-1e (expanded to include Catherine Street using south side parking lane)	• Good → Provides better access to the Canal structure for larger cranes and moving equipment
E-2 Adjacent to Elgin Street west side of Elgin Street	• Poor (for full structure) → Does not meet area and dimension requirements for a full structure replacement site → Short travel route from staging area to bridge structure → Overhead utility relocations required → No impacts on detour route
✓ E-3 Adjacent to Metcalfe Street , immediately west of Metcalfe Street	• Good → Direct access for Metcalfe Street Structure → Can accommodate Elgin Street Structure if E-1 not available due to timing constraints → No community impacts
E-4 MTO lands east side of Metcalfe Street, north of Queensway; adjacent to the Catherine Street exit ramp from the Queensway.	• Poor → Does not meet minimum span dimension needs → Construction vehicles would have access from the off-ramp from the Queensway introducing collision potential

The Rigid Frame Staging Sites Assessment Memo is available on the Resource Table

RECOMMENDED STAGING SITES - RIGID FRAME



Legend

Recommended Staging Site

Note

See Memorandum on resource table. Preliminary Review of Staging Area Sites for Rapid Bridge Replacement Options for Metcalfe Street, Elgin Street and Main Street Bridges.

RECOMMENDED STAGING SITES FOR THE METCALFE STREET AND ELGIN STREET BRIDGES



RECOMMENDED STAGING SITES FOR MAIN STREET BRIDGE

Preliminary Design Alternatives Rideau Canal Bridge

Preliminary Design Alternatives carried forward for the Rideau Canal Bridge include rehabilitation or replacement of the bridge as bridge management strategies.

Bridge Preliminary Design Alternatives being considered include:

- **Alternative A** – Replacement – Constant Depth Steel or Concrete Girder Bridge at Existing Pier Location
- **Alternative B** – Replacement – Variable Depth Steel Girder Bridge at Existing Pier Location
- **Alternative C** – Replacement – Extrados Concrete Bridge at New Pier Location
- **Alternative D** – Replacement – Variable Girder Bridge at New Pier Location behind Existing Canal Walls
- **Alternative E** – Replacement – Single Span Structure (No Piers)
- **Alternative F** – Rehabilitation – Conventional (Carried Forward as Baseline)

Construction Staging Alternatives for Bridge Replacement are presented in the Highway Staging Report found on the Resource Table. These include traffic management alternatives for the conventional (construction in place) and rapid replacement (Queensway closure) alternatives.

The Highway Staging Report is available on the Resource Table.

Rideau Canal Bridge Alternative Renderings

Alternative A



Alternative B



Alternative C



Alternative D

✓



Alternative E



Alternative F: Rehabilitation of existing structure (NOT SHOWN)

All alternatives carried forward for evaluation.

Rideau Canal Bridge Construction Alternatives

X **Canal Alternative 1:** Remote Staging Area using barges for removal and delivery of new superstructure. Conventional strip construction. Not carried forward based on canal constraints.

X **Canal Alternative 2A:** Conventional Construction in strips. Not carried forward due to unconventional traffic staging method.

✓ **Canal Alternative 2B:** Conventional Construction in strips allowing wheel tracking on the joint between bridges. Carried forward.

✓ **Canal Alternative 2C:** Conventional Construction in strips. Carried forward.

X **Canal Alternative 3A:** Rapid Replacement for complete superstructure replacement using Self Propelled Modular Transporters (SPMTs) from staging sites used for Rigid Frames. Not carried forward (substantial impacts to existing properties and traffic).

X **Canal Alternative 3B:** Rapid Replacement using three separate sections for each structure using SMPTs from staging sites used for Rigid Frames. Not carried forward (substantial impacts to existing properties and traffic).

X **Canal Alternative 3C:** Rapid Replacement using three separate sections for each structure using SMPTs from Ballantyne Park and staging sites used for Rigid Frames. Not carried forward (substantial impacts to existing properties and traffic).

X **Canal Alternative 3D:** Rapid Replacement using three separate sections for each structure using SMPTs from Ballantyne Park and staging sites used for Rigid Frames. Not carried forward (substantial impacts to existing properties and traffic).

✓ **Canal Alternative 4:** Demolish in place and jack and slide from sides (2 bridges replaced on same weekend). Carried forward.

✓ **Canal Alternative 5:** Sequential jack and slide removing one bridge at a time (2 bridges replaced in two separate years). Carried forward.

✓ **Canal Alternative 6:** SPMT transport to Nicholas. Innovative technique to build platform under structure to lift the SPMT and each of the 3 spans sequentially to the elevation of the Queensway. The SPMT drives the bridge sections to Nicholas and returns with new sections. Requires support piers in canal. Carried forward.

The Rideau Canal Construction Methodology Alternatives Coarse Screening Memo is available on the Resource Table

Evaluation of Alternatives Summary

Following an initial screening analysis, the following groups of alternatives have been carried forward for detailed evaluation (alternatives carried forward are noted by a "✓":

Rigid Frame Bridge Alternatives:

- ✓ Rapid Rehabilitation
- ✓ Conventional Rehabilitation
- ✓ Rapid Replacement
- ✓ Conventional Replacement

Rideau Canal Bridge Alternatives:

- ✓ Alternative A: Replacement Girder Bridge on Existing Pier Location
- ✓ Alternative B: Replacement Girder Bridge on Existing Pier Location
- ✓ Alternative C: Replacement Extrados Concrete Bridge on New Pier Location
- ✓ Alternative D: Replacement Girder Bridge on New Pier Location
- ✓ Alternative E: Replacement: Single Span Structure (No Piers)
- ✓ Alternative F: Rehabilitation: Conventional

Rideau Canal Construction Staging Alternatives:

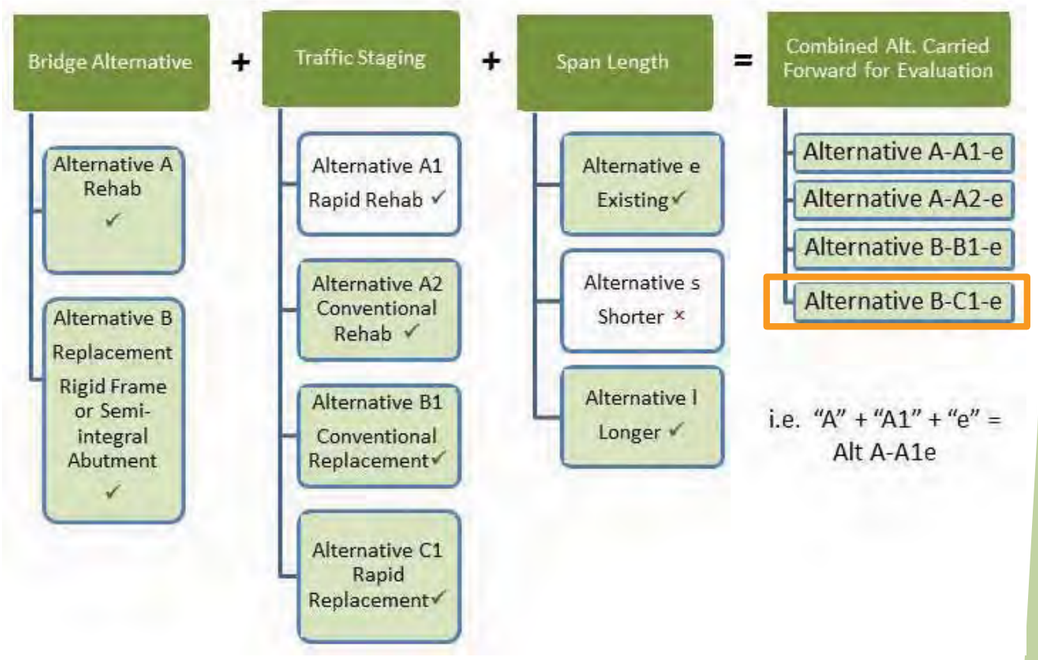
- X Canal Alternative 1: Barge Removal
- X Canal Alternative 2A: Conventional Construction in Strips
- ✓ Canal Alternative 2B: Conventional Construction in Strips
- ✓ Canal Alternative 2C: Conventional Construction in Strips
- X Canal Alternative 3A: SPMT Rapid Replacement (Complete Structure)
- X Canal Alternative 3B: SPMT Rapid Replacement (Separate Structures)
- X Canal Alternative 3C: SPMT Rapid Replacement (Separate Structures)
- X Canal Alternative 3D: SPMT Rapid Replacement (Separate Structures)
- ✓ Canal Alternative 4: Jack and Slide on One Weekend
- ✓ Canal Alternative 5: Jack and Slide in Two Separate Years
- ✓ Canal Alternative 6: SPMT Transport to and from Nicholas

Evaluation of Alternatives Rigid Frames

The evaluation of Alternative Methods / Preliminary Design Alternatives considered alternatives for Rigid Frame Bridge Replacements and/or Rehabilitations.

At each site the combined alternative included: Bridge Management Alternative + Traffic Staging Alternative + Bridge Span = Combined Alternative Number

The flow chart below shows the Rigid Frame Preliminary Design Alternatives that were carried forward for Detailed Evaluation from the initial Coarse Screening of Alternatives.



Technically Preferred Alternative.

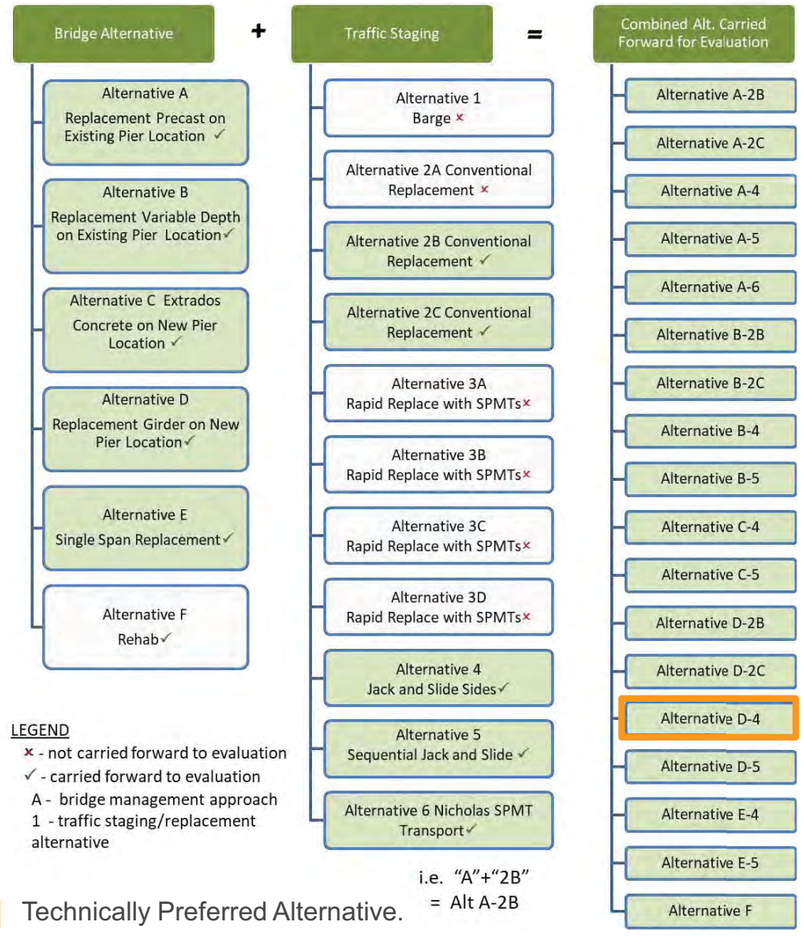
The Analysis and Evaluation Report is available on the Resource Table

Evaluation of Alternatives Rideau Canal

The evaluation of Alternative Methods / Preliminary Design Alternatives considered alternatives for Replacement and/or Rehabilitations

The combined alternative included: Bridge Management Alternative + Traffic Staging Alternative + Bridge Span = Combined Alternative Number.

The flow chart below shows the Rideau Canal Preliminary Design Alternatives that were carried forward for Detailed Evaluation from the initial Coarse Screening of Alternatives.



The Analysis and Evaluation Report is available on the Resource Table

Analysis and Evaluation of Preliminary Design Alternatives

The analysis and evaluation of the Preliminary Design Alternatives was undertaken using a comprehensive evaluation methodology referred to as the *Multi Attribute Trade-off System (MATS)* method. Nine evaluation factor groups were considered:

- Transportation
- Natural Environment
- Social Environment
- Context Sensitive Design
- Heritage Resources
- Economic Environment
- Land Use and Property
- Structural
- Cost

The factor groups are made up of measurable criteria (sub-factors) used to identify relevant benefits and impacts. They define a unit of measure and the relative differences between alternatives. Evaluation data was collected from literature reviews of background documentation and environmental inventories completed for this project.

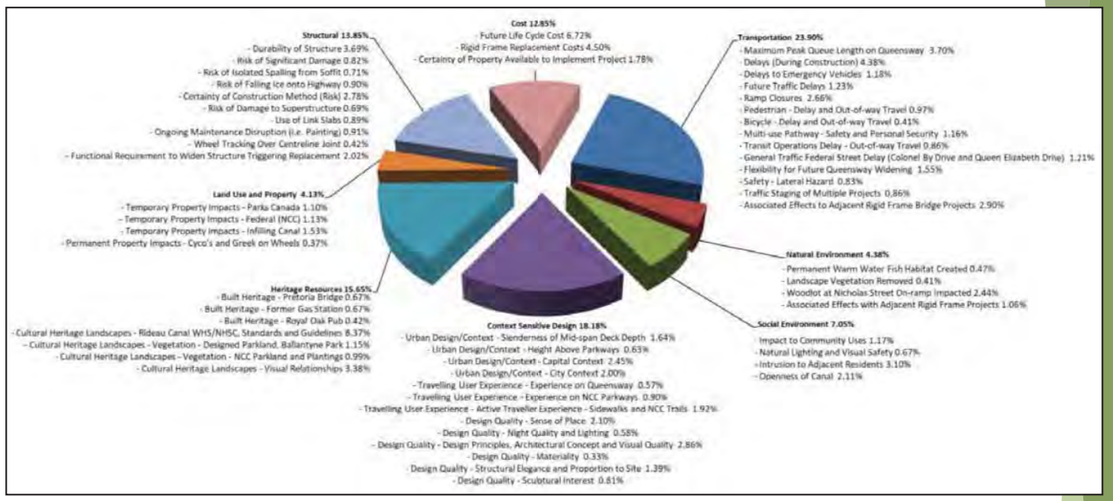
The MATS method focuses on the differences between alternatives, addresses the complexity of the base data collected and provides a traceable, defensible and replicable decision-making process. Alternative scores are determined through the use of a mathematical relationship to equate impacts to scores. It eliminates any possible subjective opinions of the individuals undertaking the MATS evaluation process.

The Rideau Canal MATS results are presented on the following exhibits as an example. All other MATS results can be found on the resource table.

The Analysis and Evaluation Report is available on the Resource Table

Analysis and Evaluation of Preliminary Design Alternatives – Rideau Canal

Below is a sample of the evaluation criteria weights and ranking of the Rideau Canal bridge. For the full evaluation methodology and Rigid Frames, please refer to the Analysis and Evaluation Report on the Resource Table.





The Analysis and Evaluation Report is available on the Resource Table

TPAs for Rigid Frames

The rigid frame bridges are recommended for replacement using the rapid bridge replacement technology. Following clearance of the Transportation Environmental Study Report, the study will proceed to Detail Design, contract preparation, award and construction over the next several years (additional work not covered under this study).

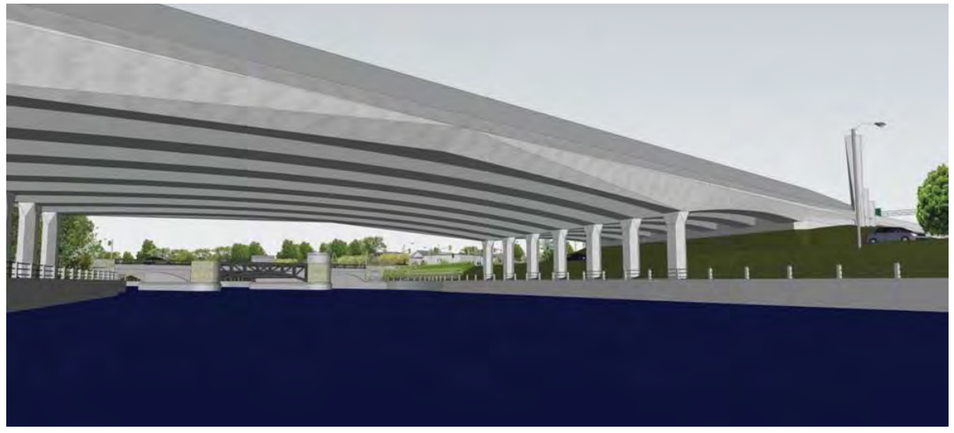
Work Involved:

- Municipal street closures for preparation work
- Queensway weekend closures for bridge rapid removal and bridge replacement
- New bridge construction at nearby staging site
- Reinstatement of staging site and associated work areas

TPA for Rideau Canal

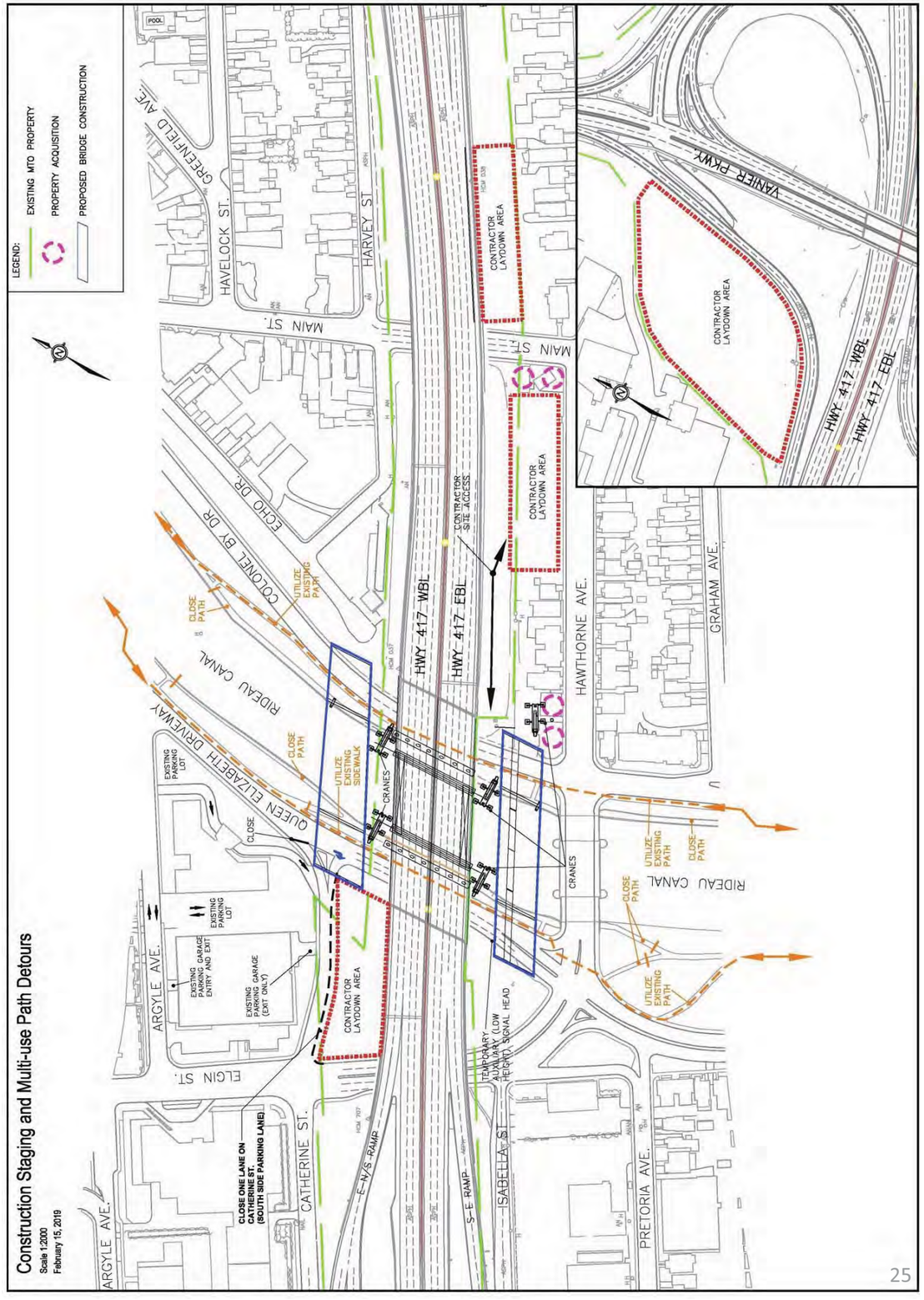
Alternative D-4 is the Technically Preferred Alternative for the Rideau Canal Bridge: Replacement Girder on New Pier Location using the Jack and Slide from both sides construction method. Further design development will occur during detail design.











Noise Assessment

Two investigations were completed for the Noise Assessment:

1) Condition of existing noise barriers
2) Noise assessment to investigate the noise impacts associated with the rehabilitation/replacement of the bridges.

Existing Noise Barriers

The existing noise barriers are in poor condition with rusted steel. The noise barriers are 4 m high with a step-down terminus and are at the end of their service lives. They are recommended for replacement.

Noise Assessment for Bridge Management Plan

The MTO/MOECC (MECP) Environmental Guide for Noise was used to complete the assessment in two stages:

1. To review the existing (planning horizon 2025) noise levels and 10 years after construction (2035);
2. Investigate mitigation measures for representative receiver sites experiencing noise levels over 65 dBA.

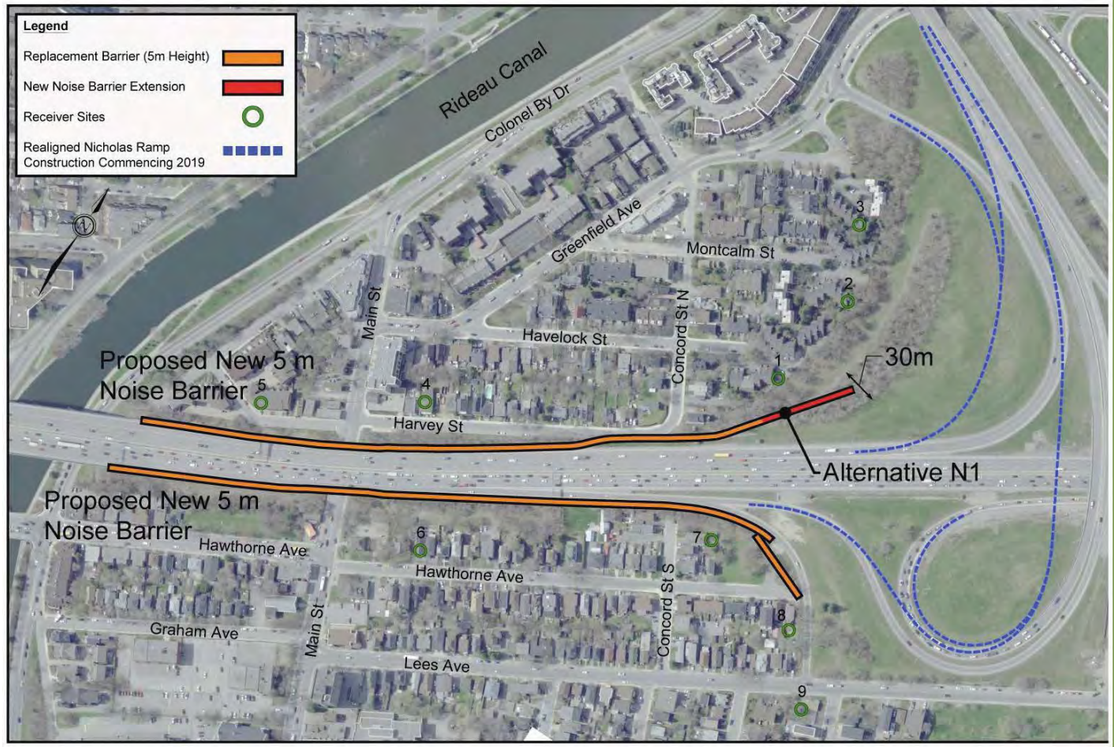
Based on the noise assessment, residential properties are experiencing greater than 65 dBA noise levels and require mitigation where technically and economically feasible to achieve a greater than 5 dBA attenuation.

All existing noise barriers are recommended for replacement with 5 m high noise barriers (1 m higher than existing) as well as lateral extension of the noise barriers on the north side of the Queensway.

The Noise Assessment Report is available on the Resource Table

Noise Assessment Recommendations

The dashed blue line is a parallel project for the new 2019 Nicholas Street Ramp realignment.



The Noise Assessment Report is available on the Resource Table

Statement of Flexibility

Overall Recommendation and Statement of Flexibility

The Technical Advisory Committee recommended that the Transportation Environmental Study Report (TESR), which will describe the project to be carried forward, allow flexibility in the Recommended Preliminary Design Alternatives to be implemented. This "Statement of Flexibility" allows the MTO to review two elements following Environmental Clearance:

1. It allows the MTO to implement either bridge management strategy (rehabilitation or replacement), dependent on funding, staging site, availability, etc. The table below shows the results from the MATS evaluation, with a statement of flexibility for several bridge sites.
2. It also allows MTO to review design elements, such as façade treatments and pier design, during the subsequent detail design phase of the project for each bridge site.

Bridge Site	MATS Evaluation Rankings/Scores			TPA (based on MATS rankings and Implementation Considerations)	Statement of Flexibility within TESR
	1st	2nd	3rd		
Metcalfe Street	Alt B-C1/ 82.25 Rapid Replacement	Alt A-A2/ 60.80 Conventional Rehabilitation	Alt A-A1/ 59.22 Rapid Rehabilitation	Rapid Replacement (Alt B-C1)	Conventional Rehabilitation (Alt A-A2)
Elgin Street	Alt B-C1/ 85.00 Rapid Replacement	Alt A-A2/ 58.34 Conventional Rehabilitation	Alt B-B1/ 52.96 Conventional Replacement	Rapid Replacement (Alt B-C1)	Conventional Rehabilitation (Alt A-A2)
Main Street	Alt B-C1/ 70.21 Rapid Replacement	Alt A-A2/ 68.67 Conventional Rehabilitation	Alt A-A1/ 64.54 Rapid Rehabilitation	Rapid Replacement (Alt B-C1)	Conventional Rehabilitation (Alt A-A2)
Rideau Canal	Alt D-4/ 81.66 Replacement: Jack and Slide	Alt D-2B/ 80.33 Replacement: Conventional	Alt D-5/ 80.07 Replacement: Jack and Slide (2 years)	Jack and Slide Sides Replacement (Alt D-4)	Conventional Rehabilitation (Alt F)

TPA Refinement Rideau Canal Construction Staging Refinements

A refinement to the TPA is being considered by the Study. The independent constructability review has identified two refinements that are considered necessary to achieve the construction of the Rideau Canal Bridge.

- **Refinement 1A:** To create greater space for the construction laydown area for the Rideau Canal westbound bridge, it is recommended that 1 lane (used for parking) on Catherine Street (from the Queen Elizabeth Driveway to Elgin Street) be closed for the construction period.
- **Refinement 1B:** To ensure greater certainty in the time available for the Rideau Canal rapid replacement plan, extend the Queensway closure to 3 days (Saturday, Sunday and Monday or Friday). Advance notification will alert travellers to change their travel behaviour on the weekday Monday or Friday closure.

Effects and Mitigation

Factor	Environmental Issues and Potential Effects	Preliminary Design Proposed Mitigation Measures
Pedestrian / Cycling / Recreational Mobility	Potential for restricted pedestrian / cycling / recreational movement under Queensway or along other localized closures during construction – including along school / commuter / recreational routes. Longer term sidewalk closures required at bridge replacement sites to provide access to bridge footings.	Provide alternate detour routes and advance notifications of temporary closures. See Resource Table for preliminary detour routes. Use of protective hoarding and temporary protected wa kways to maintain pedestrian passage to the greatest extent possible.
Active Transportation – Multi-use Path	The width of the MUP in the vicinity of the Rideau Canal Bridge piers is narrow.	The width and alignment of the paths (could move one direction of the path between the piers and parkways to widen each lane) will be reviewed during Detail Design.
Traffic Operations - Delay	Potential for traffic travel delays associated with construction staging on the Queensway (weekend full closures for bridge replacements) or on ramps or roadways for temporary roadway or sidewalk closures (i.e. at all 3 affected municipal roadways and 2 affected NCC Parkways).	Provide advance notice of all closures / lane reductions / detours. See Resource Table for preliminary detour routes. Prepare / implement Traffic Management Plan during construction including changeable message signs and incident detection. Limit lane closures (Queensway) during peak travel times.
Transit Operations	Disruption of OC Transpo bus service during municipal roadway closures and/or lane reductions.	Advance coordination with OC Transpo to identity construction impacts to transit service and to develop / communicate alternate service plans. See Resource Table for preliminary detour routes.
Emergency Services	Potential impact to emergency service routes / access due to closures / lane reductions.	Consider implications of multiple side street closures as part of project phasing. Prepare / implement Traffic Management Plan during construction. Ensure ongoing and advance communication with emergency service providers during construction.
Property Impacts - Permanent	Proposed private property purchases of Royal Oak Pub, Cyco's Cycle Shop/Greek on Wheels, McGovern Construction and Organic Salon.	Early communication / coordination with owner(s) and tenants to minimize disruption associated with property purchase.
Property Impacts – Temporary City of Ottawa Ballantyne Park and Federal Canal lands (During Construction)	Catherine Street south parking lane will temporarily be used during construction Ballantyne Park will be used as a construction site for the Rideau Canal and Main Street Bridges. Noise barrier replacement may affect properties along the recommended barrier limits, see the Noise exhibit. Use of Rideau Canal temporarily for construction	Potential for refinement during Detail Design and documentation of results in Design and Construction Report. Potential use of City of Ottawa property and Federal lands for construction staging areas. Early communication / coordination with owner(s) and tenants to minimize disruption. Reinstatement of any disturbed areas to original condition or better. Protection of all canal infrastructure and timing of works to avoid effects to navigation and winter skating season
Social Environment (During Construction)	Various properties within close proximity to the bridge sites and staging areas may experience some level of temporary impact during construction (e.g. construction noise, dust, visual intrusion etc.) These temporary effects affect: 7/9 Hawthorne Avenue, 15/17 Hawthorne Avenue, 19/21 Hawthorne Avenue, and 25 Hawthorne Avenue	Early communication / coordination with owner(s) and tenants to minimize disruption. Reinstatement of any disturbed areas to original condition or better.

Effects and Mitigation

Factor	Environmental Issues and Potential Effects	Proposed Mitigation Measures
Aesthetics	Bridge rehabilitation or replacement provides opportunities to enhance aesthetics of existing bridge sites.	If extent of work at any given site supports it, context sensitive design elements will be considered for inclusion.
Archaeology	Potential damage to or loss of archaeological artefacts.	Stage 1 Archaeological Assessment has not identified any areas of archaeological potential. If deeply buried archaeological remains are encountered during construction, construction will be stopped in the vicinity of the discovery and the contractor must notify the Ministry of Tourism, Sport and Culture.
Heritage	Special attention must be given to the Rideau Canal, as it was designated a National Historic Site of Canada in 1925 and a UNESCO World Heritage Site in 2007, and is owned by the Government of Canada and administered by Parks Canada. Short term effects on scenic entry routes and significant views (as described in the City of Ottawa OP Schedule 1 – Multi-Use Pathways and Scenic/Entry Routes – Urban) due to temporary staging areas and alteration of bridge design. Impacts to buildings with historical value at the intersection of Main Street and Hawthorne Avenue: a former gas station landmark (McGovern Construction). Early 19th century buildings in the local study area.	Consult with Federal and Parks Canada agencies to ensure acceptable design considerations for the bridge works, and to facilitate scenic and entry routes to the Rideau Canal to the City.
Noise	Noise from construction equipment and vehicles during construction.	Maintain equipment in good operating condition to prevent unnecessary noise. Restrict idling of equipment to the minimum necessary to perform the work. MTO to obtain approval for a noise by-law exemption for weekend / evening work as required. Contractor will be required to abide by noise control by-laws for day-to-day operations.
Contaminated Property	Potential for soil and/or groundwater contamination given historical land uses. Six sources of medium or high potential environmental contamination within the local study area, identified for the Contamination Overview Study (COS). Historic uses of numerous sites adjacent to Highway 417 as area of gasoline storage and manufacturing. One site listed under the Federal Contaminated Sites Inventory (FCSI) at Nicholas and Queensway: a five hectare site adjacent to Harvey street with soil contamination of PAHs (polycyclic aromatic hydrocarbons) and metal, metalloid, and organometallic compounds.	Develop a Soils Management Plan and/or a Phase II Environmental Site Assessment (ESA).

Effects and Mitigation

Factor	Environmental Issues and Potential Effects	Proposed Mitigation Measures
Erosion and Sediment	Potential for erosion / sedimentation during construction.	Standard erosion and sediment control measures to be incorporated into construction contract – including measure to prevent off-site transport of sediment and prompt restoration of disturbed areas.
Groundwater	Potential for dewatering at bridge sites for bridge replacement options.	If any subsurface works are determined during Detail Design and dewatering is anticipated , the impacts will be determined during Detail Design.
Management of Excess Materials	The project will result in the generation of waste asphalt, granulars, concrete and possibly earth materials.	Excess generation will be minimized through promoting contractor salvage, recycling and re-use in the contract tender documents.
Species at Risk – Birds	Potential disruption to migratory birds, nesting and / or species at risk (SAR) including: Chimney Swift (THR) - potential habitat within 200 m if brick chimneys of greater than 30 cm diameter and with rough interiors exist; Barn Swallow (THR) - potential habitat within 200 m if covered ledges and rough concrete exist; Peregrine Falcon (SC) – likely habitat due to waterbody of the Rideau Canal and River and proximity to ledges on tall buildings.	Conduct site 'sweeps' prior to any tree removals and prior to and during construction. Clear any vegetation outside of the breeding bird season which runs from April 15 – August 15, according to The Migratory Birds Convention Act. Failure to do so may result in triggering of the ESA. Ensure contractor's staff are trained to recognize potentially affected species and are required to notify authorities if any are encountered on site.
Tourism / Events	Potential construction disruption to various festivals / events	Schedule construction activities to limit / avoid disruption to major festivals / events (where possible.)
Utilities	Potential for impacts to existing utilities in the vicinity of the bridges, work sites or along access routes from staging areas.	Ensure advance coordination with utility companies and approval for all utility relocations / protections.
Vegetation	Removal of various trees and woody vegetation due to clearing for staging areas.	Maintain, as possible, mature tree specimens with a diameter (DBH) greater than 50 cm. Native lilacs in M1 should be maintained if possible. Most sites had no natural environmental features and are not likely to support native features. No trees would qualify for the City of Ottawa's Honour Role Trees list. No environmentally sensitive areas, ANSIs or significant wetlands noted by MNRF nor under the City's Official Plan.
Federal Permits and Approvals	The following are a list of permits and/or approvals that may be a requirement for this project: 1. Navigation Protection (Transport Canada) 2. In-water and Shoreline Works Permit (Parks Canada) 3. Federal Work Permit (NCC) 4. The project will follow the MTO/DFO/MNRF Protocol in regards to potential fisheries impacts	The NCC, Parks Canada, Transport Canada and DFO have been consulted with during this Preliminary Design EA to determine permitting requirements. Additional consultation will be commenced as part of the future Detail Design and contract preparation phase, necessary prior to submission of permit applications.
Design and Construction Report	In accordance with the MTO Class EA process, a Design and Construction Report (DCR) will be completed during Detail Design to outline the mitigation requirements and construction methods and impacts.	The future creation and public review of a DCR.

Next Steps

Following this meeting we will:

- Review all comments after PIC No. 2
- Review of refinements for inclusion in the TPA
- Finalize the Recommended Plan
- Prepare the Transportation Environmental Study Report (TESR)
- Present to City of Ottawa Transportation Committee
- Place the Study Completion Notice in local newspapers (the Citizen and Le Droit)
- 30-day public review period of the TESR
- Environmental Clearance
- Detail Design (future date)
- Construction (future date)

How can you remain involved in the Study?

- Request that your name/e-mail be added to the mailing list
- Provide a completed comment sheet
- Contact MTO or consultant representatives at any time
- Check the project website at **www.queenswaydowntownbridges.com**

Any of our representatives that are present can assist you with the above activities.

Thank you for your participation in tonight's meeting.

Your input into this study is valuable and appreciated.

Please provide your completed comment form on or before

May 10, 2019.

All information is collected in accordance with the *Freedom of Information and Protection of Privacy Act.*

Bienvenue!

Étude de conception préliminaire et d'évaluation environnementale du projet de réfection et de remplacement des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main

Projet groupé (GWP) nº 4170-13-00

Bienvenue à la deuxième séance d'information publique (SIP) de l'Étude de conception préliminaire et d'évaluation environnementale (EE) du projet de réfection et de remplacement des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main. **Veuillez signer la feuille de présence et vous procurer une feuille de commentaires à la table d'inscription.**

Cette séance a pour but de présenter les informations suivantes :

- Survol du projet et zone d'étude
- Processus et calendrier de réalisation de l'EE
- Recommandations techniques et plan d'atténuation
- Prochaines étapes
- Collecte des commentaires du public

Si vous avez des questions au sujet du matériel de présentation, des documents de référence ou de tout autre aspect de cette étude, n'hésitez pas à vous adresser aux représentants du MTO ou aux membres de l'équipe d'ingénierie-conseil ici présents.

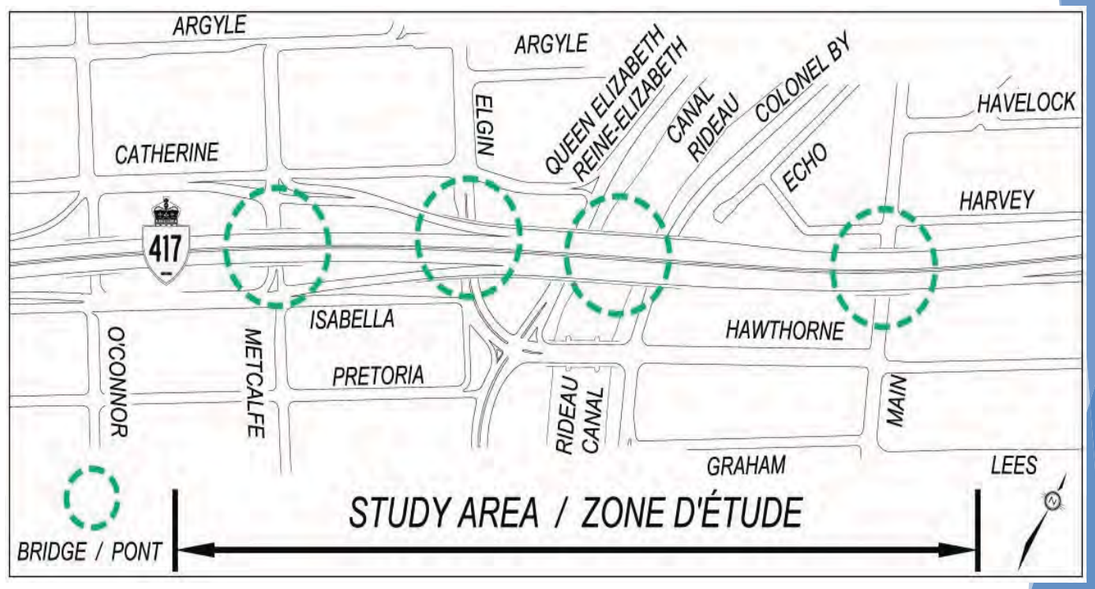
Nous vous encourageons à exprimer vos idées, commentaires et préoccupations au sujet des informations présentées sur les panneaux. Veuillez déposer votre feuille de commentaires remplie dans la boîte prévue à cette fin, ou la faire parvenir à l'adresse postale ou à l'adresse de courriel indiquées au bas de la feuille au plus tard le **10 mai 2019**.

Les personnes intéressées peuvent donner leurs commentaires par écrit tout au long du processus d'EE. Tous les commentaires recueillis seront colligés selon les exigences de la *Loi canadienne sur l'évaluation environnementale* et la *Loi sur l'accès à l'information et la protection de la vie privée* et, à l'exception des renseignements personnels, relèveront du domaine public.

Introduction

Le MTO mène une étude de conception préliminaire et d'évaluation environnementale en vue d'établir des plans de gestion pour 7 ponts situés à quatre emplacements le long de l'autoroute 417 à Ottawa, soient la rue Metcalfe, la rue Elgin, le canal Rideau et la rue Main. La zone d'étude est illustrée ci-après. Les scénarios de planification envisagés incluent la réfection et le remplacement des ponts.

Un rapport préliminaire de plan d'étude (RPPE) a été préparé afin de proposer un énoncé des enjeux et des possibilités, un processus de planification et un plan de travail, les scénarios possibles, les méthodes de travail, un processus d'évaluation, un programme de consultation du public, des organismes concernés et des peuples autochtones, une liste de documents de référence et les étapes à suivre au-delà de l'étude. Le rapport définit les principales tâches à réaliser pour compléter l'étude, ainsi que les détails du processus de planification et de conception de l'EE. Le RPPE a été finalisé après la première séance d'information publique. Il est disponible à la table de documentation* et sur le site web du projet : www.queenswaydowntownbridges.com



***Le rapport final du plan d'étude est disponible à la table de documentation.**

Études antérieures

Les deux études antérieures ci-après sont jugées d'intérêt particulier pour ce projet :

2007 : Étude d'évaluation environnementale et de conception préliminaire de l'autoroute 417 entre l'autoroute 416 et le chemin Anderson [*Highway 417, from Highway 416 easterly to Anderson Road, Environmental Assessment and Preliminary Design Study*] (GWP 663-930-00) – Cette évaluation environnementale a permis d'établir le plan à long terme de l'autoroute 417 à Ottawa.

2016 : Étude d'évaluation environnementale et de conception préliminaire des ponts du secteur intermédiaire du Queensway d'Ottawa entre l'avenue Holland et la rue O'Connor [*Ottawa Queensway Mid-town Bridges from Holland Avenue to O'Connor Street, Environmental Assessment and Preliminary Design Study*] (GWP 4075-11-00) – Cette évaluation environnementale a défini les plans de gestion des projets de réfection et de remplacement de 23 structures situées à l'ouest de la zone d'étude actuelle.

Les REET de 2007 et de 2016 sont disponibles à la table de documentation.

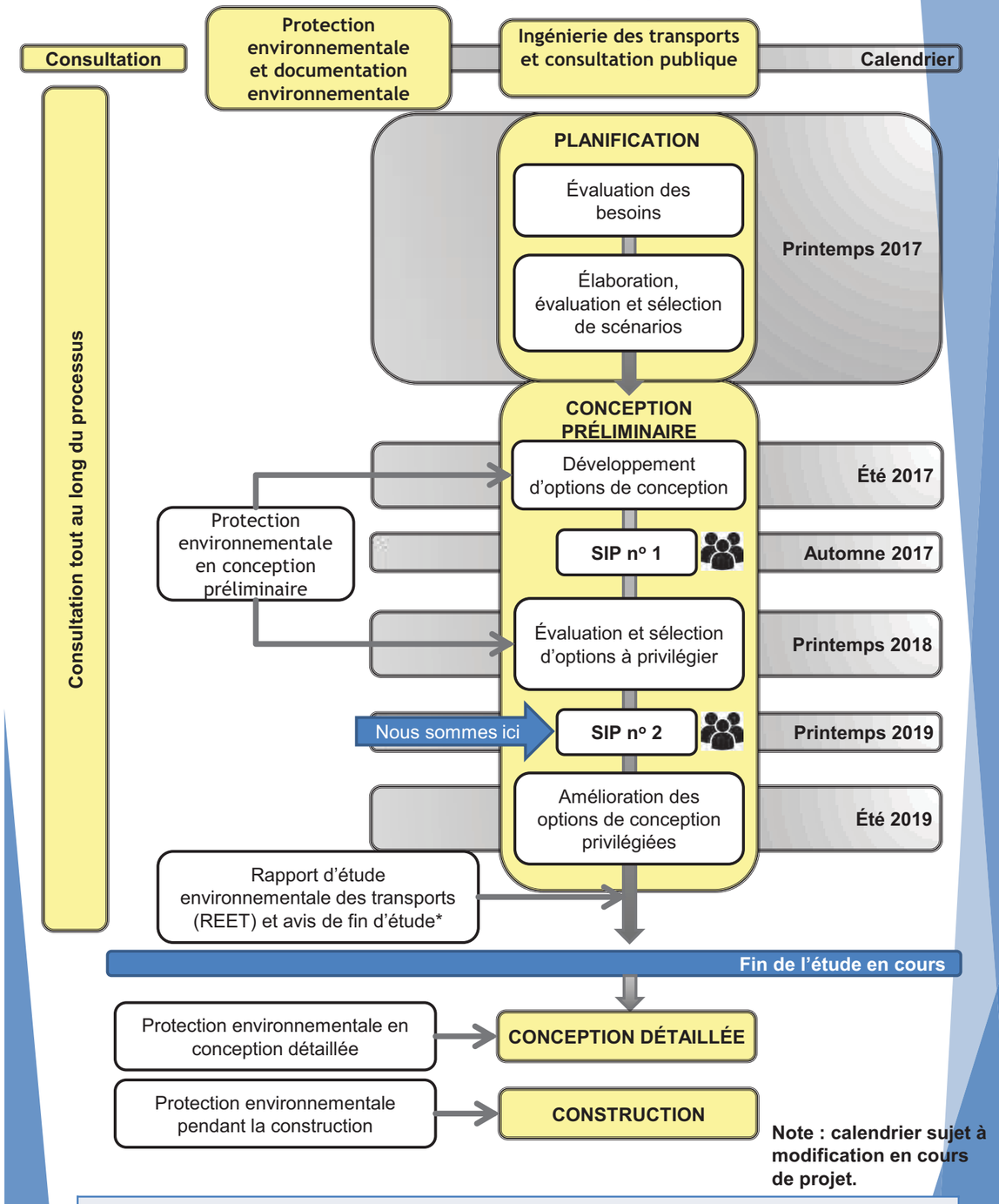
Survol du processus d'EE de portée générale du MTO pour les projets du groupe B

Ce projet est mené selon les exigences du ministère des Transports de l'Ontario (MTO) pour les évaluations environnementales de portée générale pour les projets de transports du groupe B (2000). Conformément à ces exigences, le projet produira les éléments livrables suivants :

- Un rapport d'étude environnementale des transports (REET) sera préparé et déposé auprès du bureau régional du ministère de l'Environnement, de la Protection de la nature et des Parcs pour la période d'examen public de 30 jours.
- Un avis public sera publié dans des journaux locaux (quotidiens de langues française et anglaise) au moment du dépôt du REET. Cet avis public précisera les endroits additionnels où les documents pourront être visionnés.

Nous vous encourageons à communiquer avec l'équipe de projet du MTO si vous avez des questions ou des préoccupations au sujet de cette étude. Si, après avoir consulté le personnel du MTO, vos préoccupations demeurent non résolues, vous avez le droit de demander que le projet soit soumis à une évaluation environnementale distincte. La décision finale à cet égard revient au ministre de l'Environnement, de la Protection de la nature et des Parcs.

Survol du processus d'EE de portée générale du MTO pour les projets du groupe B



***Le REET sera disponible pour examen et commentaires du public pendant 30 jours.**

Énoncé des enjeux et des possibilités

Enjeu

La construction des sept (7) ponts de l'autoroute 417 au centre-ville d'Ottawa remonte à l'aménagement initial de l'autoroute entre 1959 et 1968. Le pont du canal Rideau arrive à la fin de sa vie utile. Contrairement aux 23 ponts situés plus à l'ouest, il n'existe aucun plan individuel ou coordonné de gestion de la réfection ou du remplacement de ces 7 ponts permettant d'assurer l'opération sécuritaire continue de l'autoroute dans les années à venir.

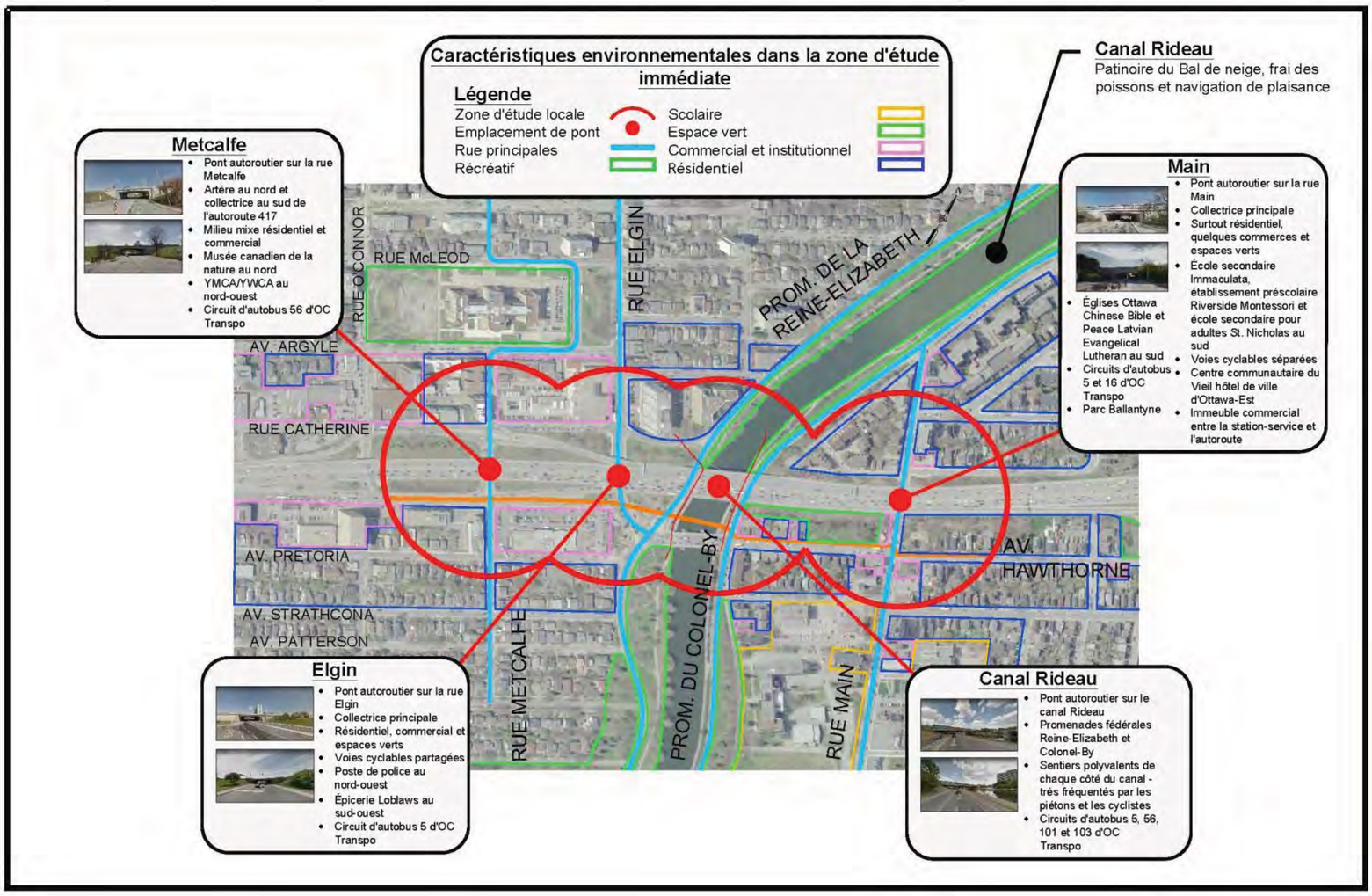
Possibilités

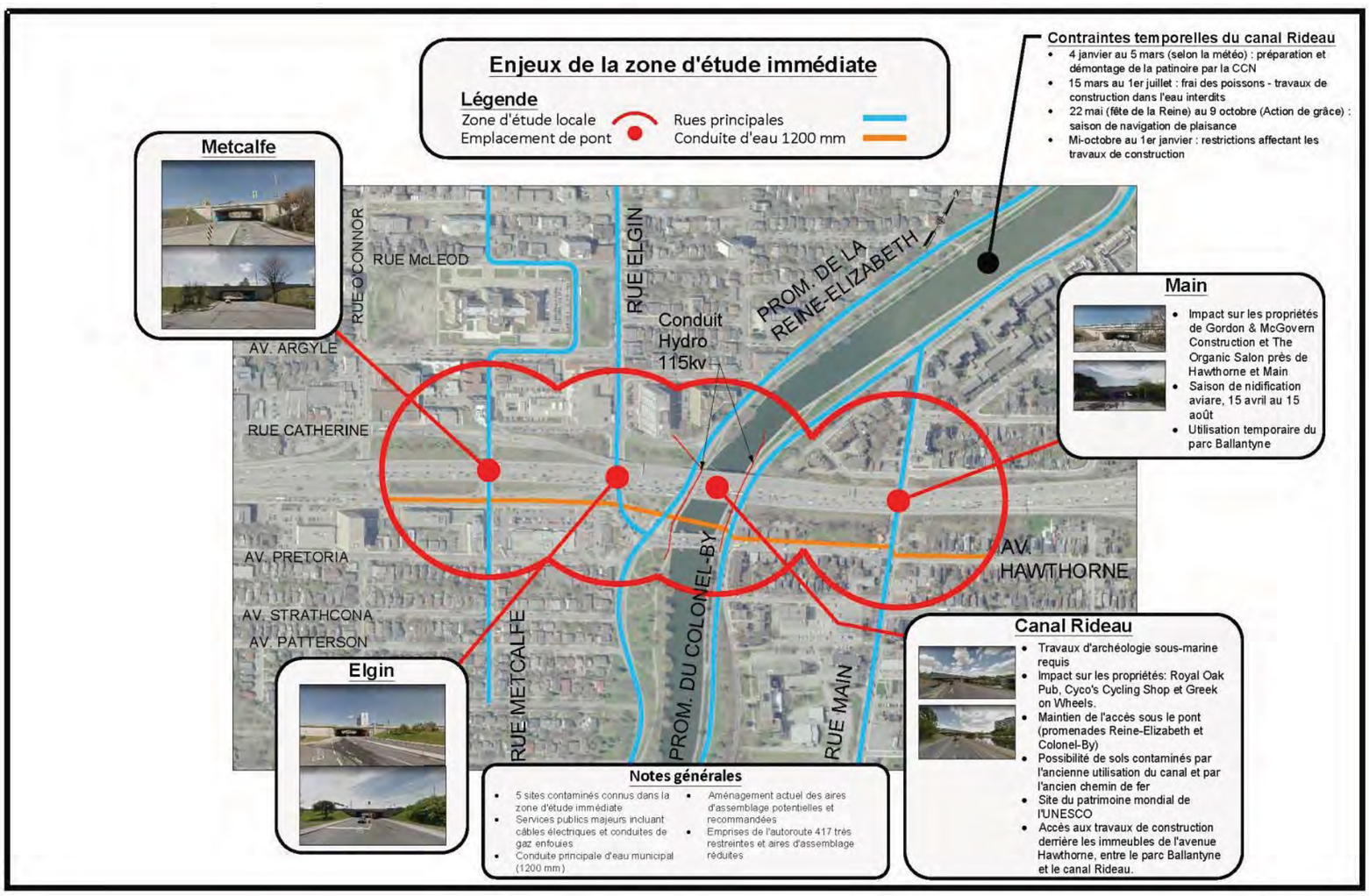
- Établir un plan de gestion pour les 7 ponts de l'autoroute 417 situés entre la rue Main et la rue Metcalfe, poursuivant ainsi le programme du MTO qui consiste à établir des plans de gestion des ponts d'ouest en est le long de l'autoroute.
- Coordonner les plans de gestion pour les 7 ponts en tenant compte des exigences en matière de conception, de gestion de la circulation et de construction.
- Coordonner les travaux des 23 ponts situés à l'ouest avec ceux des 7 ponts du centre-ville (atténuation des impacts environnementaux, gestion de la circulation, gestion des aires d'assemblage, etc.)

Identification et évaluation des types de ponts

Les sept ponts du centre-ville sont divisés en deux groupes, selon le type de structure :

- Ponts à cadre rigide (rue Metcalfe, rue Elgin et rue Main) : comportent une structure à simple travée continue (sans joints ni culées).
- Pont du canal Rideau : pont à travées multiples à caractère patrimonial.


Caractéristiques environnementales dans la zone d'étude immédiate
Légende
Zone d'étude locale
Emplacement de pont
Rue principales
Récréatif
Scolaire
Espace vert
Commercial et institutionnel
Résidentiel
Canal Rideau
Patinoire du Bal de neige, frai des poissons et navigation de plaisance
Metcalfe
Pont autoroutier sur la rue Metcalfe
Artère au nord et collectrice au sud de l'autoroute 417
Milieu mixe résidentiel et commercial
Musée canadien de la nature au nord
YMCA/YWCA au nord-ouest
Circuit d'autobus 56 d'OC Transpo
Main
Pont autoroutier sur la rue Main
Collectrice principale
Surtout résidentiel, quelques commerces et espaces verts
École secondaire Immaculata, établissement préscolaire Riverside Montessori et école secondaire pour adultes St. Nicholas au sud
Voies cyclables séparées
Centre communautaire du Vieil hôtel de ville d'Ottawa-Est
Immeuble commercial entre la station-service et l'autoroute
Églises Ottawa Chinese Bible et Peace Latvian Evangelical Lutheran au sud
Circuits d'autobus 5 et 16 d'OC Transpo
Parc Ballantyne
RUE O'CONNOR
RUE McLEOD
RUE ELGIN
PROM. DE LA REINE-ELIZABETH
AV. ARGYLE
RUE CATHERINE
AV. PRETORIA
AV. STRATHCONA
AV. PATTERSON
RUE METCALFE
PROM. DU COLONEL-BY
AV. HAWTHORNE
RUE MAIN
Elgin
Pont autoroutier sur la rue Elgin
Collectrice principale
Résidentiel, commercial et espaces verts
Voies cyclables partagées
Poste de police au nord-ouest
Épicerie Loblaws au sud-ouest
Circuit d'autobus 5 d'OC Transpo
Canal Rideau
Pont autoroutier sur le canal Rideau
Promenades fédérales Reine-Elizabeth et Colonel-By
Sentiers polyvalents de chaque côté du canal - très fréquentés par les piétons et les cyclistes
Circuits d'autobus 5, 56, 101 et 103 d'OC Transpo


Enjeux de la zone d'étude immédiate
Légende
Zone d'étude locale
Emplacement de pont
Rues principales
Conduite d'eau 1200 mm
Contraintes temporelles du canal Rideau
4 janvier au 5 mars (selon la météo) : préparation et démontage de la patinoire par la CCN
15 mars au 1er juillet : frai des poissons - travaux de construction dans l'eau interdits
22 mai (fête de la Reine) au 9 octobre (Action de grâce) : saison de navigation de plaisance
Mi-octobre au 1er janvier : restrictions affectant les travaux de construction
Metcalfe
Main
Impact sur les propriétés de Gordon & McGovern Construction et The Organic Salon près de Hawthorne et Main
Saison de nidification aviare, 15 avril au 15 août
Utilisation temporaire du parc Ballantyne
Conduit Hydro 115kv
RUE O'CONNOR
RUE McLEOD
RUE ELGIN
PROM. DE LA REINE-ELIZABETH
AV. ARGYLE
RUE CATHERINE
AV. PRETORIA
AV. STRATHCONA
AV. PATTERSON
RUE METCALFE
PROM. DU COLONEL-BY
AV. HAWTHORNE
RUE MAIN
Elgin
Canal Rideau
Travaux d'archéologie sous-marine requis
Impact sur les propriétés: Royal Oak Pub, Cyco's Cycling Shop et Greek on Wheels.
Maintien de l'accès sous le pont (promenades Reine-Elizabeth et Colonel-By)
Possibilité de sols contaminés par l'ancienne utilisation du canal et par l'ancien chemin de fer
Site du patrimoine mondial de l'UNESCO
Accès aux travaux de construction derrière les immeubles de l'avenue Hawthorne, entre le parc Ballantyne et le canal Rideau.
Notes générales
5 sites contaminés connus dans la zone d'étude immédiate
Services publics majeurs incluant câbles électriques et conduites de gaz enfouies
Conduite principale d'eau municipal (1200 mm)
Aménagement actuel des aires d'assemblage potentielles et recommandées
Emprises de l'autoroute 417 très restreintes et aires d'assemblage réduites

Consultations à ce jour

Nous avons consulté les intervenants suivants dans le cadre de cette étude :

- Peuples autochtones
  - Avis de début d'étude et SIP
- Commission de la capitale nationale (CCN) et son Comité consultatif de l'urbanisme, du design et de l'immobilier (CCUDI)
- Parcs Canada
- Transports Canada
- Ville d'Ottawa
- Ministère de l'Environnement, de la Protection de la nature et des Parcs
- Ministère du Tourisme, de la Culture et du Sport
- Propriétaires immobiliers/commerciaux
- Associations communautaires
- Public
  - Avis de lancement d'étude dans les journaux quotidiens de langues française et anglaise
  - Site web de l'étude
  - SIP nº 1, le 5 décembre 2017

Scénarios possibles – scénarios de planification

Les « scénarios possibles » englobent les approches ou méthodes répondant à l'énoncé des enjeux et des possibilités associées au projet. Cette étape est une exigence obligatoire du processus d'EE de portée générale du MTO. Dans cette étude, l'attention est portée sur quatre emplacements. Les scénarios possibles reflètent une gamme variée de stratégies, incluant le statu quo (ne rien faire).

X **Scénario 1** : maintien du statu quo sans action significative pour gérer les structures vieillissantes. Cette approche accepte la détérioration continue de ces ponts au cours d'un horizon de planification de 20 ans.
Scénario NON recommandé.

Scénario 2 : conformément aux dispositions des EE de portée générale du MTO, ce scénario consisterait en des aménagements de transport provinciaux neufs ou améliorés (rénovés). Puisque ces ponts existent déjà, ce scénario peut être intitulée simplement « gestion des infrastructures de ponts ».

✓ **Scénario 2a** : rénover les ponts existants dans le but de prolonger leur vie utile, incluant des améliorations structurales requises pour respecter les nouvelles normes parasismiques. **Scénario recommandé comme option de conception préliminaire.**

✓ **Scénario 2b** : remplacer les ponts existants par de nouvelles structures. **Scénario recommandé comme option de conception préliminaire**.

Le rapport d'évaluation des scénarios possibles est disponible à la table de documentation.

options de conception préliminaire – Ponts à cadre rigide

Les scénarios retenus pour les ponts à cadre rigide (rue Metcalfe, rue Elgin et rue Main) reposent sur une stratégie de gestion des ponts axée sur la réfection ou le remplacement des structures. Pour chaque emplacement, quatre types d'intervention ont été examinées.

Les **options de conception préliminaire** envisagées sont les suivantes **:**

- Réfection rapide
- Réfection conventionnelle
- Remplacement conventionnel
- Remplacement rapide

Diverses aires d'assemblage sont présentement à l'étude pour le remplacement rapide. Elles sont présentées sur les panneaux qui suivent.

Des **plans de gestion de la circulation** sont présentement à l'étude pour les options basées sur le remplacement conventionnel (construction sur place, réduction du nombre de voies de circulation sur l'autoroute 417 et certaines rues municipales en période de construction) et le remplacement rapide (fermeture complète de l'autoroute 417 pour une fin de semaine durant les travaux de remplacement). Ces options sont décrites en détail dans le Rapport de planification des travaux routiers* qui est disponible à la table de documentation.

***Le Rapport de planification des travaux routiers est disponible à la table de documentation.**

Aires d'assemblage potentielles des structures à cadre rigide – rue Main

Site	Potentiel pour le remplacement rapide de pont (RRP)
✓ M-1 Adjacent à l'avenue Hawthorne, à 10 m seulement à l'ouest de la rue Main (parc Ballantyne)	• Adéquat → Accès direct possible à la rue Main, aucun impact sur les résidences à proximité → Aire de travail acceptable → Pentes du site acceptables
M-2 Rue Graham (école des adultes)	• Médiocre → Non conforme aux exigences de dimensions et de superficie → Trajet relativement long entre l'aire d'assemblage et l'emplacement final, comparé au site M-1 → Déplacement requis des câbles aériens le long de la rue Main
M-3 (Parc de stationnement de l'école secondaire Immaculata)	• Médiocre → Non conforme aux exigences de dimensions et de superficie → Rue Main trop étroite pour le transport de la structure → Importants travaux d'excavation requis pour améliorer la pente entre ce site et la rue Main → Impacts sur les câbles aériens des deux côtés de la rue Main
M-4 Terrains du MTO sur le côté est de la rue Main, juste au sud de l'autoroute	• Médiocre → Non conforme aux exigences de dimension de la travée → Difficulté d'accès pour assembler deux structures dos à dos
M-5 Emprise du MTO juste au nord de l'autoroute, du côté est de la rue Main	• Médiocre → Non conforme aux exigences de dimensions de l'emprise → Impacts sur les résidences à proximité → Perte de places de stationnement sur rue
M-6 Propriétés résidentielles au nord de l'autoroute, du côté ouest de la rue Main	• Médiocre → Impacts importants sur les propriétés résidentielles (nécessité d'acquérir jusqu'à 6 résidences) → Répond aux exigences de pentes du site
M-7 Terrain de football de l'école secondaire Immaculata	• Médiocre → Rue Main trop étroite pour le transport de la structure → Perte d'utilisation du terrain de football / impacts sur la communauté

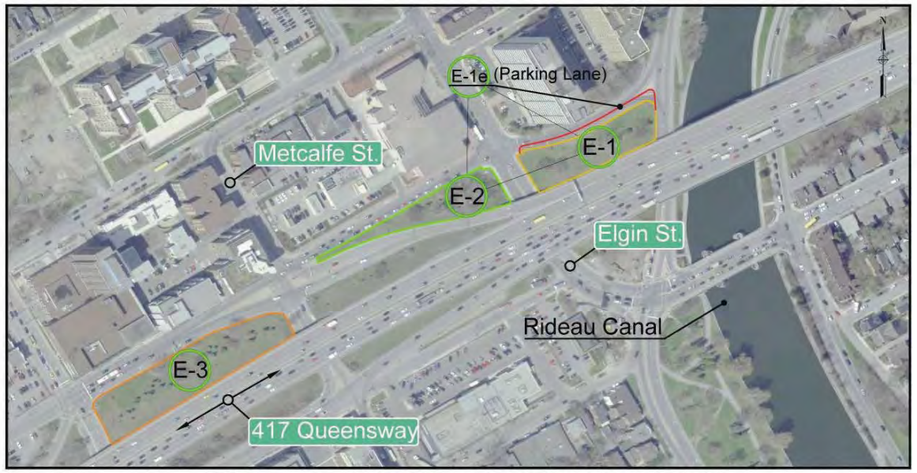
La note technique sur l'évaluation des aires d'assemblage des structures à cadre rigide est disponible à la table de documentation.

Aires d'assemblage potentielles des structures à cadre rigide – rues Elgin et Metcalfe

Site	Potentiel pour le remplacement rapide de pont (RRP)
✓ E-1 Côté nord de l'autoroute 417, à l'est de la rue Elgin	• Adéquat → Accès direct aux rues Elgin et Catherine → Aire de travail acceptable → Court trajet de déplacement → Aucun impact sur l'itinéraire de détour lorsque l'autoroute sera fermée → Pentes du site acceptables
✓ E-1e (agrandi pour inclure la rue Catherine et son aire de stationnement)	• Adéquat → Meilleur accès à la structure du canal Rideau pour les grues et l'équipement de transport
E-2 Adjacent à la rue Elgin, du côté ouest	• Médiocre (pour l'entière structure) → Non conforme aux exigences de dimensions et de superficie pour un site de remplacement intégral de structure → Court trajet entre l'aire d'assemblage et l'emplacement du pont → Nécessité de relocaliser les câbles aériens → Aucun impact sur l'itinéraire de détour
✓ E-3 Adjacent à la rue Metcalfe, immédiatement à l'ouest	• Adéquat → Accès direct à la structure de la rue Metcalfe → Possibilité d'accommoder la structure de la rue Elgin si E-1 devient indisponible en raison de contraintes de temps → Aucun impact sur la communauté
E-4 Terrains du MTO du côté est de la rue Metcalfe, entre l'autoroute et la bretelle de sortie vers la rue Catherine	• Médiocre → Non conforme aux exigences de dimensions de la travée → Risque de collision causée par l'accès des véhicules de construction au site à partir de la bretelle de sortie

La note technique sur l'évaluation des aires d'assemblage des structures à cadre rigide est disponible à la table de documentation.

RECOMMENDED STAGING SITES - RIGID FRAME



Legend

Recommended Staging Site

Note

See Memorandum on resource table. Preliminary Review of Staging Area Sites for Rapid Bridge Replacement Options for Metcalfe Street, Elgin Street and Main Street Bridges.

RECOMMENDED STAGING SITES FOR THE METCALFE STREET AND ELGIN STREET BRIDGES



RECOMMENDED STAGING SITES FOR MAIN STREET BRIDGE

Options de conception préliminaire – Pont du canal Rideau

Les scénarios retenus pour la stratégie de gestion du pont du canal Rideau impliquent la réfection ou le remplacement de la structure.

Les **options de conception préliminaires** envisagées sont les suivantes **:**

- **option A** – Remplacement – Pont à poutres d'acier ou de béton de profondeur constante sur les piliers existants
- **option B** – Remplacement – Pont à poutres d'acier de profondeur variable sur les piliers existants
- **option C** – Remplacement – Pont extradossé en béton sur de nouveaux piliers
- **option D** – Remplacement – pont à poutres variables sur de nouveaux piliers derrière les murs du canal
- **option E** – Remplacement – Pont à travée unique (aucun pilier)
- **option F** – Réfection conventionnelle (utilisé comme cadre de référence)

Des **options de planification de la construction** pour les options axées sur le remplacement des ponts sont décrites en détail dans le Rapport de planification des travaux routiers disponible à la table de documentation. Ces options incluent des scénarios de gestion de la circulation pour les scénarios de remplacement de pont conventionnel (construction sur place) et rapide (fermeture temporaire de l'autoroute 417).

Le Rapport de planification des travaux routiers est disponible à la table de documentation.

Pont du canal Rideau Illustration des options

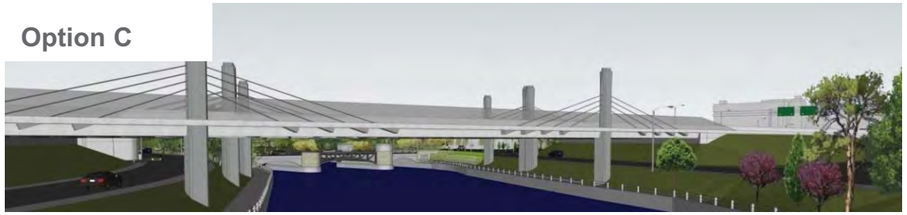
Option A



Option B



Option C



Option D ✓



Option E



Option F : Réfection de la structure actuelle (NON ILLUSTRÉ)

Toutes ces options ont été retenues aux fins d'évaluation.

Pont du canal Rideau
Méthodes de construction

x **Méthode 1 :** Aire d'assemblage en retrait et utilisation de barges pour l'enlèvement de la structure actuelle et la mise en place de la nouvelle structure. Construction conventionnelle par bandes. Méthode non retenue en raison de contraintes du canal.

x **Méthode 2A :** Construction conventionnelle par bandes. Méthode non retenue en raison de difficultés liées à la gestion de la circulation.

✓ **Méthode 2B :** Construction conventionnelle par bandes permettant la circulation routière sur le joint entre les ponts. Méthode retenue.

✓ **Méthode 2C :** Construction conventionnelle par bandes. Méthode retenue.

x **Méthode 3A :** Remplacement rapide de la structure entière à l'aide de transporteurs modulaires autopropulsés (TMA) à partir des aires d'assemblage utilisés pour les structures à cadre rigide. Méthode non retenue (impacts importants sur les propriétés environnantes et la circulation routière).

x **Méthode 3B :** Remplacement rapide en trois sections distinctes à l'aide de TMA à partir des aires d'assemblage utilisés pour les structures à cadre rigide. Méthode non retenue (impacts importants sur les propriétés environnantes et la circulation routière).

x **Méthode 3C :** Remplacement rapide en trois sections distinctes à l'aide de TMA à partir du parc Ballantyne et des aires d'assemblage utilisés pour les structures à cadre rigide. Méthode non retenue (impacts importants sur les propriétés environnantes et la circulation routière).

x **Méthode 3D :** Remplacement rapide en trois sections distinctes à l'aide de TMA à partir du parc Ballantyne et des aires d'assemblage utilisés pour les structures à cadre rigide. Méthode non retenue (impacts importants sur les propriétés environnantes et la circulation routière).

✓ **Méthode 4 :** Démantèlement sur place, puis soulèvement et glissement à partir des bords (remplacement de deux ponts la même fin de semaine). Méthode retenue.

✓ **Méthode 5 :** Retrait séquentiel par soulèvement et glissement, un pont à la fois (remplacement de deux ponts en deux ans, un pont par année. Méthode retenue.

✓ **Méthode 6 :** Transport par TMA jusqu'à la rue Nicholas. Technique innovatrice consistant à construire une plateforme sous la structure en vue de lever les TMA et les trois travées une à une jusqu'à la hauteur de l'autoroute. Les TMA apportent les sections de pont jusqu'à la rue Nicholas et retournent avec les nouvelles sections. Nécessite des piliers de soutènement dans le canal. Méthode retenue.

La note technique sur l'évaluation préliminaire des méthodes de construction du pont du canal Rideau est disponible à la table de documentation.

Évaluation des options
Synthèse

Suite à une évaluation préliminaire, certaines des options ci-dessous ont été retenues pour une évaluation détaillée (notées d'un « ✓ ») :

Options pour les ponts à cadre rigide

- ✓ Réfection rapide
- ✓ Réfection conventionnelle
- ✓ Remplacement rapide
- ✓ Remplacement conventionnel

Options pour le pont du canal Rideau

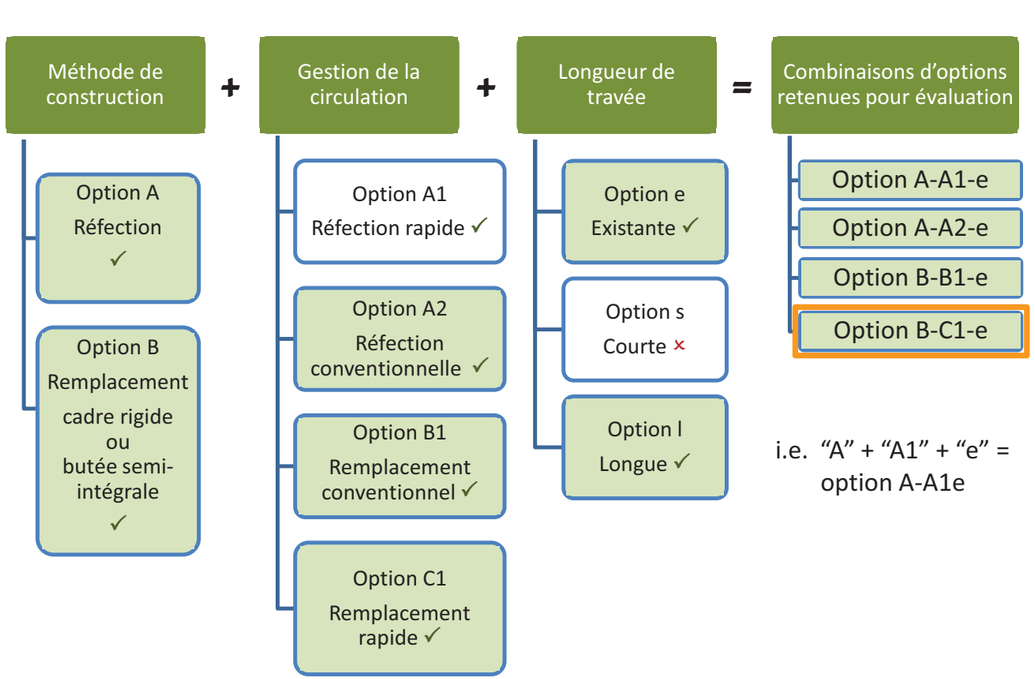
- ✓ Option A : remplacement, pont à poutres sur les piliers existants
- ✓ Option B : remplacement, pont à poutres sur les piliers existants
- ✓ Option C : remplacement, pont extradossé en béton sur de nouveaux piliers
- ✓ Option D : remplacement, pont à poutres sur de nouveaux piliers
- ✓ Option E : remplacement, pont à travée unique (aucun pilier)
- ✓ Option F : réfection conventionnelle

Méthodes de construction sur le canal Rideau

- x Méthode 1 : retrait avec barges
- x Méthode 2A : construction conventionnelle par bandes
- ✓ Méthode 2B : construction conventionnelle par bandes
- ✓ Méthode 2C : construction conventionnelle par bandes
- x Méthode 3A : remplacement rapide avec TMA (structure entière)
- x Méthode 3B : remplacement rapide avec TMA (par sections)
- x Méthode 3C : remplacement rapide avec TMA (par sections)
- x Méthode 3D : remplacement rapide avec TMA (par sections)
- ✓ Méthode 4 : soulèvement et glissement, 2 ponts en une fin de semaine
- ✓ Méthode 5 : soulèvement et glissement, un pont par année
- ✓ Méthode 6 : transport par TMA jusqu'à Nicholas, aller-retour

Évaluation des options
Ponts à cadre rigide

L'évaluation des options de conception et des méthodes de construction inclut différentes options de remplacement et de réfection des ponts à cadre rigide.
À chaque emplacement, les combinaisons d'options sont identifiées de la façon suivante : méthode de construction + option de gestion de la circulation + longueur de travée = numéro de combinaison d'options.
Le diagramme ci-dessous montre les options de conception préliminaire des ponts à cadres rigides qui ont été retenues pour l'évaluation détaillée après l'évaluation préliminaire.



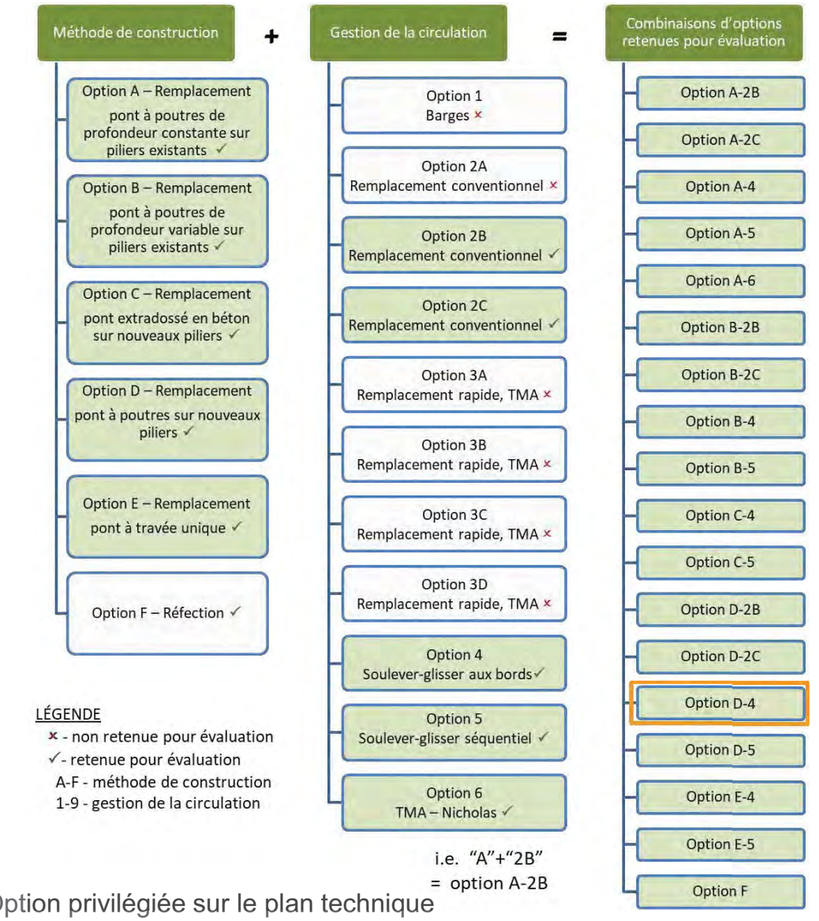
i.e. "A" + "A1" + "e" = option A-A1e

Option privilégiée sur le plan technique

Le rapport d'analyse et d'évaluation est disponible à la table de documentation

Évaluation des options
Pont du canal Rideau

L'évaluation des options de conception et des méthodes de construction inclut différentes options de remplacement et de réfection.
Les options combinées sont identifiées de la façon suivante : méthode de construction + option de gestion de la circulation + longueur de travée = numéro de combinaison d'options.
Le diagramme ci-dessous montre les options de conception préliminaire retenues pour l'évaluation détaillée après l'évaluation préliminaire.



i.e. "A"+"2B" = option A-2B

Option privilégiée sur le plan technique

Le rapport d'analyse et d'évaluation est disponible à la table de documentation

Analyse et évaluation des options de conception préliminaire

L'analyse et l'évaluation des options de conception préliminaire ont été réalisées à l'aide d'une méthode d'évaluation exhaustive appelée MATS (de l'anglais *Multi-Attribute Trade-Off System*). Neufs groupes de facteurs d'évaluation ont été pris en compte :

- Transport
- Milieu naturel
- Environnement social
- Conception adaptée au contexte
- Richesses patrimoniales
- Environnement économique
- Aménagement urbain et propriété
- Structure
- Coût

Les groupes de facteurs se composent de critères mesurables (sous-facteurs) permettant de déterminer les avantages et les impacts pertinents. Ils définissent une unité de mesure et les différences relatives entre les options. Les données d'évaluation ont été tirées de revues de la littérature et d'inventaires environnementaux réalisés aux fins du projet.

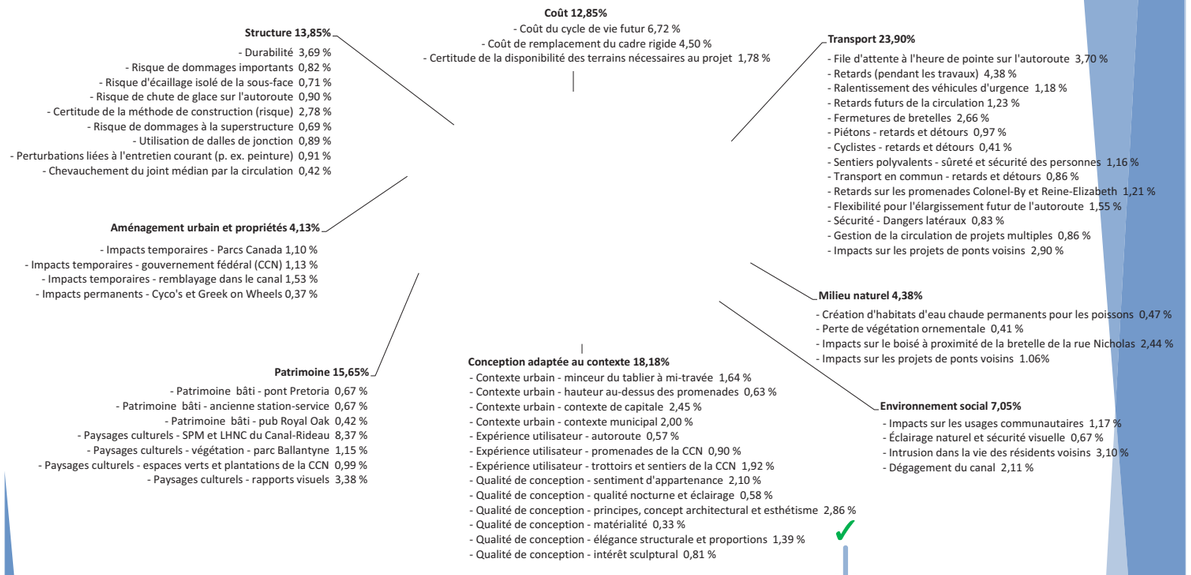
La méthode MATS met l'accent sur les différences entre les options, aborde la complexité des données de base recueillies et offre un processus décisionnel retraçable, justifiable et reproductible. Chaque option se voit assigné une note établie l'aide d'une relation mathématique prenant en compte les impacts. Cela élimine toute possibilité d'opinion subjective de la part des personnes impliquées dans le processus d'évaluation.

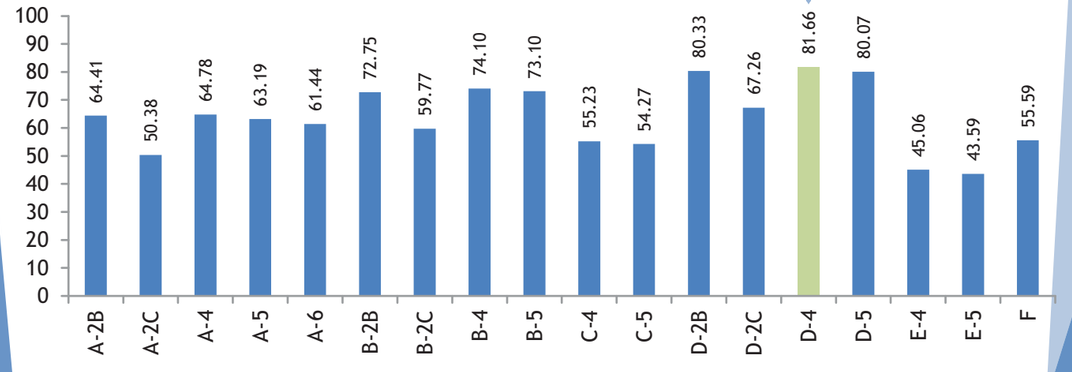
Les résultats pour le canal Rideau sont présentés sur les panneaux suivants à titre d'exemple. Tous les autres résultats MATS se trouvent à la table de documentation.

Le rapport d'analyse et d'évaluation est disponible à la table de documentation

Analyse et évaluation des options de conception – Pont du canal Rideau

La pondération et le classement des critères d'évaluation pour le pont du canal Rideau sont présentés ci-dessous. La méthodologie et les résultats pour les ponts à cadre rigide sont disponibles à la table de documentation.





Le rapport d'analyse et d'évaluation est disponible à la table de documentation

Option privilégiée pour les ponts à cadre rigide

Les ponts à cadre rigide sont recommandés pour le remplacement à l'aide de la technologie de remplacement rapide de ponts. Une fois les autorisations nécessaires obtenues pour le rapport d'étude environnementale des transports, l'étude passera à la conception détaillée, la préparation, l'attribution du contrat et la construction au cours des prochaines années (travaux supplémentaires non couverts par la présente étude).

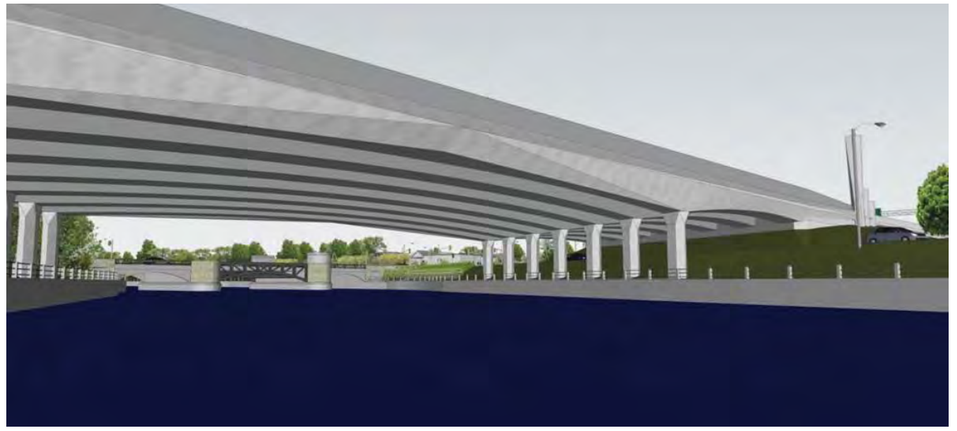
Travaux à réaliser :

- Fermetures de rues municipales pour les travaux préparatoires
- Fermetures de l'autoroute 417 certains week-ends pour le démantèlement et le remplacement rapides des ponts
- Construction des nouveaux ponts aux aires d'assemblage à proximité
- Remise en état des aires d'assemblage et des zones de travail connexes

Option privilégiée pour le pont du canal Rideau

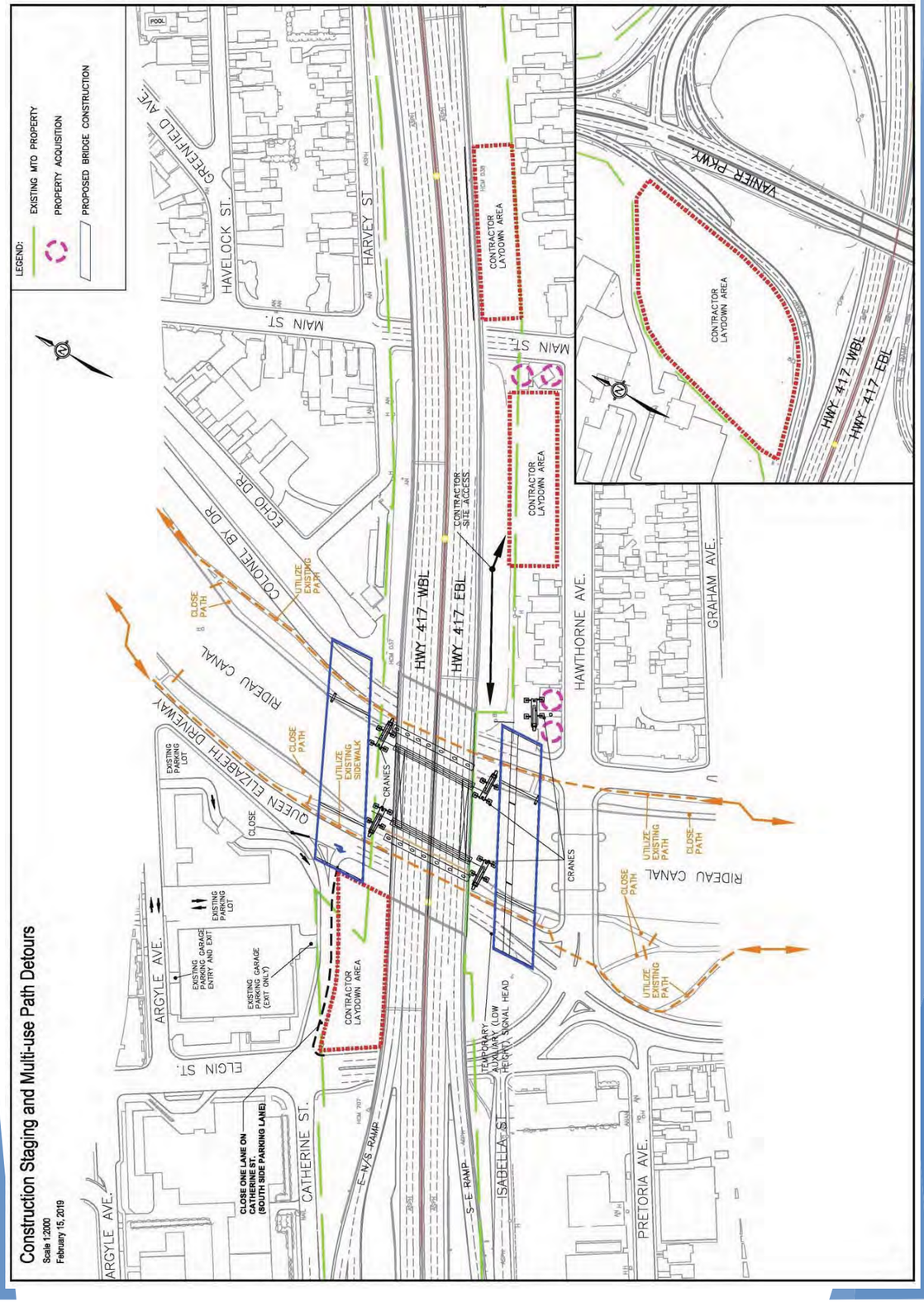
L'option D-4 est l'option privilégiée sur le plan technique pour le pont du canal Rideau : remplacement par un pont à poutres sur de nouveaux emplacements de piliers par soulèvement et glissement à partir des deux côtés. La conception sera développée davantage lors de l'étape de la conception détaillée.











Évaluation du bruit

Deux études ont été réalisées pour évaluer le bruit :

1) État des écrans antibruit existants
2) Évaluation du bruit afin d'étudier les impacts sonores de la réfection ou du remplacement des ponts.

Écrans antibruit existants

Les écrans antibruit existants sont en piètre état; leur acier est rouillé. Elles ont 4 m de haut et sont arrivées à la fin de leur durée de vie utile. Il est recommandé de les remplacer.

Évaluation du bruit aux fins du plan de gestion des ponts

Le document *Environmental Guide for Noise* du MTO et du MECC (MECP) a été utilisé pour réaliser l'évaluation en deux étapes :

1. Examen des niveaux sonores existants (à l'horizon de planification de 2025) et 10 ans après la construction (2035);
2. Étude des mesures d'atténuation pour des sites récepteurs représentatifs subissant des niveaux sonores supérieurs à 65 dBA.

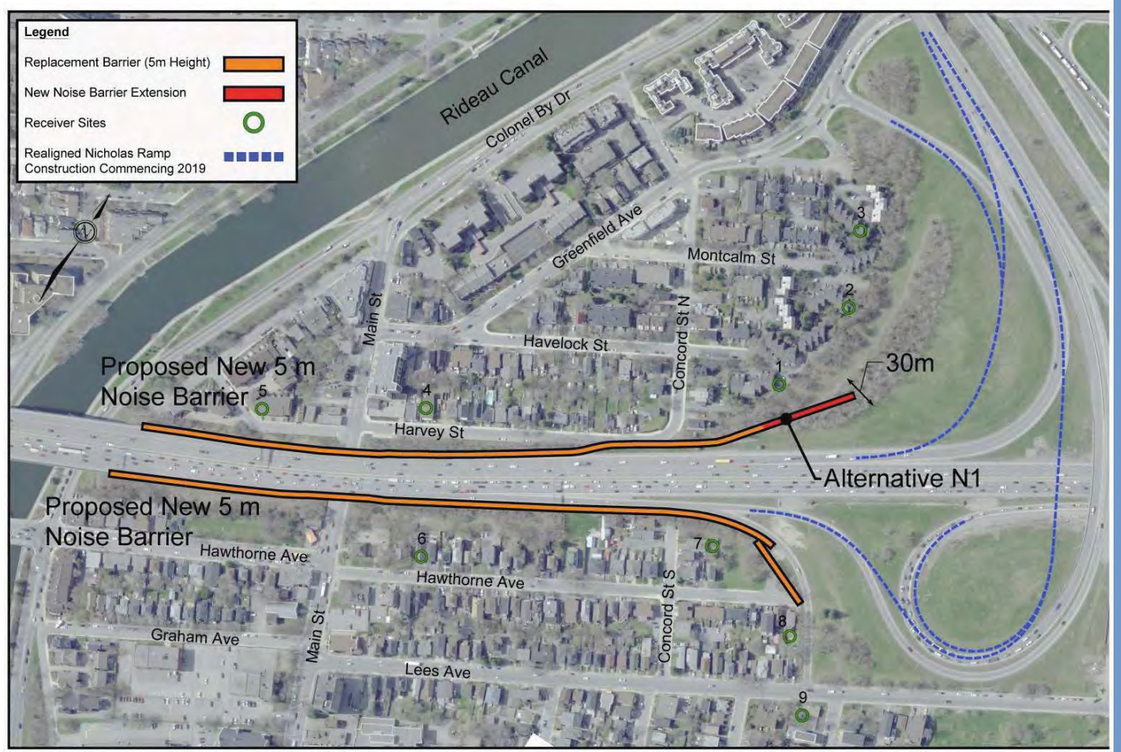
Selon l'évaluation du bruit, des immeubles résidentiels subissent des niveaux sonores supérieurs à 65 dBA et nécessitent une atténuation supérieure à 5 dBA là où il est techniquement et économiquement possible de le faire.

Il est recommandé de remplacer tous les écrans antibruit existants par d'autres d'une hauteur de 5 m (1 m de plus) et d'élargir celles du côté nord de l'autoroute 417.

Le rapport d'évaluation du bruit est disponible à la table de documentation

Recommandations de l’évaluation du bruit

La ligne pointillée bleue illustre un projet parallèle de réalignement des bretelles de la rue Nicholas en 2019.



Le rapport d’évaluation du bruit est disponible à la table de documentation

Énoncé de flexibilité

Recommandation générale et énoncé de flexibilité

Le comité consultatif technique a recommandé que le rapport d’étude environnementale des transports (REET), qui décrira le projet à réaliser, permette une flexibilité quant aux options de conception préliminaire recommandées. Le présent énoncé permet au MTO d’examiner deux éléments après l’obtention des autorisations nécessaires en matière d’environnement :

1. La mise en œuvre de l’une ou l’autre stratégie de gestion des ponts (réfection ou remplacement) en fonction du financement, du site d’assemblage, etc. Le tableau ci-dessous présente les résultats de l’évaluation MATS, avec un énoncé de flexibilité pour plusieurs emplacements de pont.
2. L’examen des éléments de conception, comme les traitements des façades et la conception des piliers, lors de la phase ultérieure de conception détaillée du projet pour chaque emplacement de pont.

	Classement et scores selon l’évaluation MATS			Option privilégiée (MATS, considérations pratiques)	Énoncé de flexibilité dans le REET
	1er	2e	3e		
Rue Metcalfe	option B-C1 82,25 Remplacement rapide	option A-A2 60,80 Réfection conventionnelle	option A-A1 59,22 Réfection rapide	Remplacement rapide (option B-C1)	Réfection conventionnelle (option A-A2)
Rue Elgin	option B-C1 85,00 Remplacement rapide	option A-A2 58,34 Réfection conventionnelle	option B-B1 52,96 Remplacement conventionnel	Remplacement rapide (option B-C1)	Réfection conventionnelle (option A-A2)
Rue Main	option B-C1 70,21 Remplacement rapide	option A-A2 68,67 Réfection conventionnelle	option A-A1 64,54 Réfection rapide	Remplacement rapide (option B-C1)	Réfection conventionnelle (option A-A2)
Canal Rideau	option D-4 81,66 Remplacement par soulèvement-glissement	option D-2B 80,33 Réfection conventionnelle	option D-5 80,07 Rempl. par soulèvement-glissement (2 ans)	Remplacement par soulèvement-glissement (option D-4)	Réfection conventionnelle (option F)

Améliorations de l’option privilégiée – gestion de la construction du pont du canal Rideau

L’étude prévoit le perfectionnement de l’option privilégiée. L’examen indépendant de la constructibilité a conclu que deux améliorations sont nécessaires afin d’entreprendre la construction du pont du canal Rideau.

- **Amélioration 1A :** afin de créer une plus grande aire d’assemblage pour la section du pont en direction ouest, il est recommandé de fermer l’espace de stationnement sur la rue Catherine (entre la promenade de la Reine-Elizabeth et la rue Elgin) durant la période de construction.
- **Amélioration 1B :** afin de s’assurer d’avoir tout le temps nécessaire pour réaliser le plan de remplacement rapide du pont, il est recommandé de prolonger la fermeture de l’autoroute 417 sur 3 jours (samedi, dimanche et lundi ou vendredi). Un préavis préviendra les automobilistes qu’ils devront modifier leurs habitudes les lundis ou vendredis.

Effets et atténuation

Facteur	Enjeux environnementaux et effets potentiels	Mesures d’atténuation proposées
Mobilité des piétons, des cyclistes et des activités récréatives	Possibilité de restrictions des déplacements des piétons, des cyclistes et des activités récréatives sous l’autoroute 417 ou le long d’autres rues fermées durant les travaux – y compris des itinéraires scolaires, utilitaires et récréatifs. Fermeture requise à plus long terme de trottoirs aux sites de remplacement des ponts pour donner accès aux culées et piliers.	Prévoir des itinéraires de détour et des préavis de fermetures temporaires. Voir le plan préliminaire des itinéraires de détour à la table de documentation. Utiliser le plus possible des palissades et des passages piétonniers protégés afin de maintenir l’accès aux piétons dans la mesure du possible.
Transports actifs – sentier polyvalent	Les sentiers polyvalents sont plus étroits près des piliers du pont du canal Rideau.	Examiner la largeur et le tracé des sentiers récréatifs dans le cadre de la conception détaillée. (Il pourrait être possible de relocaliser une voie de chaque sentier entre les piliers et la promenade de part et d’autre du canal afin de permettre un élargissement).
Gestion de la circulation – retards	Possibilité de retards liés aux travaux sur l’autoroute 417 (fermeture complète les fins de semaine pour le remplacement de ponts) ou sur les bretelles ou les rues dans le cas de fermetures temporaires de trottoirs ou de chaussée (aux 3 rues affectées et aux 2 promenades de la CCN).	Donner un préavis pour toute fermeture, réduction de voies et détour. Voir le plan préliminaire des itinéraires de détour à la table de documentation. Préparer et mettre en œuvre un plan de gestion de la circulation lors des travaux, y compris des panneaux à message variable et des dispositifs de détection des incidents. Limiter les fermetures de voies (autoroute 417) en période de pointe.
Transport en commun	Perturbation du service d’OC Transpo lors de fermetures ou de réductions de voies sur les rues municipales.	Travailler avec OC Transpo pour identifier les impacts des travaux sur le transport en commun et élaborer / communiquer les modifications de services requises. Voir le plan préliminaire des itinéraires de détour à la table de documentation.
Services d’urgence	Impacts possibles sur l’accès et les itinéraires des services d’urgence lors de fermetures de routes ou de réductions de voies.	Tenir compte de l’effet combiné de la fermeture de plusieurs rues à la fois lors de la planification. Préparer et mettre en œuvre un plan de gestion de la circulation lors des travaux. Communiquer avec les fournisseurs de services d’urgence avant et tout au long des travaux.
Impacts permanents sur les propriétés	Acquisition proposée de propriétés privées (Royal Oak Pub, Cyco’s Cycle Shop/Greek on Wheels, McGovern Construction et Organic Salon).	Communiquer le plus tôt poss ble avec les propriétaires et les locataires concernés dans le but de réduire autant que possible les dérangements associés à l’acquisition des propriétés.
Impacts temporaires sur les propriétés de ville d’Ottawa, du parc Ballantyne et du canal Rideau (pendant les travaux)	L’espace de stationnement de la rue Catherine sera temporairement fermée pendant les travaux. Le parc Ballantyne sera utilisé comme chantier de construction pour les ponts du canal Rideau et de la rue Main. Le remplacement des écrans antibruit pourrait affecter les propriétés situées le long de de l’emplacement recommandé des nouvelles barrières. Voir le panneau d’information sur le bruit. Le canal Rideau sera utilisé temporairement pour les travaux.	Envisager des améliorations dans le cadre de la conception détaillée et en documenter les résultats dans le rapport de conception et de construction. Envisager l’utilisation des propriétés de la ville d’Ottawa et du gouvernement fédéral pour l’aménagement des aires d’assemblage. Communiquer le plus tôt poss ble avec les propriétaires et les locataires concernés dans le but de réduire autant que poss ble les dérangements. Remettre les aires perturbées dans un état similaire ou supérieur à leur état d’origine. Protéger l’infrastructure du canal et l’échéancier des travaux pour éviter d’affecter la navigation et la saison du patinage en hiver.
Environ-nement social (pendant les travaux)	Des propriétés situées à proximité des ponts et des aires d’assemblage pourraient être affectées temporairement durant les travaux (p.ex., bruit, poussières, intrusions visuelles, etc.) Ces inconvénients temporaires affecteront le 7/9, avenue Hawthorne, le 15/17, avenue Hawthorne Avenue, le 19/21, avenue Hawthorne et le 25, avenue Hawthorne.	Communiquer le plus tôt poss ble avec les propriétaires et les locataires concernés dans le but de réduire autant que poss ble les dérangements. Remettre les aires perturbées dans un état similaire ou supérieur à leur état d’origine.

Effets et atténuation

Facteur	Enjeux environnementaux et effets potentiels	Mesures d'atténuation proposées
Esthétique	La réfection et le remplacement des ponts fournissent l'occasion d'améliorer l'aspect esthétique des emplacements de ponts actuels.	Inclure des éléments de conception adaptés au contexte là où les caractéristiques des sites et la nature des travaux le permettent.
Archéologie	Risque d'endommagement ou de perte de vestiges archéologiques.	Aucun potentiel archéologique identifié dans l'évaluation archéologique de premier niveau. En cas de découverte de vestiges archéologiques profondément enfouis lors des travaux, l'entrepreneur doit interrompre les travaux à proximité et aviser le ministère du Tourisme, de la Culture et du Sport.
Patrimoine	Une attention particulière doit être portée au canal Rideau, désigné lieu historique national du Canada en 1925 et site du patrimoine mondial de l'UNESCO en 2007, propriété du Gouvernement du Canada et administré par Parcs Canada. Effets à court terme sur les accès et les vues panoramiques (tel que décrit dans le Plan officiel d'Ottawa, Annexe I : voies cyclables, sentiers polyvalents et routes d'entrée panoramiques – secteur urbain) causées par les aires d'assemblage et les altérations au design des ponts. Impacts sur des bâtiments d'importance historique à l'intersection de la rue Main et de l'avenue Hawthorne : ancienne station-service (McGovern Construction). Présence d'immeubles du début du 19e siècle dans la zone d'étude.	Consulter Parcs Canada et les autres organismes fédéraux pour assurer la prise en compte de leurs objectifs concernant le design des ponts et pour appuyer le rôle des ponts à titre d'accès panoramiques au canal Rideau et à la ville.
Bruit	Bruit causé par le matériel et les véhicules de construction durant les travaux.	Maintenir le matériel en bon état de fonctionnement pour éviter le bruit inutile. Limiter la marche au ralenti du matériel au strict minimum requis pour effectuer les travaux. Obtenir par le biais du MTO les dérogations nécessaires au règlement municipal en matière de bruit pour permettre les travaux en soirée et la fin de semaine, lorsque nécessaire. Exiger de l'entrepreneur qu'il respecte les dispositions du règlement municipal en matière de bruit dans ses activités quotidiennes.
Propriétés contaminées	Contamination possible des sols et des eaux souterraines en raison des usages antérieurs. L'étude sommaire des possibilités de contamination (COS) a identifié six sources présentant un potentiel moyen ou élevé de contamination environnementale dans la zone d'étude. Dans le passé, plusieurs sites en bordure de l'autoroute 417 ont abrité des activités potentiellement polluantes (stockage de carburant, activités manufacturières). La zone d'étude comprend un site répertorié dans l'Inventaire fédéral des sites contaminés (carrefour Nicholas-Autoroute 417); un site de cinq hectares en bordure de la rue Harvey contient des sols contaminés contenant des hydrocarbures polycycliques aromatiques (HPA) et des composés métalliques, métalloïdes et organométalliques.	Produire un plan de gestion des sols et/ou une évaluation environnementale de site (EES) en phase II.
Érosion et sédiments	Poss bilité d'érosion ou de fuites de sédiments lors des travaux.	Le contrat de construction doit exiger l'emploi des méthodes normalisées de contrôle de l'érosion et de la sédimentation, interdire l'évacuation des sédiments hors du chantier et exiger la remise en état des aires perturbées en temps opportun.

Effets et atténuation

Facteur	Enjeux environnementaux et effets potentiels	Mesures d'atténuation proposées
Eaux souterraines	Possibilité d'effectuer des travaux d'assèchement pour les options axées sur le remplacement des ponts.	S'il est établi à l'étape de la conception détaillée qu'il faudra effectuer des travaux d'assèchement, les impacts seront déterminés à l'étape de la conception détaillée.
Gestion des matériaux excédentaires	Le projet produira des matériaux excédentaires (béton bitumineux, granulats, béton et possiblement de la terre).	Réduire au minimum les quantités de matériaux excédentaires en ajoutant aux documents d'appel d'offres des dispositions qui encouragent l'entrepreneur à récupérer, recycler et réutiliser les matériaux.
Espèces en péril - oiseaux	Perturbation possible d'oiseaux migrateurs, d'activités de nidification et d'espèces en péril, y compris le martinet ramoneur (menacé) - habitat potentiel lorsqu'il y dans un rayon de 200 mètres des cheminées de maçonnerie de briques de diamètre supérieur à 30 cm avec intérieur rugueux; hirondelle rustique (menacée) – habitat potentiel lorsqu'il y a dans un rayon de 200 m des rebords couverts et du béton rugueux; faucon pèlerin (préoccupant) – habitat probable en raison de la proximité du canal et de la rivière et de la présence de gratte-ciel aux alentours.	Effectuer une vérification des lieux avant les travaux d'enlèvement d'arbres, avant les travaux et durant les travaux. Effectuer les travaux de déblayage de la végétation avant ou après la période de nidification des oiseaux (15 avril au 15 août), tel que défini dans la Loi relative à la Convention sur les oiseaux migrateurs. Tout défaut de respecter cette exigence pourrait entrainer le déclenchement de l'EES. Veiller à ce que le personnel de l'entrepreneur obtienne la formation nécessaire pour identifier les espèces en péril concernées. Aviser le personnel de l'entrepreneur qu'ils doivent avertir les autorités compétentes en cas d'observation de ces espèces.
Tourisme / événements	Perturbation possible de festivals et de grands événements à proximité en raison des activités de construction.	Établir le calendrier des activités de construction de manière à éviter ou limiter autant que possible la perturbation des festivals et des grands événements.
Services publics	Impacts possibles sur les infrastructures de services publics aux environs des ponts et des aires de travaux et le long des routes d'accès aux aires d'assemblage.	Coordonner au préalable avec les entreprises de services publics concernées tous les travaux de relocalisation et de protections des services publics.
Végétation	Enlèvement d'arbres et de matières ligneuses pour le déblayage des aires d'assemblage.	Conserver, dans la mesure du possible, les arbres matures d'un diamètre à hauteur de poitrine (DHP) supérieur à 50 cm. Conserver, dans la mesure du possible, les lilas indigènes qui se trouvent au site M1. La plupart des sites ne contiennent aucun élément caractéristique du milieu naturel et ne sont pas en mesure de favoriser la croissance d'éléments indigènes. On n'y trouve aucun spécimen de l'inventaire des arbres importants de la Ville d'Ottawa. Aucune zone écologiquement sensible, ZINS ou zone humide d'importance n'a été identifiée par la MRNF ou dans le Plan officiel de la Ville d'Ottawa.
Permis et approbations fédérales	Les permis et autorisations qui suivent pourraient être requis pour ce projet : 1. Permis de protection de la navigation (Transports Canada) 2. Permis pour ouvrages riverains et en milieu aquatique (Parcs Canada) 3. Permis pour les ouvrages sur les terrains fédéraux (CCN) 4. Le projet doit respecter le protocole MTO/POC/MRNF en ce qui a trait aux impacts potentiels sur les pêches.	La CCN, Parcs Canada, Transports Canada et Pêches et Océans Canada ont été consultés dans le cadre de cette EE en vue de déterminer les exigences en matière de permis et d'autorisations. Des consultations supplémentaires seront menés lors des étapes de la conception détaillée et de la préparation des documents contractuels pour assurer la présentation des demandes de permis en temps opportun.
Rapport de design et construction	Conformément aux exigences du processus d'EE de portée générale du MTO, un rapport de design et de construction doit être produit dans le cadre des activités de conception détaillée dans le but d'identifier les exigences d'atténuation, les méthodes de construction et leurs impacts.	Produire en temps opportun un rapport de design et de construction et le soumettre à l'examen du public.

Prochaines étapes

Après la réunion, nous allons :

- Examiner tous les commentaires après la SIP nº 2
- Examiner les améliorations à inclure dans l'option privilégiée
- Finaliser le plan recommandé
- Préparer le rapport d'étude environnementale des transports (REET)
- Faire une présentation au Comité des transports de la Ville d'Ottawa
- Publier l'avis de fin de l'étude dans les journaux locaux (*Ottawa Citizen* et *Le Droit*)
- Accorder une période d'examen public de 30 jours du REET
- Obtenir les autorisations nécessaires en matière d'environnement
- Procéder à la conception détaillée (ultérieurement)
- Procéder à la construction (ultérieurement)

Comment rester au fait de l'étude?

- Demandez de faire ajouter votre nom et votre adresse courriel à la liste de diffusion
- Remplissez et remettez une feuille de commentaires
- Communiquez en tout temps avec les représentants du MTO ou de la firme de génie-conseil
- Consultez le site web : **www.queenswaydowntownbridges.com**

Nos représentants sur place peuvent vous aider avec les activités ci-dessus.

Merci de votre participation à cette séance.

Nous sommes reconnaissants de votre participation à l'étude.

Veuillez remettre votre feuille de commentaires remplie d'ici le 10 mai 2019.

Tous les renseignements sont recueillis en conformité avec la *Loi sur l'accès à l'information et la protection de la vie privée.*

Appendix C
Comment Sheets



Comment Sheet
Public Information Centre (PIC) No. 2
Wednesday, April 24, 2019

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street
Group Work Project No. 4170-13-00

Thank you for attending tonight's public meeting. Please provide your comments on any of the material presented.

WOULD HAVE BEEN A BIT BETTER IF SUGGESTED FLOW TO FOLLOW HAD BEEN INDICATED. (PATHWAY AROUND ROOM).
I HAVE CONCERNS ABOUT TRAFFIC VOLUMES ESP. ON LEES + MAIN + LIGHT TIMING AS MANY INTERSECTIONS ARE CLOSE TOGETHER + THERE ARE ALREADY PROBLEMS W/ FLOWS + TURNS.

WILL NOISE BE 24/7 (OR WHATEVER) @ BALLENTINE PARK SITE? WE HAVE HAD YEARS OF NOISE/VIBRATION FROM LEES/MAIN/LRT CONSTRUCTION + ONGOING DEVELOPMENT ON OBLATE LANDS. LOL WE DO NOT HAVE A COTTAGE TO ESCAPE TO ☹ WHEN NOISY/DUSTY.

TNX.

(Please turn over if additional space is required.)

Please complete your comment sheet this evening and place in the comment box provided OR send your completed comment sheet by **May 10, 2019** to:

Steve Taylor, P.Eng.
BT Engineering Inc.
100 Craig Henry Drive, Suite 201
Ottawa, Ontario K2G 5W3
Tel: (613) 228-4813 Fax: (613) 280-1305
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dave.lindensmith@ontario.ca

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[redacted]

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Thank you for attending tonight's public meeting. Please provide your comments on any of the material presented.

* could you please email the planned detour material.

* For the ~~trees~~ areas which require building / property aquisitim, the land should be put to use as parkland and/or providing improved cyling / pedestrian access – ie add cycle tracks on west side of main southbound just past the Main Street Queensway bridge.

=> would have liked to see improved policy for noise attenuation in the area of the R Canal Queensway bridge, this area has high level of traffic noise.

=> would have liked the span of Elgin Bridge to be widened to support cycle tracks, but I understand the challenges with this

(Please turn over if additional space is required.)

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[redacted]

- look at:
ottawaeast.ca
cagottawaeast.ca
mainstreeter.ca

- Glebe Report is the common news
- Mainstreeter is 00E paper.

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Group Work Project No. 4170-13-00

Thank you for attending tonight's public meeting. Please provide your comments on any of the material presented.

- It would have been nice to have seen a video of the proposed replacement of the Main ST bridge (rather than just the Canal bridge)

- It would also be useful for the MTO / consultants to reach out to the community via more than an ad in the Ottawa Citizen. The onus now is on community associations to put in local communication; even trying to do a search on-line was not successful. Also paper copies of the Ottawa Citizen are not well distributed.
- Also put some signs outside.
- Also please have people who are available to answer questions wear name-tags or other identifiers, since it was not obvious to whom one should pose questions.

(Please turn over if additional space is required.)

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Thank you for attending tonight's public meeting. Please provide your comments on any of the material presented.

Regarding noise barrier replacement I'd like to see the barriers replaced with a wall that bend/curves toward the 417 that will bend or bounce the noise and soot back on the 417.

(Queensway) I believe it was used in Boston to improve noise + soot issues

Thanks

(Please turn over if additional space is required.)

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[redacted]

Comment Sheet
Public Information Centre (PIC) No. 2
Wednesday, April 24, 2019

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street Group Work Project No. 4170-13-00

Thank you for attending tonight's public meeting. Please provide your comments on any of the material presented.

Please send boards / other info to [redacted]

(Please turn over if additional space is required.)

Please complete your comment sheet this evening and place in the comment box provided OR send your completed comment sheet by **May 10, 2019** to:

Steve Taylor, P.Eng.
BT Engineering Inc.
100 Craig Henry Drive, Suite 201
Ottawa, Ontario K2G 5W3
Tel: (613) 228-4813 Fax: (613) 280-1305
steven.taylor@bteng.ca

Dave Lindensmith, P. Eng.
Senior Project Engineer
Ministry of Transportation
1355 John Counter Boulevard
Kingston, Ontario K7L 5A3
Tel.: (613) 540-5130 Fax: (613) 540-5106
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Name / Organization:

Address

City / Town Postal Code

Email address

Please check a box if you would like to be added to our mailing list to be informed of the publication of the TESR. ☐ mailing address ☐ email

Comment Sheet
Public Information Centre (PIC) No. 2
Wednesday, April 24, 2019

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street Group Work Project No. 4170-13-00

Thank you for attending tonight's public meeting. Please provide your comments on any of the material presented.

Excellent presentations, drawings, videos, etc.

Experienced personnel to answer questions

Very informative!

(Please turn over if additional space is required.)

Please complete your comment sheet this evening and place in the comment box provided OR send your completed comment sheet by **May 10, 2019** to:

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[redacted]

Comment Sheet
Public Information Centre (PIC) No. 2
Wednesday, April 24, 2019

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street
Group Work Project No. 4170-13-00

Thank you for attending tonight's public meeting. Please provide your comments on any of the material presented.

This was a difficult meeting to find - Not many people read the Citizen anymore, and I heard you had a notice in there. The MTO site had a 2017 meeting listed, but nothing more recent. The Community Association announced this meeting, but they meet once a month and should not be responsible for this type of public information. A door delivery notice would have been more appropriate, in my opinion. As Centretown and the Glebe will be impacted by this construction, notices should have been given to these areas too.
The loss of 4 viable businesses in our neighbourhood is very sad. We can be quite sure they will be gone for good, as new construction would of course make rents much higher and unaffordable for Mom & Pop type businesses.
We would hope that the trees removed will be

(Please turn over if additional space is required.)

Please complete your comment sheet this evening and place in the comment box provided OR send your completed comment sheet by **May 10, 2019** to:

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BT Engineering Inc.
100 Craig Henry Drive, Suite 201
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[redacted]

Public Information Centre (PIC) No. 2
Wednesday, April 24, 2019

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street
Group Work Project No. 4170-13-00

replaced with as large caliper trees as possible - and large growing trees, not the small stuff Ottawa Hydro insists on.

We are burned out on construction in our neighbourhood - Ugh -

Darcie Dillon

[redacted]

Hi Steve... please find below comment received from PIC last night.

Could you please review and provide a draft response in conjunction with other comments received.

Thanks.

[redacted]

-----Original Message-----
[redacted]
Subject: Evaluation of bridge repair/replacement alternatives

[redacted]

I just attended the PIC at Saint Paul's University and I have a question on the Main and Rideau Canal bridge replacement preferred option. It is clear that the community will take the hit to allow other Ottawa citizens to be less affected by the bridge repair or replacement. I was given some introduction to the weighting of factors in how the preferred alternative was selected. My question is: who on the selection committee represented the most affected community in Ottawa (OOECA) for this project? Presumably, if you want to evaluate how people will be affected, you consult the affected people. A second question is: how did the evaluation criteria ranked by this person (or persons) differ from the other representatives on the evaluation committee?

Thank you for providing this information.

[redacted]

Darcie Dillon

[redacted]

The PIC displays are on the website at the following URL.

https://queenswaydowntownbridges.com/wp-content/uploads/2019/04/GWP4170-13-00-17-010-PIC-2-EN-Exhibits-Apr-23-2019-QC.pdf

or accessed through the "Public Consultation" Tab at the top of the home page.

Thanks.

[redacted]

[redacted]

Good afternoon [redacted]

Thank you for the displays and the discussion for the second PIC for the downtown 417 bridges. The details appear to be getting tighter and more focused such that community discussion could be about more specific matters.

We were wondering if and when the information on the display boards might be available on line.

Cheers
[redacted]

[redacted]

Hello,

So I apologize for not being around for the public consultations. I only found out about them after the fact.

So I went over the public communique from the Pic2 exhibit shared on the website.

I just live off of Hawthorne across from the Ballantyne Park, the favored site for the Main street bridge replacement.

My concerns deal with:

i) Noise with construction.
ii) Damage to property
iii) Post-construction use.

i) So I noted on page 31, under Effects and Mitigation, that the MTO will file for exemptions for noise for day-to-day operations, weekend, and evening work. That being said, if there is a noise complaint to be made, what assurances do I have that they will be respected and what recourse am I entitled to as a resident in the area?
ii) So I notice that there is no mention of damage to property related to heavy machinery dumping or pounding or creating vibrations that may resonate from the worksite to neighboring residences. This was a concern during the Main street renovation and I am wondering what mitigation is planned to reduce physical

damage to property? On a related note, Hawthorne and many of the streets around the bridges are slated to undergo a complete renovation including new sewer, water, wider sidewalks, etc. Heavy machinery for the bridge replacement will possibly damage the new city property (notably the sidewalks and roads that have been recently replaced). What assurances will MTO be prepared to prevent and, if necessary, repair any damage?
iii) Once this is all said and done, what is the plan for Ballantyne Park? Will the land return as a park?

Anyway, thank you for the information.

[redacted]

This email has been checked for viruses by AVG antivirus software.
www.avg.com

Appendix A-4

Public Information Centre No. 3 Summary Report

BT ENGINEERING

Ottawa Queensway Downtown Bridges Preliminary Design and Environmental Assessment Study for Rehabilitation/Replacement GWP 4170-13-00

PIC No. 3 Summary Report

January 2023

BT Eng Project 17-010

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Appendix C PIC No. 3 Comment Sheets

1.0 INTRODUCTION

The Ministry of Transportation (MTO) initiated this Class Environmental Assessment (EA) in the summer of 2017 for the rehabilitation or replacement of 7 bridges on the Queensway from Metcalfe Street easterly to Main Street. The 7 bridges are at 4 locations at Metcalfe Street, Elgin Street, Rideau Canal (including crossings of Queen Elizabeth Drive and Colonel By Drive) and Main Street.

Two Public Information Centres (PICs) were held in December 2017 and April 2019 to present the project to the public. The recommendations were then presented at the City of Ottawa's Transportation Committee Meeting in October 2019. The preferred construction staging shown at PIC No. 2 and the Transportation Committee recommended using rapid bridge replacement technology and constructing the new bridges on both sides of the Queensway. The impacts included:

- Spanning the 1220 mm diameter watermain that supplies east Ottawa;
- Purchase and possible demolition of two buildings: 221 Echo Drive and 3/5 Hawthorne Avenue; and
- Potential impacts to the Hydro buried high voltage plant on both sides of the canal.

Based on public and agency input received at PIC No. 2 and additional technical investigations of the Ontario Hydro buried high voltage plant, two modifications to previous technical recommendations presented at PIC No. 2 were carried forward:

- Placement of bridge piers to be integrated into the canal walls to avoid underground Hydro plant behind the canal walls on both sides of the canal, and
- Revised Rideau Canal construction staging (eliminating the need to purchase and demolish two existing buildings, eliminating the potential risk of crossing over the south side 1220 mm diameter watermain, and reduced risk and greater protection of the buried high voltage Hydro plant).

The delay in the project schedule since October 2019 has been to address the public comments and PIC No. 2 comments.

PIC No. 3 presented the changes to the Rideau Canal Bridge Replacement recommendations. No modifications to the rigid frame bridges (Metcalfe Street, Elgin Street and Main Street) were recommended and therefore these were not presented at PIC No. 3.

This EA Study will complete all phases of the Provincial Transportation Facilities Class EA (MTO Class EA) for a Group B EA and Preliminary Design project. At the completion of the project, a Transportation Environmental Study Report (TESR) will be prepared for a 30-day public review.

The project location is shown in **Figure 1** and the study area is shown in **Figure 2**.

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of
Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street
GWP 4170-13-00
PIC No. 3 Summary Report – January 2023

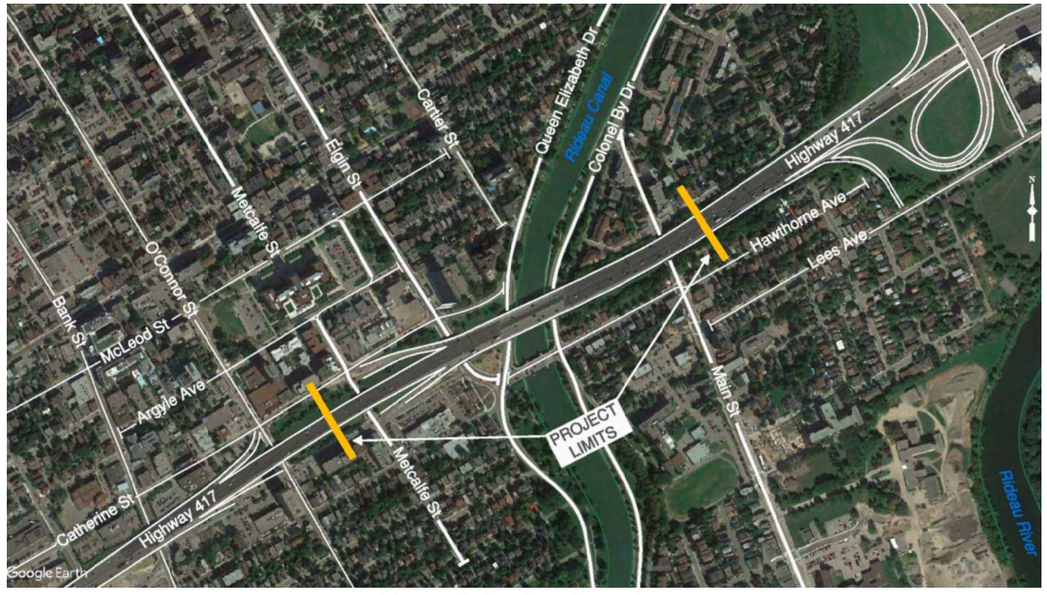


Figure 1: Project Location

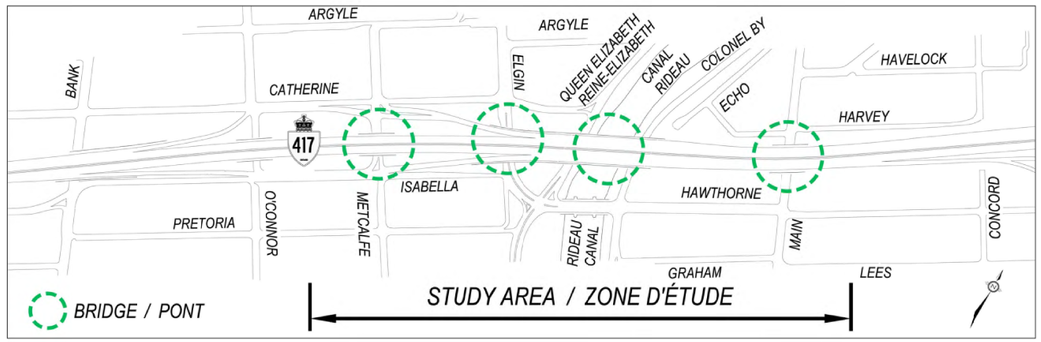


Figure 2: Study Area

The third Public Information Centre (PIC) for this project was held on:

> Tuesday, November 15 to Wednesday, November 30, 2022 at:
> www.queenswaydowntownbridges.com online for a 2-week period
> Questions and comments directed to queenswaydowntownbridges@bteng.ca

The PIC included presenting the following in bilingual format:

- Project overview and Study Area;

- EA Process and Schedule;
- Rideau Canal Bridge Construction Staging Alternatives and Updated Evaluation
- Updated Technical Recommendations and Mitigation Plan
- Next Steps
- Obtain Comments

MTO and consultant representatives (including bilingual representatives) were available to respond to any inquiries.

All members of the public and interest groups were invited to PIC No. 3 to view the presentation material online and to discuss the project with the MTO and consultant representatives.

The PIC No. 3 exhibits are in **Appendix A.**

2.0 PUBLIC AND AGENCY CONSULTATION

One of the key aspects of the project is to provide the public, interested parties, affected agencies and municipalities with the opportunity for input. In order to ensure this objective is met, a public and agency notification program was undertaken. The program includes a number of communication mechanisms, discussed in the following sections. The Study Design Report was finalized following the first PIC and was available on the project website.

A Mailing List has been maintained since the beginning of the project in 2017. Hard copy and email notices were sent to the mailing list, which included the public, agencies, stakeholders, Indigenous Peoples and interested parties. Details of the list are included in the following sections.

2.1 Newspaper Notice and Flyers

Notice of the third PIC was placed in The Ottawa Citizen (in English) on Thursday, November 10, 2022 and Ottawa Le Droit (in French) on Saturday, November 12, 2022.

Flyers, in English and French and identical to the notices, were hand delivered to over 200 public residents within the Study Area on November 8, 2022, see **Figure 3**. PIC No. 3 focussed on the impacts from the Rideau Canal Bridges and flyers were hand-delivered to residents immediately affected by the changes to the recommendations.



Figure 3: Flyer Distribution Map

The newspaper notices, flyers and select notification letters are in **Appendix B**.

2.2 Agency and Stakeholder Contacts

The following agencies were invited to attend the PIC by mail and email:

- Aboriginal Affairs and Northern Development Canada
- Canadian Environmental Assessment Agency Ontario Region
- National Capital Commission (NCC)
- Transport Canada / Navigable Waters Protection Program
- Ministry of Agriculture, Food and Rural Affairs
- Ministry of the Environment, Conservation and Parks
- Ministry of Indigenous Relations and Reconciliation
- Ministry of Natural Resources and Forestry
- Ministry of Tourism, Culture and Sport
- Rideau Valley Conservation Authority
- Councillor of Ward 12 – Rideau-Vanier
- Councillor of Ward 14 - Somerset
- Councillor of Ward 16 - River
- Councillor of Ward 17 – Capital
- Office of Shawn Menard
- City of Ottawa
- Invest Ottawa
- Ontario East Economic Development Commission
- Ottawa Chamber of Commerce
- Ottawa Real Estate Board
- Ottawa Tourism
- Transport Action Ontario
- Share the Road
- Vision Zero Canada
- Transportation Options
- Healthy Transportation Coalition

- ACORN Ottawa
- Action Sandy Hill
- Bank Street BIA
- Centretown Citizens' Community Association
- Citizens for Safe Cycling
- City Centre Coalition
- Community Activities Group of Old Ottawa East
- Dalhousie Community Association
- Downtown Rideau BIA
- Ecology Ottawa
- Envirocentre Ottawa
- Federation of Citizens' Associations of Ottawa-Carleton
- Glebe Annex Community Association
- Glebe BIA
- Glebe Community Association
- Glebe Report
- Lowertown Community Association
- Mainstreeter
- Old Ottawa South Community Association
- Ottawa Riverkeeper
- Preston Street BIA
- Somerset Street Chinatown BIA
- Somerset Village BIA
- The Centretown BUZZ
- Walk Ottawa
- CP Rail
- MTO Corridor Management Officer (Utilities)

Notification of the PIC was communicated to: most directly affected residents by newspaper notice and flyer; directly impacted local business owners by letter and advance meetings; local municipalities by letter/email; Members of Provincial Parliament by letter; and external agencies and interested groups by letter/email.

2.3 Indigenous Peoples

Individual letters were sent to the following Indigenous Peoples in the vicinity of the Study Area, inviting them to attend the meeting:

- Bonnechere Algonquins First Nation
- Chippewas of Georgina Island
- Mississaugas of the New Credit First Nation
- Mississaugas of Scugog Island First Nation
- Beausoleil First Nation
- Alderville First Nation
- Curve Lake First Nation
- Williams Treaty First Nation
- Algonquins of Pikwakanagan
- Algonquins of Ontario
- Kinounchepinini Algonquin First Nation
- Kijicho Manito Madaouskarin – Anishinaabe Baptiste
- Algonquins of Greater Golden Lake First Nation
- Mattawa / North Bay Algonquin First Nation
- Shabot Obaadjiwan First Nation
- Snimikobi Algonquin First Nation
- Whitney and Area Algonquin Community
- Hiawatha First Nation
- Moose Deer Point First Nation
- Ottawa Region Métis Council
- Métis Nation of Ontario

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street
GWP 4170-13-00
PIC No. 3 Summary Report – January 2023

2.4 Elected Officials

The following Members of Provincial Parliament were invited to the PIC:

- Lucille Collard (MPP for Ottawa-Vanier)
- Joel Harden (MPP for Ottawa Centre)
- Chandra Pasma (MPP for Ottawa West-Nepean)
- John Fraser (MPP for Ottawa South)

3.0 PIC COMMENTS

Thirty-seven (37) comment sheets were received during the PIC period. Copies of the comments, excluding personal information, are provided in **Appendix C**. The results of the comments and discussions are summarized in the following sections.

3.1 Summary of Comments

The results of the comments received and discussions held at PIC No. 3 are summarized below in **Table 1**. The comments have been summarized by general subject matter.

Table 1: Summary of Written Comments
Public Information Centre No. 3
November 15, 2022

Comment	Comments Received	Comment Sheet ID
Concern for removal of vegetation and trees and impacts to wildlife	10	1, 2, 3, 6, 19, 25, 29, 33, 34, 17
Will shoring be constructed for the area between the buildings and the Queensway on the south side?	1	1
Will vegetation be reinstated after construction?	1	1
Will Ballantyne Park be used for Main Street Bridge construction as well?	1	1
What is the schedule for the other rigid frame bridges?	1	1
Concern for property impacts during construction (from vibrations, etc.).	7	1, 5, 25, 26, 29, 33, 34
When will construction start?	1	1
Will MTO be coordinating construction projects with the City of Ottawa?	2	1, 24
Will MTO reinstate city roads/parks/etc. after construction damages the infrastructure?	1	1
Where are the contaminated sites located?	3	1, 25, 34
Will alternative street parking be provided where on-street parking is removed during construction?	4	1, 12, 24, 29

Table 1: Summary of Written Comments
Public Information Centre No. 3
November 15, 2022

Comment	Comments Received	Comment Sheet ID
Concern for construction noise.	14	1, 5, 6, 10, 18, 19, 21, 23, 25, 26, 29, 31, 33, 34
Concern for impacts to active transportation, tourism and traffic.	12	2, 3, 4, 5, 7, 8, 12, 24, 25, 29, 30, 34
Concern for emergency services/fire access during construction.	8	2, 3, 21, 25, 29, 32, 33, 34
Can you build the Rideau Canal bridges on vacant lands instead of beside the Queensway, or down Main Street (i.e. off-site)?	3	2, 3, 24
Concern for loss of recreational space at the Tiffany Apartments.	4	3, 5, 25, 34
Go back to the previous plan.	5	3, 24, 26, 27, 29
58 Main Street is already owned by the MTO.	1	3
Will loss of parking be compensated?	3	6, 12, 17
Visual obstruction during the 2-year construction period.	7	6, 23, 25, 26, 29, 31, 34
Visual intrusion to apartment building tenants and homeowners on Echo Drive during the 2-year construction period.	7	6, 23, 25, 26, 29, 31, 34
Will business impacts be compensated?	1	6
Has the plan considered the wide range of demographic users of the pathways?	1	8
Consider adding signalization at westbound Argyle Avenue to southbound Elgin Street.	1	8
Work with the City for the detour routes.	2	8, 24
Request for additional information for the plan.	1	9
Could the bridge be shifted north past the Tiffany Apartments during construction?	1	10
Will barriers be constructed under the bridge to deter homeless people?	1	10
Will the Queensway have higher noise barriers and prohibit trucks using engine brakes?	1	10
Is there an assessment completed for the Rideau River bridge?	1	11
Request for a live meeting.	4	12, 21, 34, 17

Preliminary Design and Environmental Assessment Study for the Rehabilitation/Replacement of
Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street
GWP 4170-13-00
PIC No. 3 Summary Report – January 2023

Table 1: Summary of Written Comments
Public Information Centre No. 3
November 15, 2022

Comment	Comments Received	Comment Sheet ID
Have the NCC/Parks Canada/City of Ottawa been consulted?	1	12
Can the construction period be shortened?	1	12
It was not clear why there are such large contractor laydown areas.	1	12
Request clarification on the Statement of Flexibility.	1	12
Can noise barriers be constructed on the south side of the Queensway?	7	13, 15, 16, 22, 36, 37, 14
Concern for dust during construction.	11	18, 19, 23, 25, 26, 29, 30, 31, 32, 33, 34
Watermains are a concern but not over the livelihood of residents.	3	19, 20, 26
Will the front door of Tiffany Apartments be accessible during construction?	4	21, 23, 25, 32
Update the maps used in the drawings.	1	24
Why wasn't this option presented before?	1	24
The 2-year construction window is underestimating the time for replacement.	2	24, 26
How will power outages be dealt with?	3	25, 33, 34
How will toxins be dealt with?	1	25
How are transit routes affected?	2	25, 34
It will be hard to sell houses during the construction period.	2	26, 29
Where will construction workers park?	2	29, 33
Gray Jay Hospitality is closing.	1	35
Aesthetics should be considered for the other three bridges (lights, etc.).	1	14

4.0 NEXT STEPS

Following PIC No. 3, all comments will be reviewed and refinements may be made to the Rideau Canal Technically Preferred Alternative, based on these comments. The Recommended Plan will be finalized and presented in the Transportation Environmental Study Report (TESR), which will be available for a 30-day public review period. The TESR will be made available in winter/spring 2023.

If the public still has concerns at the time the Notice of Study Completion is published, the public has the right to request the Minister of Environment, Conservation and Parks to undertake a higher level of assessment on the project based on two criteria:

- The need for a Part II Order request regarding potential adverse impacts to constitutionally protected Aboriginal and treaty rights.
- The need for additional assessment and evaluation of all other non-Aboriginal issues and concerns.

These rights and guidance on how to contact the Minister of Environment, Conservation and Parks will be described in the Notice of Study Completion at the end of the Study.

If no objections are received by the Minister of the Environment, Conservation and Parks, the study will receive environmental clearance and the project will proceed to detail design and construction.

Appendix A
Exhibits



Welcome!

Preliminary Design and EA Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown bridges from Metcalfe Street to Main Street

Group Work Project No. 4170-13-00

Welcome to the third Public Information Centre (PIC) No. 3 for the Environmental Assessment Study for the Rehabilitation/ Replacement of Ottawa Queensway Downtown Bridges from Metcalfe Street to Main Street. **PIC No. 3 reflects updated study recommendations for the Rideau Canal Bridge based on community input from PIC No. 2.**

At the present time, the Province of Ontario has implemented measures to deal with the COVID-19 pandemic, including recommendations to reduce public gatherings. As a result, this Public Information Centre is relying on web-based communications.

We encourage your input/feedback on the material being presented on the display boards. Comments can be submitted by email to queenswaydowntownbridges@bteng.ca by **November 30, 2022.**

The purpose of this PIC No. 3 is to present information concerning:

- Project Overview and Study Area
- EA Process and Schedule
- Rideau Canal Bridge Construction Staging Alternatives and Updated Evaluation
- Updated Technical Recommendations and Mitigation Plan
- Next Steps
- Obtain your Comments .

There is an opportunity at any time during the Class EA process for interested persons to provide written input. Any comments received will be collected under the *Environmental Assessment Act* and *Freedom of Information and Protection of Privacy Act*, with the exception of personal information, will become part of the public record.

Ontario MINISTRY OF TRANSPORTATION

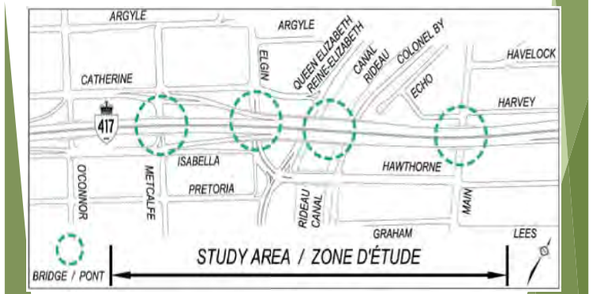
BT ENGINEERING BTE

Introduction

MTO is continuing an Environmental Assessment and Preliminary Design study to establish bridge management plans for 7 bridges at 4 sites on the Ottawa Queensway at the following locations: Metcalfe Street; Elgin Street; Rideau Canal; and Main Street. The Study Area is presented below. The study has assessed both rehabilitation and replacement alternatives.

The primary purpose of this third PIC is to present the updated recommendations and mitigation for the preliminary design and construction staging at the Rideau Canal Structures.

A Study Design Report (SDR) was prepared to present: the proposed problem and opportunity statements; a blueprint of the proposed Work Plan and Study Process; proposed alternatives to the undertaking; proposed alternative methods of carrying out the alternative and the proposed evaluation process; proposed public, agency and Indigenous Peoples engagement; and proposed documentation and post study steps. The report outlines the key activities required to complete the study and the EA preliminary planning and design process. The SDR was finalized after the first PIC (December 5, 2017) and is available on the website at www.queenswaydowntownbridges.com under the title Study Design Report.



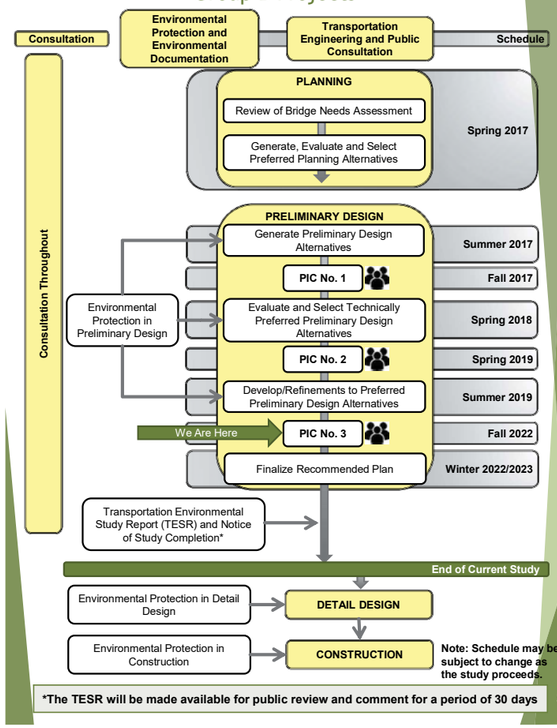
Overview of the MTO Class EA Process for Group B Projects

This project is being conducted in accordance with the requirements of the Ministry of Transportation (MTO) Class Environmental Assessment for Provincial Transportation Facilities (2000) for a Group B project. As part of these requirements, the following will occur:

- A Transportation Environmental Study Report (TESR) will be prepared and filed with the Regional Office of the Ministry of the Environment, Conservation and Parks (MECP) for a 30-day public review period.
- A public notice will be published in the local newspaper (daily English and French) at the time of submission for the TESR to the MECP. The public notice for the completion and filing of the TESR will identify how and where the document can be viewed.

You are encouraged to contact the Project Team if you have questions or concerns about this study. Upon public review of the TESR, in the event there are outstanding concerns regarding potential impacts to constitutionally protected Aboriginal and treaty rights, a Part II Order request should be addressed in writing to the Minister of the Environment, Conservation and Parks. Additional information will be contained in the Study Completion Notice in local daily newspapers.

Overview of the MTO Class EA Process for Group B Projects



Problem / Opportunity Statement

Problem:

The seven (7) Ottawa Queensway Downtown bridges date from the original Queensway construction period from 1959 to 1968. In addition, the Queensway Rideau Canal Bridge is nearing the end of its service life. Unlike the 23 Mid-town bridges to the west, these bridges do not yet have individual or coordinated bridge management plans for rehabilitation or replacement to ensure the continued safe operation of the highway for the future planning horizon.

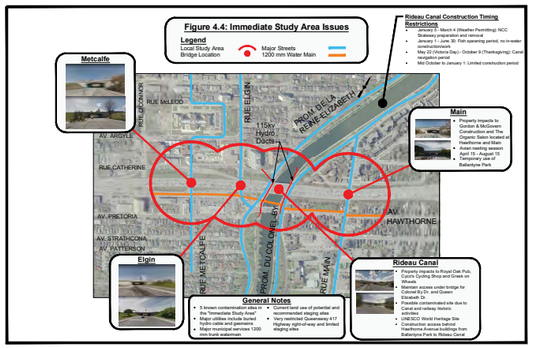
Opportunity:

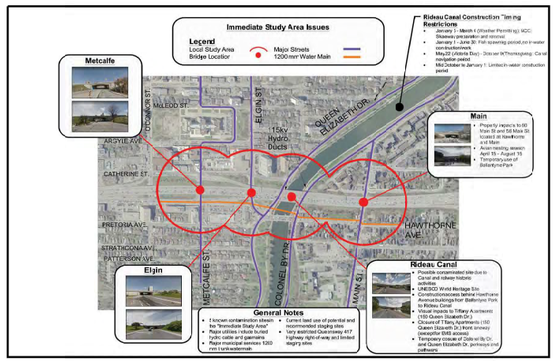
- Establish bridge management plans for the 7 Queensway bridges from Main Street to Metcalfe Street, continuing the MTO program of establishing bridge management plans from west to east along the Queensway.
- Coordinate the bridge management plans for the 7 bridges based on design, traffic staging and construction considerations.
- Coordinate Mid-town bridge work (23 structures to the west) with this project's downtown bridge work (environmental mitigation, traffic staging, bridge staging sites, etc.)

Bridge Types and Evaluation

The seven downtown bridges have been divided into two groups, based on the type of bridge structure:

- Rideau Canal Bridge: a multi-span bridge with heritage context
- Rigid frame bridges (Metcalfe Street, Elgin Street and Main Street): this type of bridge is one continuous single span structure (no joints at abutments)





Consultation to Date

MTO has consulted the following as part of this study:

- Indigenous Peoples Communities
  - Notification for Study Commencement and PIC's with offers to meet personally
- National Capital Commission (NCC) and their Advisory Committee for Planning, Design, and Realty (ACPDR)
- Parks Canada
- Transport Canada
- City of Ottawa
- Ministry of the Environment, Conservation and Parks
- Ministry of Heritage, Sport, Tourism and Culture Industries
- Property/Business Owners
- Community Associations
- Members of the Public
  - Study Commencement Notices in French and English daily newspapers
  - Study Website
  - Study Design Report
  - PIC No. 1 December 5, 2017
  - PIC No. 2 April 24, 2019

Alternatives to the Undertaking – Planning Alternatives

Alternatives to the Undertaking represent alternative ways or methods of addressing the Problem / Opportunity Statement specific to this study. Considering Alternatives to the Undertaking is a mandated task under the MTO Class EA. In this study, the focus is on four bridge locations. These alternatives reflect different strategies and include the “Do Nothing” approach (maintaining the status quo but not addressing the Problem / Opportunity Statement).

X **Alternative 1**: The “Do Nothing” Alternative maintains the status quo of the existing bridges with no significant actions taken to manage aging infrastructure. This approach would accept further deterioration within the 20 year planning horizon. **This alternative is NOT recommended to be carried forward.**

Alternative 2: In accordance with the MTO Class EA, this alternative would be new and/or improved (rehabilitated) Provincial Transportation Facilities (bridges). Since the bridge sites already exist, the alternative could be simply referred to as “Management of Bridge Infrastructure”.

✓ **Alternative 2a**: Rehabilitate the existing bridges to extend their service lives including structural upgrades to meet existing seismic code requirements. **This alternative is recommended to be carried forward.**

✓ **Alternative 2b**: Replace the existing bridges with new structure(s). **This alternative is recommended to be carried forward.**

The Assessment of Alternatives to the Undertaking Report is available on request to the MTO or Consultant Study Team email addresses.

Alternative Methods - Preliminary Design Alternatives Rigid Frame Bridge Sites

The Recommended Plan for the rigid frame bridge (replacement and construction staging methods) were presented to the public at PIC No. 2 (April 24, 2019). These documents can be found on the project website www.queenswaydowntownbridges.com under the “Public Consultation' tab".

Preliminary Design Alternatives Rideau Canal Bridge

Preliminary Design Alternatives carried forward for the Rideau Canal Bridge include rehabilitation or replacement of the bridge as bridge management strategies.

Bridge Preliminary Design Alternatives were considered and shown at PIC No. 2.

The preferred construction staging shown at PIC No. 2 recommended constructing the new bridges using rapid bridge replacement technology and constructing the new bridges on both sides of the Queensway. The impacts included, but were not limited to:

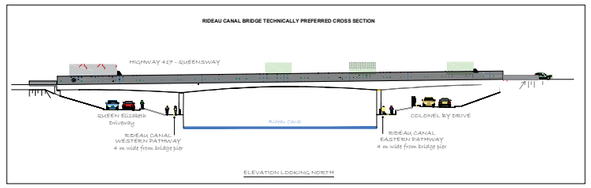
- **Spanning the 1220 mm diameter watermain that supplies east Ottawa**
- **Purchase and possible demolition of two buildings: 221 Echo Drive and 3/5 Hawthorne Avenue**
- **Potential impacts to the hydro buried high voltage plant on both sides of the canal**

Based on public and agency input at PIC No. 2 and additional technical investigations of Ontario Hydro buried high voltage plant, two modifications to previous technical recommendations presented at PIC No. 2 are being carried forward, including:

- **Placement of bridge piers to be integrated into the canal walls to avoid underground Hydro plant behind the canal walls on both sides of the canal, and**
- **Rideau Canal construction staging (eliminating the need to purchase and demolish two existing buildings, eliminating the potential risk of crossing over the south side 1220 mm diameter watermain and reduced risk and greater protection of the buried high voltage plant).**

Rideau Canal Bridge PIC No. 3 Refinement 1 Shift of Pier Locations

- The modified Technically Preferred Rideau Canal Alternative is proposed to shift the piers to avoid conflicts with high voltage buried ducts
- The technical recommendation is to construct the piers to be integrated with the canal walls
- The style and design of the wall/pier integration will be finalized during Detail Design with approvals of the NCC and Parks Canada
- The following exhibit reflects the recommended preliminary design.



Rideau Canal Bridge
PIC No. 3 Refinement 2
Construction Staging Alternatives

The following construction staging Alternatives were considered for the rapid replacement of the Rideau Canal bridges:

X
- Alternative 1: Original (PIC No. 2) Technically Preferred Alternative – Bridge construction areas north and south of the Queensway (required removal of the buildings at 221 Echo Drive and 3/5 Hawthorne Avenue and work over the City of Ottawa 1220 mm watermain)

X
- Alternative 2: Modified Technically Preferred Alternative – Bridge construction areas north and south of the Queensway (required removal of the parking lot from building at 221 Echo Drive) and work over the City of Ottawa 1220 mm watermain

✓
- Alternative 3: Bridge construction area north of the Queensway (no direct impact to the building at 221 Echo Drive, 3/5 Hawthorne Avenue or to the City of Ottawa 1220 mm watermain).

The three alternatives and the technical evaluation are presented on the following exhibits.

Rideau Canal Bridge TPA (PIC No. 2)
Construction Staging Areas
Alternative 1
Identified Property Acquisitions

- The Technically Preferred Alternative (TPA) shown at PIC No. 2 recommended the acquisition and possible demolition of two buildings (shown below)
- Public comments received at PIC No. 2 identified concerns with loss of buildings at 221 Echo Drive and 3/5 Hawthorne Avenue
- Buildings removed for construction access and crane placement
- **The TPA has changed to construct both bridges to the north and the acquisition and possible demolition of these two buildings is no longer recommended**

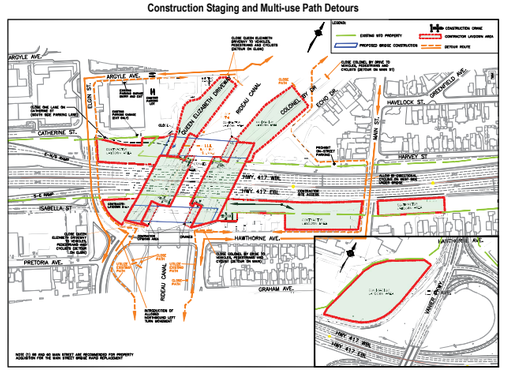


221 Echo Drive

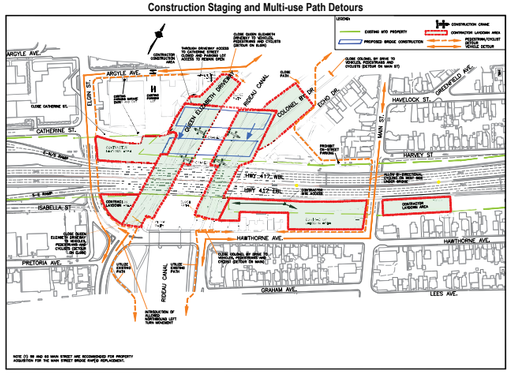


3/5 Hawthorne Avenue

Alternative 2
Construction Staging and Multi-use Path Detours



Alternative 3 (TPA)
Construction Staging and Multi-use Path Detours



Assessment of Rideau Canal Alternative Construction Staging Alternatives

Issue	Alternative 1	Alternative 2	Alternative 3
Permanent Impacts to Community Buildings	Poor – (2)	Fair – (1)	Good – (0)
Risk of Impact to Regional Watermain	Yes	Yes	No
Duration of Queensway Closure	4 days	4 days	4 days
Closures of Parkways (Roads and Pathways)	Required	Required	Required
Temporary Impacts (Visual and Noise) to Community	Yes (north and south side)	Yes (north and south side)	Yes (greater and all on north side)
Impact to Marine Navigation	Minimized/mitigated (25 m navigation channel to be maintained)		
Technical Recommendation	Not carried Forward	Not Carried Forward	Carried Forward

The Recommended construction staging plan will be Alternative 3 using staging areas mainly north of the Queensway. Mitigation for Queensway closure duration to include advance ramp closures to reduce the duration of the works.

Recommended Plan Rideau Canal Construction Staging Areas

The Recommended Rideau Canal Construction Staging Alternative 3 includes:

- Build both bridges to the north of the Queensway (single construction area)
- Parkway closures within the zone of the construction and detoured (improved safety of construction work area)
- Avoids permanent property impacts to 221 Echo Drive and 3/5 Hawthorne Avenue
- Detour of multi-use path and parkways on east and west side (improved safety of the construction work area)
- Temporary loss of parking: driveway access from Tiffany Apartments to Catherine Street will not be maintained during construction (front doors will be maintained for pedestrians but not for vehicles except Emergency Services when required).
- Avoids risk of construction in close proximity to the City's Regional 1220 mm diameter watermain

The Refined Technical Recommendations of PIC 3 reflect community input from PIC No. 2. A Statement of Flexibility will be included in the TESR that although Alternative 3 is preferred, Alternative 2 may be implemented, dependent on further technical information obtained during the detailed design stage.

Rideau Canal Bridge Replacement Construction Sequence
Year 1

Closure of Colonel By Drive and Queen Elizabeth Driveway

- Up to 90 weeks

Construct new piers and temporary substructure

- 15 weeks – June – October

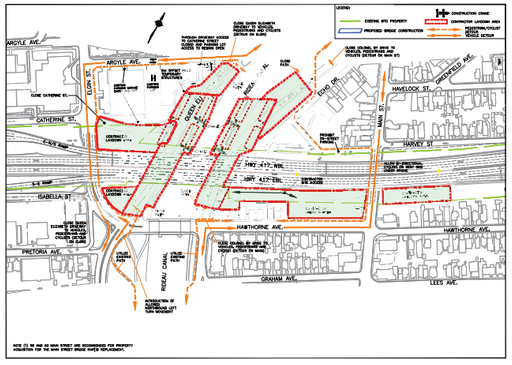
Partially fill canal for girder erection and temporary pier supports

- 5 weeks – July

The east and west side abutments will be widened to the north for the new Rideau Canal Bridges

- 8 weeks – October – December

YEAR 1 - STAGING



Rideau Canal Bridge Replacement Construction Sequence
Year 2

Place new girders over temporary supports

- 4 weeks - March (post skating season)

Construct new decks with semi-integral abutments

- April Year 2 – August

Construct barrier walls on decks and construct temporary supports between bridges and new substructure for slide.

- 4 weeks August – September

Waterproof decks (on temporary piers)

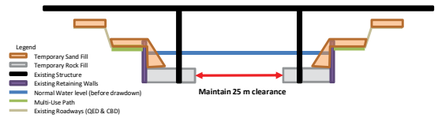
- 2 weeks - September

Fill in canal – Leave 25 m clearance for navigation - additional fill (beyond cofferdam used for the pier/new canal wall)

- 5 weeks – September (Labour Day) – October (Thanksgiving Day)

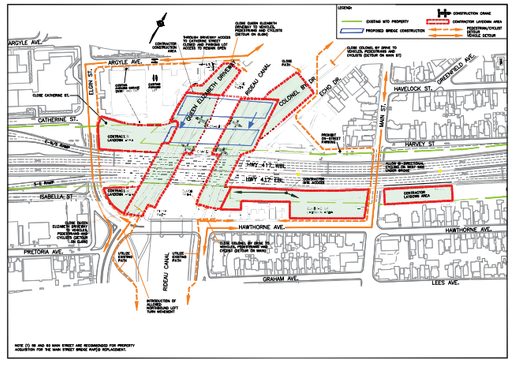
Protect Queen Elizabeth Driveway and Colonel By Drive new piers and Canal walls from existing bridge demolition

- 2 weeks – October



Labour Day to Thanksgiving Day

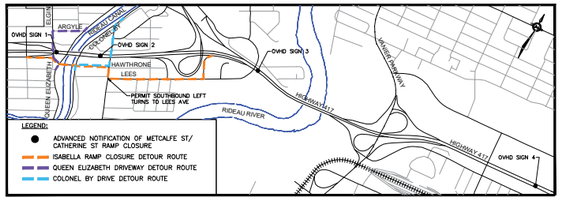
YEAR 2 - STAGING



1 Week Pre-Thanksgiving Weekend
Year 2

- Closure of ramps – Catherine Street off-ramp and Isabella Street on-ramp
- Advanced removal of exterior girders
- Boat traffic held during girder lifts by flagman
- Queensway ramp detour shown in following exhibit

RAMP CLOSURE DETOUR ROUTES
REPLACEMENT OF OTTAWA QUEENSWAY
RIDEAU CANAL BRIDGE (GWP# 4170-13-00)

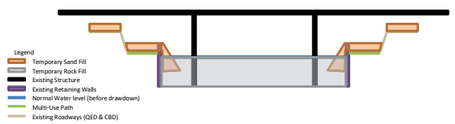


ADVANCED NOTIFICATION OF METCLAFE ST / CATHERINE ST RAMP CLOSURE - USE ALTERNATE ROUTE (NO DESIGNATED DETOUR)



Close Canal and Prepare for Rapid Bridge Replacement
Year 2

- Thanksgiving Closure of Canal – Parks Canada
  - Initiation of water draining/ let-down of water levels
- Place jack and slide mechanisms on temporary piers
- Complete infill of Canal (middle 25 m) and over Colonel By Drive and Queen Elizabeth Driveway
- Advanced coordinated multi-media notification of upcoming Queensway closure (VMS and PVMS, radio, television, newspaper)



Note: Infill during drawdown period when the Canal is fully closed

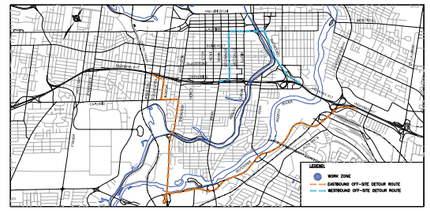
Temporary Queensway Closure for Structure Demolition and Jack and Slide of New Structures (4 days)

The Queensway will be closed for four (4) days to demolish the existing structures and slide the new Rideau Canal bridges in place. The schedule and timing is anticipated to be the following:

- Closure of Queensway to start 8:00 PM on first night of closure
- Freeway detour route shown in following exhibit
- Reopening of Queensway at 6:00 AM on last morning of closure

Note: If closure is Wednesday night, the Queensway will be reopened by Monday morning OR if closure is Thursday night, the Queensway will be reopened by Tuesday morning OR if closure is Friday night, the Queensway will be reopened by Wednesday morning.

OFF-SITE DETOUR
RAPID REPLACEMENT OF QUEENSWAY
RIDEAU CANAL BRIDGE



Rideau Canal Bridge Replacement Construction Sequence
Following Reopening of Queensway

Complete removals and reopening parkways and skateway in December

- Remove remaining debris and granular from Canal, Queen Elizabeth Driveway, and Colonel By Drive
- Remove temporary supports
- Removal of existing piers (1 m below canal bed)
- Reopen Colonel By Drive and Queen Elizabeth Driveway

Construct approach slabs/expansion joints for Rideau Canal Bridge – Evening/night lane closures of Queensway

- 8 weeks

Effects and Mitigation - Changes Since PIC No. 2

Factor	Environmental Issues and Potential Effects	Preliminary Design Proposed Mitigation Measures and Future Detail Design Mitigation Measures
Pedestrian / Cycling / Recreational Mobility	Potential for restricted pedestrian / cycling / recreational movement under Queensway or along other localized closures during construction – including along school / commuter / recreational routes. Longer term sidewalk closures required at bridge replacement sites to provide access to bridge footings.	**Preliminary Design -**Provide alternate detour routes and advance notifications of temporary closures.
Active Transportation – Multi-use Path	The width of the MUP in the vicinity of the Rideau Canal Bridge piers is narrow.	**Detail Design -** The width of the paths will be reviewed during Detail Design.
Traffic Operations – Delays and Closures	Potential for traffic travel delays associated with construction staging on the Queensway (weekend full closures for bridge replacements) or on ramps or roadways for temporary roadway or sidewalk closures (i.e. at all affected municipal roadways and the 2 affected NCC Parkways under the Rideau Canal bridge). **2-year closure of Colonel By Drive and Queen Elizabeth Driveway under and north of the Queensway for the replacement of Rideau Canal Bridge.**	**Preliminary and Detail Design -** Provide advance notice of all closures / lane reductions / detours. Prepare / implement Traffic Management Plan during construction including changeable message signs and incident detection. Limit lane closures (Queensway) during peak travel times. **Rideau Canal Bridge on- and off-ramp closures to allow advance demolition of the outside girders to accelerate replacement.**
Transit Operations	Disruption of OC Transpo bus service during municipal roadway closures and/or lane reductions.	**Preliminary and Detail Design -**Advance coordination with OC Transpo to identity construction impacts to transit service and to develop / communicate alternate service plans.
Emergency Services	Potential impact to emergency service routes / access due to closures / lane reductions. **Maintain access to 150 Queen Elizabeth Driveway from Argyle Avenue.**	**Preliminary and Detail Design -** Consider implications of multiple side street closures as part of project phasing. Prepare / implement Traffic Management Plan during construction. Ensure ongoing and advance communication with emergency service providers during construction.

Legend: Text revised since PIC No. 2

Effects and Mitigation - Changes Since PIC No. 2

Factor	Environmental Issues and Potential Effects	Preliminary Design Proposed Mitigation Measures and Future Detail Design Mitigation Measures
Property Impacts – Temporary City of Ottawa Ballantyne Park and Federal Canal lands (During Construction)	Catherine Street south parking lane will temporarily be used during construction Ballantyne Park will be used as a construction site for the Rideau Canal and Main Street Bridges. Noise barrier replacement may affect properties along the recommended barrier limits, see the Noise exhibit. Use of Rideau Canal temporarily for construction	**Preliminary and Detail Design** Potential for refinement during Detail Design and documentation of results in Design and Construction Report. Potential use of City of Ottawa property and Federal lands for construction staging areas. Early communication / coordination with owner(s) and tenants to minimize disruption. Reinstatement of any disturbed areas to original condition or better. Protection of all canal infrastructure and timing of works to avoid effects to navigation and winter skating season.
Parking Impacts – Temporary	**Temporary loss of parking on streets and in parking lots to accommodate contractor laydown areas and construction works.**	**Temporary Limited Interest (TLI) will be obtained for the use of the parking lots behind 3/5 Hawthorne Avenue and the Tiffany Apartments.**
Property Impacts - Permanent	**Purchase of 58 and 60 Main Street (Organic Salon and Gordon McGovern Construction) for Main Street bridge replacement.**	**Preliminary Design -**Early communication / coordination with owner(s) and tenants to minimize disruption associated with property purchase.
~~**Property Impacts – Permanent**~~ (Avoided)	~~**Proposed private property purchases of Royal Oak Pub, Cyco's Cycle Shop/Greek on Wheels.**~~ The Technically Preferred Alternative (Alternative 3) preserves the buildings at 221 Echo Drive (Royal Oak Pub) and 3/5 Hawthorne Avenue (Cyco's Cycle Shop/Greek on Wheels) that were previously recommended for acquisition and demolition.	~~**Early communication / coordination with owner(s) and tenants to minimize disruption associated with property purchase.**~~
Social Environment (During Construction)	Various properties within close proximity to the bridge sites and staging areas **will** experience some level of temporary impact during construction (e.g. construction noise, dust, visual intrusion etc.) These temporary effects affect: 7/9 Hawthorne Avenue, 15/17 Hawthorne Avenue, 19/21 Hawthorne Avenue, 25 Hawthorne Avenue, 27 Hawthorne, **150 Queen Elizabeth Driveway, 475 Elgin Street, Echo Drive and Harvey Street west of Main Street.**	**Preliminary and Detail Design** Early communication / coordination with owner(s) and tenants to minimize disruption. Reinstatement of any disturbed areas to original condition or better. Maintain access to all properties.

Legend: Text revised since PIC No. 2
Additional commentary

Effects and Mitigation - Changes Since PIC No. 2

Factor	Environmental Issues and Potential Effects	Preliminary Design Proposed Mitigation Measures and Future Detail Design Mitigation Measures
Aesthetics	Bridge rehabilitation or replacement provides opportunities to enhance aesthetics of existing bridge sites.	**Detail Design -** If extent of work at any given site supports it, context sensitive design elements will be considered for inclusion.
Archaeology	Potential damage to or loss of archaeological artefacts.	**Preliminary Design -** Stage 1 **Terrestrial and Marine** Archaeological Assessment has not identified any areas of archaeological potential. **Detail Design -** If deeply buried archaeological remains are encountered during construction, construction will be stopped in the vicinity of the discovery and the contractor must notify the Ministry of Tourism, Sport and Culture.
Heritage	Special attention must be given to the Rideau Canal, as it was designated a National Historic Site of Canada in 1925 and a UNESCO World Heritage Site in 2007 and is owned by the Government of Canada and administered by Parks Canada. Temporary effects on scenic entry routes and significant views (as described in the City of Ottawa OP Schedule 1 – Multi-Use Pathways and Scenic/Entry Routes – Urban) due to temporary staging areas and alteration of bridge design. Impacts to buildings with historical value at the intersection of Main Street and Hawthorne Avenue: a former gas station landmark. Early 19th century buildings in the local study area.	**Preliminary and Detail Design -** Consult with Federal and Parks Canada agencies to ensure acceptable design considerations for the bridge works, and to facilitate scenic and entry routes to the Rideau Canal to the City. **Undertake a Cultural Heritage Evaluation Report for 60 Main Street, a former gas station landmark to assist in the future management of the property. The ability to address potential historical features at 60 Main Street post construction is under investigation.**
Construction Noise	Noise from construction equipment and vehicles during construction.	**Detail Design -** Maintain equipment in good operating condition to prevent unnecessary noise. Restrict idling of equipment to the minimum necessary to perform the work. MTO to obtain approval for a noise by-law exemption for weekend / evening work as required. Contractor will be required to abide by noise control by-laws for day-to-day operations.

Legend: Text revised since PIC No. 2

Effects and Mitigation - Changes Since PIC No. 2

Factor	Environmental Issues and Potential Effects	Preliminary Design Proposed Mitigation Measures and Future Detail Design Mitigation Measures
Contaminated Property	Potential for soil and/or groundwater contamination given historical land uses. Six sources of medium or high potential environmental contamination within the local study area, identified for the Contamination Overview Study (COS). Historic uses of numerous sites adjacent to Highway 417 as area of gasoline storage and manufacturing. One site listed under the Federal Contaminated Sites Inventory (FCSI) at Nicholas and Queensway: a five hectare site adjacent to Harvey street with soil contamination of PAHs (polycyclic aromatic hydrocarbons) and metal, metalloid, and organometallic compounds.	**Detail Design -** Develop a Soils Management Plan and/or a Phase II Environmental Site Assessment (ESA) **in accordance with *Part XV.1 of the Environmental Protection Act*** **(EPA) and Ontario Regulation 153/04.**
Erosion and Sediment	Potential for erosion / sedimentation during construction.	**Detail Design -** Standard erosion and sediment control measures to be incorporated into construction contract – including measure to prevent off-site transport of sediment and prompt restoration of disturbed areas.
Groundwater	Potential for dewatering at bridge sites for bridge replacement options.	**Detail Design -** If any subsurface works are determined during Detail Design and dewatering is anticipated , the impacts will be determined during Detail Design.
Management of Excess Materials	The project will result in the generation of waste asphalt, granulars, concrete and possibly earth materials.	**Detail Design -** Excess generation will be minimized through promoting contractor salvage, recycling and re-use in the contract tender documents **in accordance with the new regulation titled " On-site and Excess Soil Management" (O.Reg.406/19, under the *Environmental Protection Act*.**

Legend: Text revised since PIC No. 2

Effects and Mitigation - Changes Since PIC No. 2

Factor	Environmental Issues and Potential Effects	Preliminary Design Proposed Mitigation Measures and Future Detail Design Mitigation Measures
Species at Risk – Birds	Potential disruption to migratory birds, nesting and / or species at risk (SAR) including,: Chimney Swift (THR) - potential habitat within 200 m if brick chimneys of greater than 30 cm diameter and with rough interiors exist; Barn Swallow (THR) - potential habitat within 200 m if covered ledges and rough concrete exist; Peregrine Falcon (SC) – likely habitat due to waterbody of the Rideau Canal and River and proximity to ledges on tall buildings.	**Detail Design -** Conduct site 'sweeps' prior to any tree removals and prior to and during construction. Clear any vegetation outside of the breeding bird season which runs from **April 1 – August 31**, according to The Migratory Birds Convention Act. Failure to do so may result in triggering of the ESA. Ensure contractor's staff are trained to recognize potentially affected species and are required to notify authorities if any are encountered on site.
Tourism / Events	Potential construction disruption to various festivals / events	**Detail Design -** Schedule construction activities to limit / avoid disruption to major festivals / events (where possible.)
Utilities	Potential for impacts to existing utilities in the vicinity of the bridges, work sites or along access routes from staging areas.	**Preliminary and Detail Design -** Ensure advance coordination with utility companies and approval for all utility relocations / protections. **Rideau Canal bridge construction shifted north of Queensway to avoid risk to Regional 1220 mm water main supplying east Ottawa.** **Protect buried high voltage transmission Hydro line by bridging over during construction and moving footings of piers further away.**

Legend: Text revised since PIC No. 2

Effects and Mitigation - Changes Since PIC No. 2

Factor	Environmental Issues and Potential Effects	Preliminary Design Proposed Mitigation Measures and Future Detail Design Mitigation Measures
Vegetation	Removal of various trees and woody vegetation due to clearing for staging areas.	**Detail Design -** Maintain, as possible, mature tree specimens with a diameter (DBH) greater than 50 cm. Native lilacs in M1 should be maintained if possible. Most sites had no natural environmental features and are not likely to support native features. No trees would qualify for the City of Ottawa's Honour Role Trees list. No environmentally sensitive areas, ANSIs or significant wetlands noted by NDMNRF nor under the City's Official Plan.
Federal Permits and Approvals	The following are a list of permits and/or approvals that may be a requirement for this project: 1. Navigation Protection (Transport Canada) 2. In-water and Shoreline Works Permit (Parks Canada) 3. Federal Work Permit (NCC) 4. The project will follow the MTO/DFO/NDMNRF (Protocol Version No. 4 2020) in regards to potential fisheries impacts	**Preliminary and Detail Design -** The NCC, Parks Canada, Transport Canada and DFO have been consulted with during this Preliminary Design EA to determine permitting requirements. Additional consultation will be initiated as part of the future Detail Design and contract preparation phase, necessary prior to submission of permit applications.
Design and Construction Report	In accordance with the MTO Class EA process, a Design and Construction Report (DCR) will be completed during Detail Design to outline the mitigation requirements and construction methods and impacts.	**Detail Design -** The future creation and public review of a DCR.

Legend: Text revised since PIC No. 2

Next Steps

Following this meeting we will:

- Review all comments after PIC No. 3
- Review of refinements for inclusion in the Recommended Plans
- Finalize the Recommended Plan
- Prepare the Transportation Environmental Study Report (TESR)
- Present to City of Ottawa Transportation Committee
- Place the Study Completion Notice in local newspapers (the Citizen and Le Droit)
- 30-day public review period of the TESR
- Environmental Clearance of TESR
- Detail Design (future date)
- Construction (future date)

How can you remain involved in the Study?

- Request that your name/e-mail be added to the mailing list
- Email your comments by **November 30, 2022**
- Contact MTO or consultant representatives at any time
- Check the project website at **www.queenswaydowntownbridges.com**

Thank you for your participation in the web-based PIC .

Your input into this study is valuable and appreciated.

Please provide your emailed comments on or before November 30, 2022.

All information is collected in accordance with the *Freedom of Information and Protection of Privacy Act.*

Appendix B
Newspaper Notices, Flyers and Letters

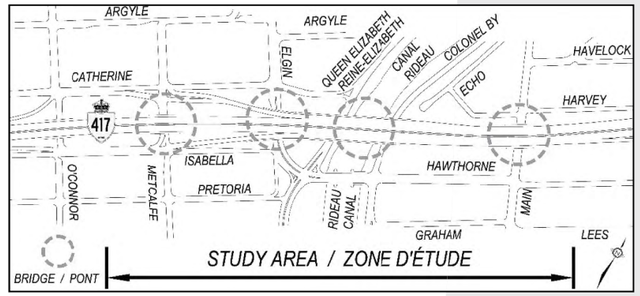


Ontario Government Notice

Public Information Centre No. 3
Ottawa Queensway Downtown Bridges Environmental Assessment Study, Metcalfe Street to Main Street Group
Work Project 4170-13-00

THE STUDY

The **Ministry of Transportation (MTO)** has retained **BT Engineering Inc. (BTE)** to undertake a preliminary design and environmental assessment study for the rehabilitation and/or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study has determined the appropriate strategy for the replacement of these bridges.



THE PROCESS

This study is following the *Class Environmental Assessment for Provincial Transportation Facilities* (2000) (Class EA) planning process for a Group "B" project, with the opportunity for external agency and public consultation throughout the project.

PUBLIC INFORMATION CENTRES (PIC)

The first PIC was held in December 2017 with the purpose of introducing the project, outlining the Class EA process, presenting the draft Study Design Report, identifying the need and justification, outlining the environmental factors to be considered, identifying preliminary design alternatives at the four bridge sites and obtaining public, agency and Indigenous Peoples comments on the presented material, The second PIC was held in April 2019 to present the technical recommendations and mitigation plan for each of the bridge sites and receive public, agency, and Indigenous Peoples input on the recommendations. The technical recommendation for the Rideau Canal Bridge presented at PIC No. 2 was for the new bridges to be constructed on both sides of the existing bridges and slid into place from both sides.

PIC NO. 3

Based on comments received at PIC No. 2 and the associated impacts of the technical recommendations on adjacent properties and major buried utilities, the recommendations were reviewed. Following the investigation and review of alternatives, a new technical recommendation for the Rideau Canal Bridge is being presented at a third PIC. This PIC is focused on the Rideau Canal Bridge replacement and an alternative rapid bridge replacement strategy. The alternative is to construct both new bridges to the north of the existing bridges and slide the new bridges in from the north. This involves additional road closures and impacts to adjacent residents not previously identified. As this changes the technical recommendation shown at PIC No. 2, the third PIC is being undertaken to provide the public, adjacent residents, agencies and Indigenous People an opportunity to comment on this new Technically Preferred Alternative.

ONLINE PUBLIC INFORMATION CENTRE NO. 3

You are invited to participate and view the PIC No. 3 information materials and provide any comments. The materials will summarize the project existing conditions and provide information about the revised alternative with proposed construction of the bridges for the Rideau Canal structures on the north side of the Queensway. In response to ongoing COVID-19 issues, the Public Information Centre is relying on web-based communications. Questions and comments on the information presented can be directed to the project email address queenswaydowntownbridges@bteng.ca.

The online PIC will commence November 15, 2022, and run for a 2-week period. The bilingual exhibits will be available during this period online at: www.queenswaydowntownbridges.com

WEBSITE

A website (www.queenswaydowntownbridges.com) was created when the study was commenced and has been updated over the course of the study. Those wishing information on the study's past process and the Study Design Report (which outlined the study's process), background information, and Questions and Answers are encouraged to visit the website. The website also provides an additional means for you to communicate your comments and concerns.

ACCESSIBILITY

If you have any accessibility requirements in order to view the PIC materials and participate in this study , please contact the project email address queenswaydowntownbridges@bteng.ca or visit the project website at: **www.queenswaydowntownbridges.com**

All information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act* (2009).

With the exception of personal information, all comments will become part of the public record. Pour des renseignements en français, veuillez communiquer avec Daniel Riendeau au 613 228 4813 ou à daniel.riendeau@bteng.ca

Ontario

Avis du gouvernement de l'ontario

Séance d'information publique nº 3
Étude d'évaluation environnementale des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main
Projet de groupe 4170-13-00

L'ÉTUDE

Le **ministère des Transports de l'Ontario (MTO)** a retenu les services de **BT Engineering Inc. (BTE)** pour réaliser une étude de conception préliminaire et d'évaluation environnementale de la réfection ou du remplacement de sept ponts (quatre emplacements) de l'autoroute 417 (Queensway) entre les rues Metcalfe et Main, incluant le pont du canal Rideau, à Ottawa. Cette étude a déterminé la stratégie appropriée pour le remplacement de ces ponts.

LE PROCESSUS

La présente étude fait suite au processus de planification établi par *l'Évaluation environnementale de portée générale pour les routes provinciales* (2000) (processus d'EE) pour les projets du groupe B, avec la possibilité de consultations d'organismes externes et du public tout au long du projet.

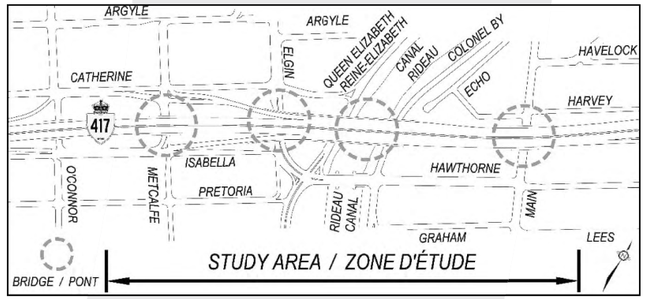
SÉANCES D'INFORMATION PUBLIQUES

La séance d'information publique (SIP) nº 1 a eu lieu en décembre 2017 dans le but de présenter le projet, de décrire le processus d'EE, de présenter le plan d'étude préliminaire, de déterminer les besoins et la justification, de décrire les facteurs environnementaux à prendre en compte, de déterminer les options de conception préliminaires aux quatre emplacements et d'obtenir les commentaires du public, des organismes concernés et des peuples autochtones sur le matériel présenté.

La **SIP nº 2** a eu lieu en avril 2019 pour présenter les recommandations techniques et le plan d'atténuation pour chacun des emplacements et recevoir les commentaires du public, des organismes concernés et des peuples autochtones sur les recommandations. À la lumière des commentaires reçus à la SIP nº 2 concernant les impacts des recommandations techniques relatives au canal Rideau sur les propriétés adjacentes et les services souterrains, les recommandations ont été examinées. Après l'enquête et l'examen des solutions de rechange, une nouvelle recommandation technique est présentée à la SIP nº 3.

SIP Nº 3

La SIP actuelle sera consacrée au remplacement des ponts du canal Rideau et à une nouvelle stratégie de remplacement rapide. La stratégie proposée consiste à construire les deux nouveaux ponts au nord des ponts existants et à les faire glisser en place. Cela implique des fermetures de route supplémentaires et des impacts temporaires sur les résidents adjacents qui n'ont pas encore été définis. Comme cela modifie la recommandation technique présentée à la SIP nº 2, la



SIP nº 3 est organisée afin de permettre aux peuples autochtones, au public, aux résidents adjacents et aux organismes concernés de commenter cette nouvelle solution privilégiée sur le plan technique.

SÉANCE D'INFORMATION PUBLIQUE EN LIGNE Nº 3

Vous êtes invités à participer, à consulter les documents d'information et à fournir vos commentaires. En réponse aux problèmes actuels liés à la COVID-19, la séance d'information publique s'appuie sur la communication sur le web. Les questions et les commentaires sur les informations présentées peuvent être envoyés à l'adresse courriel du projet : queenswaydowntownbridges@bteng.ca.

La SIP en ligne commencera le 15 novembre 2022 et durera 2 semaines. La documentation bilingue sera disponible pendant cette période à l'adresse suivante : www.queenswaydowntownbridges.com.

SITE WEB

Un site web (www.queenswaydowntownbridges.com) a été créé au début de l'étude et a été mis à jour tout au long du processus. Les personnes désirant obtenir de l'information sur le processus antérieur et le plan d'étude (décrivant le processus), les références et les réponses aux questions fréquentes sont invitées à visiter le site web. Ce site constitue également un moyen supplémentaire d'acheminer vos commentaires et préoccupations.

ACCESSIBILITÉ

Si vous avez des besoins en matière d'accessibilité afin de consulter les documents de la SIP et de participer à cette étude, veuillez nous en faire part à l'adresse courriel du projet queenswaydowntownbridges@bteng.ca ou visiter le site web du projet à l'adresse suivante : **www.queenswaydowntownbridges.com**

Tous les renseignements seront recueillis conformément à la *Loi sur l'accès à l'information et la protection de la vie privée* (2009). À l'exception des renseignements personnels, tous les commentaires relèveront du domaine public.

Pour obtenir des renseignements en français, veuillez communiquer avec Daniel Riendeau au 613 228-4813 ou à daniel.riendeau@bteng.ca..

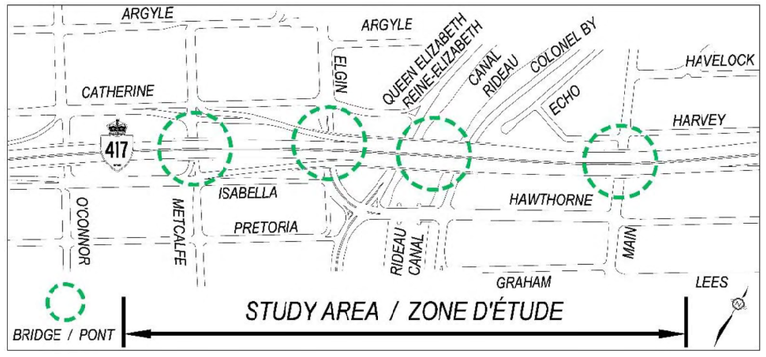
Ontario

ONTARIO GOVERNMENT NOTICE

Public Information Centre No. 3

Ottawa Queensway Downtown Bridges Environmental Assessment Study
Metcalfe Street to Main Street
Group Work Project 4170-13-00

THE STUDY - The **Ontario Ministry of Transportation (MTO)** has retained **BT Engineering Inc. (BTE)** to undertake a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study has determined the appropriate strategy for the replacement of these bridges.



THE PROCESS - This study is following the Class Environmental Assessment for Provincial Transportation Facilities (2000) (Class EA) planning process for a Group "B" project, with the opportunity for external agency and public consultation throughout the project.

Public Information Centres

Public information Centre (PIC) No. 1 was held in December 2017 with the purpose of introducing the project, outlining the Class EA process, presenting the draft Study Design Report, identifying the need and justification, outlining the environmental factors to be considered, identifying preliminary design alternatives at the four bridge sites and obtaining public, agency and Indigenous Peoples comments on the presented material.

PIC No. 2 was held in April 2019 to present the technical recommendations and mitigation plan for each of the bridge sites and receive public, agency, and Indigenous Peoples input on the recommendations. Based on comments received at PIC No. 2 specific to Rideau Canal replacement and the associated impacts of the technical recommendations on adjacent properties and major buried utilities, the recommendations were reviewed. Following the investigation and review of alternatives, a new technical recommendation is being presented at a third PIC.

PIC No. 3 This current PIC will be focused on the Rideau Canal Bridge replacement and an alternative rapid bridge replacement strategy. The alternative is to construct both new bridges to the north of the existing bridges and slide the new bridges in from the north. This involves additional road closures and temporary impacts to adjacent residents not previously identified. As this changes the technical recommendation shown at PIC No. 2, the third PIC is being undertaken to provide Indigenous People, the public, adjacent residents, and agencies an opportunity to comment on this new Technically Preferred Alternative.

ONLINE PUBLIC INFORMATION CENTRE NO. 3 - You are invited to participate and view the PIC No. 3 information materials and provide any comments. In response to ongoing COVID-19 issues, the Public Information Centre is relying on web-based communications. Questions and comments on the information presented can be directed to the project email address queenswaydowntownbridges@bteng.ca.

The online PIC will commence November 15, 2022, and run for a 2-week period. The bilingual exhibits will be available during this period online at: www.queenswaydowntownbridges.com

WEBSITE – A website (www.queenswaydowntownbridges.com) was created when the study was commenced and has been updated over the course of the study. Those wishing information on the study's past process and the Study Design Report (which outlined the study's process), background information, and Questions and Answers are encouraged to visit the website. The website also provides an additional means for you to communicate your comments and concerns.

ACCESSIBILITY- If you have any accessibility requirements in order to view the PIC materials and participate in this study , please contact the project email address queenswaydowntownbridges@bteng.ca or visit the project website at: **www.queenswaydowntownbridges.com**

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Appendix C
Comment Sheets



[redacted] Comment Sheet 1

From: [redacted]
Sent: November 15, 2022 5:13 PM
To: Queensway Downtown Bridges
Subject: Questions and concerns related to bridge replacement on the 417

So first, thank you for the update and the opportunity to provide feedback.

So I read the following document:
https://queenswaydowntownbridges.com/wp-content/uploads/2022/11/GWP4170-13-00-17-010-PIC-3-EN-Exhibits-Nov-10-22-V12-QC-1.pdf

Observations/questions
As it seems Alternative 3 is the plan going forward:

1. So according to slide 17 (page 16), the ***Contractor Laydown Area*** highlighted just south and north of the highway 417 – I assume the vegetation will be removed but also the earth (specifically the slopes climbing to the highway) will be regraded to create a flat path. If so, will there be shoring of the foundations of the highway to prevent possible collapse of the newly formed earthen walls? When the bridge replacement is completed, will the slopes be re-added as well as new vegetation?

2. When the projects are completed, what is the plan for all the site access and laydown areas, especially Ballantyne Park? Is there going to be public consultation how best to use that land?

3. I assume the ***Contractor Laydown Areas*** depicted west and east of Main street near the Main street bridge will be used to rebuild the Main street bridge?

4. It seems the plan is focused on the Rideau Canal bridges but will the Main St bridge be renovated at the same time as the Rideau bridge? If not, what is the schedule for the Main St. bridge?

5. For Slide 18 (page 17 of the document), under the highlighted **Temporary Impacts**, I am not clear what is meant by Yes. Moreover, for Alternative 3, it says the impact is 'greater and all on the north side'. I find it hard to believe that sound and vibrations will not travel to the south side. Also, the temporary impact is only for the 4 days of closure? What about the weeks of scheduled work and construction access to the ***Contractor Laydown Areas***? What is the impact associated with those weeks (months) of work?

6. Will property assessments be done prior to construction to measure impact of the construction to the structures close to these affected areas? As a resident on Hawthorne, my house briefly shakes when a heavy truck drives by on Hawthorne. I can only assume the amount of heavy machinery coming and going PLUS the traffic will only add to wear-and-tear on the our properties. What are our rights on this?

7. On page 19, for Year 1, you provide a crude timeline but it does not specify when the ***Contractor Site Accesses*** and ***Contractor Laydown Areas*** will be started (see slide 21, page 20).

8. As an important aside, Hawthorne Ave as with many other adjacent streets in the area, will be undergoing major infrastructure repairs including narrowing of the road, widening of the sidewalks, changing of the water main, storm, and sewage drains . Will this bridge replacements project take place

Comment Sheet 1

after, during, or before this major renovation led by the City of Ottawa? If after, what will MTO do to minimize damage to the newly built infrastructure (new sidewalks, newly paved roads, etc.)?

9. You mention contaminated sites (six sources of medium or high potential environmental contamination within the area; page 33). It would be nice to see where the contaminated sites are located, especially those that may be affected by the construction. On the maps used to showcase the construction areas, can you show the contaminated areas?

10. There is a temporary closure of the Queensway for 4 days and my street becomes the major thoroughfare (detour) – Will alternate street parking be arranged with the City of Ottawa or possibly special parking passes be provided so that residents, who may be negatively impacted with regard to access, can park their vehicles at alternate locations without fear of being ticketed by the City?

11. On slide 31, you mention under Property Impacts, Noise barrier replacement may affect properitis along the recommended barrier limits, see the Noise exhibit' Where is it? I notice that you may be working weekends and evenings and the MTO will ask for noise by-law exemption for weekends and evenings when required. I live on the street so what are the procedures in case there is a problem with the noise?

Thank you for your time.

[redacted]

RE: 417 bridge replacement at Queen Elizabeth

Comment Sheet 2

[redacted]

Mon 2022-11-14 10:33 AM

To: [redacted]

Thank you for your comments. The third Public Information Centre is going live online on November 15, 2022. Additional information describing the proposed approach will be available on the website. www.queenswaydowntownbridges.com

As part of the Environmental Assessment process community engagement is a key principle of the planning and preliminary design process. Following PIC No. 2 community comments requested reconsideration of the recommendations presented at PIC 2. These comments were also received from the City of Ottawa. The Project Team undertook an extensive assessment and evaluation of both the previous recommendations and the feasibility of staging construction completely on the north side. This assessment and evaluation has recommended constructing both bridges to the north to limit the long-term permanent impacts. While there will be disruptions for the two construction seasons, MTO has committed to restoring the landscape to existing conditions and mitigating short term (construction) and long term (post construction) effects where possible. The NCC, Parks Canada and the City of Ottawa have been supportive of changing the recommendations to avoid permanent impacts to heritage properties (3/5 Hawthorne) and community assets (221 Echo Drive). In addition, this northern location will eliminate the potential risk to the regional water main that supplies eastern Ottawa.

The modified study recommendation is being presented for public review and comments. Your comments will be recorded as part of the Record of Consultation.

Thank you for providing these comments to the Study Team.

Regards,

[redacted]

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

The residents here in the buildings affected by your new strategy are beyond furious. This plan is by far the worst of the 3 plans, impacting not only **hundreds more residents**, but also tourism for the canal, active transport for all the bikers and runners that use the space daily, traffic that is already restricted

Comment Sheet 2

due to Elgin being traffic calmed, **impedes a major route for emergency services** used multiple times daily to avoid traffic, and destroys wildlife habitat that is hard to come by in the downtown core.

Why you choose to do the work here, instead of the open park and vacant commercial at Hawthorne and Main is unbelievable. We will be taking action against it at every level possible.

[redacted]

Comment Sheet 3

Re: 417 bridge replacement at Queen Elizabeth

[redacted]

After reviewing the package you have made available on the website, it becomes even more clear how ludicrous this (3rd) plan is. In addition to the concerns I have already raised, please see the following:

-Your report itself states that this (3rd)plan will have the **greatest impact** on residents of the three!
-There are many elderly residents with mobility issues in the building who use the bench in the space you want to demolish for much needed outdoor time and socialization. It is unfair to disregard their needs **simply because they are seniors and may not be able to stand up for themselves**
-Thousands of people use the Queen Elizabeth corridor for cycling, running and walking every day. To think you can detour them down argyle, which will already be subject to increased vehicle traffic, and through Elgin, which is already extremely busy and dangerous, is completely irresponsible. You will be **RISKING LIVES** of the people that do use the detour, and probably eliminating the activities of those that wont use the detour, which works contrary to what the city's goals are, and will result in more cars on the roads.
-The south side of both high rise buildings affected will have no emergency service access for fire trucks in your plan. If a fire breaks out on one of the south sides, no fire services will be able to access them in a timely manner. Again you **ARE RISKING LIVES**.
-You plan states that concerns were raised about a "heritage building" on Hawthorne, and shoddy run down cycle shop (25 Hawthorne) that is already an eye sore. I hope you can see where those concerns pale in comparison to the Tiffany which was built in the 1950's and is a home to **HURDREDS of residents.**
-27 Hawthorne was sold April 2022, a wooden structure, easily replaced.
-You, the province, **already own 58 Hawthorne** and it has been sitting vacant a very long time.
-Your reports talk about possible nesting spots in taller buildings for Perrigan Falcons, as an endangered species. What do you think the roof top of the Tiffany is? Has anyone even bothered to come and look? Even if the noise does not displace them, you will be destroying all the trees and shrubs that undoubtedly work as part of their habitat, as well as for their prey.

Maybe someone needs to start thinking about a 4th option, where the bridge is constructed in a field further away, Like the soccer field on Echo Dr, just around the corner, or the **Fields at Carelton University**, and then move the constructed bridges up by shutting down QED and CBD for a weekend.

We have also taken note how last minute the notices were delivered, on papers that looked like little more than junk mail, right at a time of year when people are going on vacation. I would dare to say you were hoping to get as little opposition to this plan as possible, and I believe courts would see it the same way.

I await your response.

[redacted]

613.400.3425

Comment Sheet 3

[redacted]

Thank you for your comments. The third Public Information Centre is going live online on November 15, 2022. Additional information describing the proposed approach will be available on the website. www.queenswaydowntownbridges.com

As part of the Environmental Assessment process community engagement is a key principle of the planning and preliminary design process. Following PIC No. 2 community comments requested reconsideration of the recommendations presented at PIC 2. These comments were also received from the City of Ottawa. The Project Team undertook an extensive assessment and evaluation of both the previous recommendations and the feasibility of staging construction completely on the north side. This assessment and evaluation has recommended constructing both bridges to the north to limit the long-term permanent impacts. While there will be disruptions for the two construction seasons, MTO has committed to restoring the landscape to existing conditions and mitigating short term (construction) and long term (post construction) effects where possible. The NCC, Parks Canada and the City of Ottawa have been supportive of changing the recommendations to avoid permanent impacts to heritage properties (3/5 Hawthorne) and community assets (221 Echo Drive). In addition, this northern location will eliminate the potential risk to the regional water main that supplies eastern Ottawa.

The modified study recommendation is being presented for public review and comments. Your comments will be recorded as part of the Record of Consultation.

Thank you for providing these comments to the Study Team.

Regards,

Ken Rogers, P.Eng.
Sr. Project Engineer
Ministry of Transportation
Project Delivery East
1355 John Counter Blvd. | Kingston | Ontario | K7L 5A3
Cell: 613-483-1467

[redacted]

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

The residents here in the buildings affected by your new strategy are beyond furious. This plan is by far the worst of the 3 plans, impacting not only **hundreds more residents**, but also tourism for the canal, active transport for all the bikers and runners that use the space daily, traffic that is already restricted

due to Elgin being traffic calmed, **impedes a major route for emergency services** used multiple times daily to avoid traffic, and destroys wildlife habitat that is hard to come by in the downtown core.

Why you choose to do the work here, instead of the open park and vacant commercial at Hawthorne and Main is unbelievable. We will be taking action against it at every level possible.

[redacted]

[redacted] Comment Sheet 4

From: [redacted]
Sent: November 15, 2022 5:10 PM
To: Queensway Downtown Bridges
Cc: [redacted]
[redacted] Ridiculous proposal in PIC 3

Good afternoon,

Looking at the PIC 3 exhibits, I see where you blithely assume that it is reasonable to close both Queen Elizabeth Drive and Colonel By Drive for two years while you construct the bridges. How would you then accommodate both vehicular and bicycle north/south traffic during that period? Note that there is no bike lane in that part of Main to reroute the cycling traffic. Note that Ottawa East has only the Main Street and Colonel By Drive means of travelling North so closing Colonel By directs all traffic onto a more crowded Main Street. If either Colonel By or Queen Elizabeth was left open, there could be some re-arrangement of traffic patterns but your proposal does not allow for that.

Look elsewhere. This proposal makes no sense for the communities adjacent to the Canal. You are trying to minimize Queensway disruption by foisting all the inconvenience on our downtown communities.

[redacted]

[redacted]

Comment Sheet 5

From: [redacted]
Sent: November 16, 2022 12:59 PM
To: Queensway Downtown Bridges
Subject: Queensway project

As a long-time resident at the Tiffany, I couldn't be more disappointed in this proposal.

The plan itself admits that this new proposal has a greater impact on the residents, the environment and the people who use the canal daily! How is this okay?!

There are 128 units at the Tiffany, hundreds of people live here; forget about the people who work from home, a lot of the residents at the Tiffany are elderly and they enjoy the peace and quiet this part of the city provides while still being close to the other important amenities. Most of these elderly people frequently use the front lawn to socialize with other residents and their friends; there are no other places in the building for these people to use as most of them have mobility issues.

The Tiffany is one of Ottawa's historic apartment buildings; it has been around since the early 1950s: IT IS WAY OLDER THAN MOST OF YOU PEOPLE!!!
Despite being in downtown, it is still one of the most affordable buildings in this area. This building will not survive the damage that will come from having heavy construction 5 meters away from it!

Let alone the fact that the canal is a world heritage site, there are hundreds of people using this area for their daily activities of commuting, exercising, riding their bikes, walking their kids, dogs etc. There is a lot of wildlife that lives in the area, along with very old trees.

The part that you are planning on closing is also the most used part by the emergency vehicles as this is the only way they can avoid the mess the city created on Elgin Street!

What do you think is going to happen to all of those things?

I simply can't understand what is making you people choose to have this work done on a world heritage site that's being occupied by so many animals and is used by hundreds of people every single day.

I thought we were all about the environment, the bike lanes, and affordable housing, what happened to all of that?!

I will repeat again:
The plan itself admits that this proposal has the greatest impact on everyone and everything!!!

I am 100% sure if one of these officials, including this project's managers, lived in this area or in this building, they'd be against it and would pull all the strings and go above and beyond to make sure that it doesn't come to life!

Put yourself in the shoes of the people who live here, who use this area daily; would you want to go through what you plan us to go through for 90 weeks ?!?!

[redacted]

Comment Sheet 6

[redacted]

VIA EMAIL

October 19, 2022

[redacted]

Dear [redacted]:

Re: Impacts of Highway 417 Rehabilitation/Replacement of Downtown Bridges (Metcalfe Street to Main Street) on Tiffany Apartments

As you are aware, we are lawyers for Paramount Properties, the owner of Tiffany Apartments, a property municipally known as 150 Queen Elizabeth Driveway, Ottawa, ON K2P 1E7 (the "**Apartment**").

We are in receipt of the minutes and preliminary drawings from the meeting held September 27, 2022 on location at the Apartments. We thank you for meeting with us and documenting our discussions on a project to construction and replace two 417 Highway bridges crossing the Rideau Canal, being the Metcalfe Street and Main Street bridges (the "**Project**").

[redacted]

We believe the Project, in its current design configuration, will unreasonably disturb the tenants' private use and enjoyment of the Apartment and will result in significant damages for injurious affection. The impacts on the Apartment, that will endure for multiple years, include:

a. Encroachment on Apartment land causing a loss of tenant parking;

b. Loss of existing ingress and egress to the Apartment which may render all parking on the Apartment land unusable;

c. Loss of mature trees on Apartment land;

d. Visual obstruction to tenants with views of the canal;

e. Visual intrusion to tenants facing canal by workers constructing the bridges at height and in close proximity to the Apartment units;

f. Significant noise disturbances affecting all residents of the Apartment;

g. Loss of income from tenants leaving or vacancies; and,

h. Professional time spent managing and addressing tenant issues and complaints relating to the Project.

The scale and duration of the Project is extensive and its impact on the Apartment and its tenants cannot be understated. It is unreasonable to expect the tenants of the Apartment to live at the centre of an expansive construction site as proposed by the current design configuration. Alternate solutions must be considered.

From our discussion, it is our understanding that construction of the two bridges on the south side of Hwy 417 is not considered feasible due to concerns of damaging an existing buried watermain in that area. Please indicate on the drawing you provided (Alternative 3 TPA, dated June 6, 2022) the approximate location of the watermain. Was consideration given to constructing one bridge on each side of the highway? This would substantially reduce the size of the required staging and laydown area and could potentially avoid construction over the watermain. Please provide the drawings for Alternatives 1 and 2 as well as any other alternatives that were/are being considered.

At the September 27, 2022 meeting, Mr. Taylor (BTE – Consultant Project Manager) and Mr. Rogers (MTO – Sr. Project Engineer) explained that there would be ongoing opportunities for Paramount Properties to provide comment and input on the Project. Further, Mr. Rogers reiterated the MTO's commitment to maintaining meaningful dialogue with Paramount Properties, a noted stakeholder to the Project.

In this spirit, we ask that you keep our detailed concerns front of mind at the early design stages to minimize impacts on the Apartment and incorporate mitigation strategies wherever possible as the Project proceeds.

We remain available to work with you in delivering the Project in a way that reduces the impacts on the Apartment where possible and provides appropriate compensation where impacts are unavoidable.

Yours very truly,

[redacted]

[redacted]

cc: [redacted]

Comment Sheet 7

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 21, 2022 11:37 AM
To: [redacted]

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

We will provide a response letter once the Project Team has had a chance to review your comments.

I am confirming you have been added to the contact list for future updates.

From: [redacted]
Sent: November 20, 2022 9:19 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: [redacted]
Subject: Comments on downtown bridge replacements

I reviewed the plans for the Metcalfe and other downtown bridge replacements. I don't understand why both queen Elizabeth drive and colonel By drive and corresponding canal pathways have to be closed for the full two years. Pedestrians and bikes really rely on these areas in a downtown setting where there are few safe areas to enjoy the outdoors. These have become even more popular since the pandemic with frequent closures to car traffic to allow more pedestrians and bikes to enjoy the space. Are there any options that have a shorter closure? These should be considered.

I would like to be added to the list for email updates.

Thank you
[redacted]

Comment Sheet 8

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 21, 2022 11:32 AM
To: [redacted] Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: [redacted]
Subject: RE: queensway downtown bridges pic 3 comments

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team.

The detour routes have been presented to the City of Ottawa for comments and will be reviewed during the subsequent detail design phase.

From: [redacted]
Sent: November 17, 2022 12:28 AM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: [redacted]
Subject: queensway downtown bridges pic 3 comments

Considering your proposal includes the multi-use path detours in place for 2 years, has care been taken to ensure they're safe for the wide ranging demographic that uses the paths?

1. eastbound hawthorne is not suitable as a bicycle detour in its current state. you need to work with the city to add a westbound segregated bike lane on hawthorne prior to designating it a detour
2. westbound argyle to southbound elgin is not a safe intersection for bicycles. you need to work with the city to ensure it is. adding signaling may be required.

Comment Sheet 9

From: Rogers, Ken (MTO) <Ken.Rogers@ontario.ca>
Sent: Tuesday, November 1, 2022 7:43 AM
To: [redacted]
Subject: RE: Construction: 417 Bridge Expansion? CRM:001852785

[redacted]

Thank you for your email regarding the future construction of the 417 Highway bridge over the Rideau Canal and Colonel by Drive (Ottawa). The replacement of the Rideau Canal Bridge forms part of the Ontario Ministry of Transportation (MTO) preliminary design and environmental assessment study for the rehabilitation and/or replacement of seven bridges on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street in the City of Ottawa.

Public information centres (PICs) were held for this project in December 2017 and April 2019. There is a third PIC currently scheduled for November 2022. The primary purpose of PIC No.3 is to present the updated recommendations and mitigation for the preliminary design and construction staging of the Rideau Canal Structures on the north side of Highway 417. Public input into this study is valuable and appreciated. On-line PIC materials will be available for public review starting November 15, 2022 and run for a 2 week period at:www.queenswaydowntownbridges.com

Ottawa Queensway Downtown Bridges
Environmental Assessment Study

Queensway Downtown Bridges – Just another WordPress site

Ottawa Queensway Downtown Bridges Environmental Assessment Study Welcome to the website for the Ottawa Queensway (Highway 417) Downtown Bridges Environmental

www.queenswaydowntownbridges.com

. The project team, and environmental assessment process, considers all impacts and tries to mitigate them as much as possible, including impacts to your constituents' apartment complex and laneway. We welcome these comments as part of this upcoming public input process.

Construction is tentatively scheduled to start in 2028, subject to environmental approvals, priorities, and funding. After the Transportation Environmental Study Report (TESR) for this study has received Environmental Assessment (EA) clearance, impacts will be further addressed during the subsequent Detail Design through further public consultation and documented in the Design and Construction Report (DCR) which will be available for public review and comment.

Thank you for your interest in the Ottawa Queensway Downtown Bridges Environmental Assessment Study.

Yours truly,

Comment Sheet 9

Ken Rogers, P.Eng.
Sr. Project Engineer
Ministry of Transportation
Project Delivery East
1355 John Counter Blvd. | Kingston | Ontario | K7L 5A3
Cell: 613-483-1467

From: [redacted]
Sent: October 26, 2022 10:01 AM
To: [redacted]
Subject: Fwd: Construction: 417 Bridge Expansion? CRM:001852785

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hello,

I live at 150 Queen Elizabeth Driveway. A number of tenants mentioned that due to pans to expand the Highway 417 bridge (Ottawa) adjacent to the Pretoria bridge, a parcel of NCC land in front of 150 Queen Elizabeth Dr. (Tiffany Apartments) will be used as a construction site. I inquired with the NCC and they deferred my inquiry to the MTO and your desk.

Can you advise if the above is true and if so, can additional details be provided? E.g. impact to residents, dates, temporary construction sites, staging areas, etc.

Thanks,

[redacted]

Hello [redacted]
Thank you for contacting the National Capital Commission (NCC).
In response to your request, we wish to inform you that inquiries about this project should be directed to the **Ministry of Transport of Ontario**.
You can contact [redacted] at the MTO for more information.
Best regards,
[redacted]
Client Services | Service à la clientèle
National Capital Commission | Commission de la capitale nationale
www.ncc-ccn.gc.ca

---------- Original Message ----------
From: [redacted]
Received: Tue Oct 25 2022 14:22:19 GMT-0400 (Eastern Daylight Time)
To: NCC Info
Subject: Construction: 417 Bridge Expansion?

Hello,

Comment Sheet 9

I live at 150 Queen Elizabeth Driveway. A number of tenants mentioned that due to pans to expand the Queensway bridge adjacent to the Pretoria bridge, a parcel of NCC land in front of the Tiffany Apartments will be used as a construction site.

Can you advise if the above is true and if so, can additional details be provided?

Thanks,

[redacted]

Comment Sheet 10

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 21, 2022 11:36 AM
To: [redacted] Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: RE: Queensway Downtown Bridges EA Study PIC No. 3 Notice - Public

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team.

We will provide a response letter once the Project Team has had a chance to review your comments.

From: [redacted]
Sent: November 20, 2022 8:47 AM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: Queensway Downtown Bridges EA Study PIC No. 3 Notice - Public

Hello,
Feedback re: canal bridge for consideration:
1/. Instead of the laydown section concentrated directly in front of 150 Queen Eliz Dr., could a further stretch of the Queen Eliz Dr roadway be used? i.e. north of the Argyle/Queen Eliz Dr. I live in the impacted apartment building and the high concentration of construction activity for a prolonged period of time will be very stressful, especially when trying to work from home.

2/. Will barriers be constructed at the underside of the bridge where it meets the land to prevent homeless encampments? This has been a problem at the existing bridge in question.

3/. Will the new bridge have a higher noise barrier and signs prohibiting transport trucks using engine braking? Engine braking is currently not enforced in this immediate area.

Regards,

[redacted]

[redacted]

Comment Sheet 11

From: [redacted]
Sent: November 16, 2022 1:25 PM
To: [redacted]
Cc: Steve Taylor; Ken Rogers; Queensway Downtown Bridges
Subject: Re: Queensway Downtown Bridges EA Study PIC No. 3 Notice - Public

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team.

We can review your request internally with MTO.

Darcie

From: [redacted]
Sent: November 16, 2022 11:06 AM
To: [redacted] <[redacted]bteng.ca>
Cc: Steve Taylor <steven.taylor@bteng.ca>; Ken Rogers <ken.rogers@ontario.ca>
Subject: Re: Queensway Downtown Bridges EA Study PIC No. 3 Notice - Public

Good morning [redacted]

Does the project team have any assessment or evaluation report for the Rideau **River** bridge replacement project, notably for impacts on the active lanes of the 417 during construction, as well as neighbourhood impacts for detours during the project? Were there any lessons learned derived from that project not otherwise yet seen by the Downtown Bridges PIC sessions?

Cheers
[redacted]

On Tuesday, November 15, 2022 at 12:07:33 p.m. EST, [redacted] wrote:

Good Afternoon,

Please find attached a copy of the English and French notice for PIC No. 3 for the Queensway Downtown Bridges Environmental Assessment. The PIC is being held online starting November 15, 2022, with exhibits posted to the website. Comments are being requested by November 30, 2022. You can direct your comments to this email address, which is being monitored by BT Engineering Inc.

The project website is:
https://queenswaydowntownbridges.com/en_CA/

Thank you!

Comment Sheet 12

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 30, 2022 12:03 PM
[redacted]

Hi [redacted]

Thanks again for your involvement in this Public Information Centre and the study. Your email has been forwarded to the Project Team and a response letter will be provided.

From: [redacted]
Sent: November 29, 2022 8:12 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>; [redacted]
[redacted]
Subject: Comments on PIC No. 3 for Queensway Downtown Bridges

Good evening [redacted]

Thank you for your earlier reply about the updated environmental assessment and heritage study related to the Rideau Canal bridges complex. We had been looking for similar studies and lessons-learned from the already-completed Rideau RIVER bridge replacement project and hope those will be forthcoming.

At the outset, Old Ottawa East Community Association wants to be on record to say that, while we appreciate your efforts to engage the community over a few week period with a virtual Public Information Session, the outcomes are not going to be as satisfying as those from a live session where both consultants and MTO officials are made available to provide further details, explain the various rationales and answer questions.

There are a larger number of new assumptions made for which prior consultation appears absent, not just at the community level but also with other key partners. It would have been very valuable for us to have heard first-hand what the federal government, including its agencies Parks Canada and the National Capital Commission, had to say about your proposed changes. We have to assume that your own Minister has been fully briefed, but then we might wonder if she had questions herself about municipal and local neighbourhood reactions and comments. These will all be missing until your next steps in the process, and perhaps too late for adjustments, so that makes it difficult for us to formulate our replies to expect to have any real positive outcomes for our community.

Comment Sheet 12

The amended proposals for your series of projects will also have a significant impact on the built infrastructure of the City of Ottawa: so again, we wonder what prior consultation has been held with City officials and elected representatives. For example, we appreciated the collaboration between the NCC and the City in creating a safe fully-signaled cross walk at North Main and Colonel By Drive in advance of the major Greenfield-Hawthorne-Main reconstruction project and hoped for similar synergies with your 417-bridges' efforts.

First blush, we noticed that the O'Connor Street bridge replacement was missing from the scope of this new PIC for the Class EA Process; so, without other evidence, we have to trust that MTO is picking up this element elsewhere. The BTE presentation is silent on this matter.

The single most serious change from previous presentations relates to the replacement methodology, one that appears to still require a large number of contractor lay-down areas both north and south of the Queensway, but now also calls for a complete closure of the Queen Elizabeth Driveway and Colonel By Drive for 90 weeks (virtually two years). Those changes with the implied detours additionally put both greater pedestrian and cyclist traffic into known conflict zones at City intersections in the downtown core on both sides of the canal. It was not made clear why such a long period of continuous closure was required nor what other alternatives were available. If the roadway above can be closed for short periods only during critical construction periods, then why could not the same treatment be made for the community routes below: the appearance is given that 417 traffic impediments are more important to be avoided than disruption of local community and daily neighbourhood movements. The virtual PIC gives no opportunity for us to voice these serious concerns nor to offer options and alternatives. In particular, your proposed plans would push all cyclists and most pedestrian traffic on the east side into a danger area already subject to roadway safety audit recommendations for which your own MTO project appears to offer no short-term or long-term solution.

A further contractor laydown area proposed to be located further east along the Queensway and the Vanier Parkway is in an area designated as TOD - transit-oriented development - and your proposal might preclude active planning for this site in the midst of a housing crisis, at odds with a Provincial Policy Statement. Is was not made clear why such extensive areas were required for these contractor-related functions, nor was it described how many might be used in different bridge replacements and with what phasing over an extended period.

We should further note that your proposal not only removes existing on-street parking in a number of neighbourhoods (with no period defined) but also removes what little parking is available to businesses at 221 Echo and 3-5 Hawthorne (again for an unspecified period) with no mention in your revised proposal of alternatives or options for those businesses.

There is an odd comment in the presentation that requires further explanation at this time, not reflecting exactly what community input was being considered:

> "The Refined Technical Recommendations of PIC 3 reflect community input from PIC No. 2. A Statement of Flexibility will be included in the TESR that although

Comment Sheet 12

> Alternative 3 is preferred, Alternative 2 may be implemented, dependent on further technical information obtained during the detailed design stage."

Certainly the table and charts shows that either alternative comes with a recommendation to close the multi-use pathways. Both alternatives show on the charts that they would take all of the parking space behind the Gray Jay, although in #3 the crane moves north of the 417. It seems that the current restaurant tenant of that corner had no advance consultation of this PIC.

We might expect that either alternative offers the chance in the revised design and build to improve significantly the active transportation routes below the bridges with fully accessible pedestrian and cycling routes on both sides of Colonel By Drive and of the Queen Elizabeth Driveway; but also that the City would then take advantage with cooperation from the NCC to make these active transportation routes both safer and more efficient for the pathways leading up to the Queensway bridges.

All this to say, OOECA would appreciate an opportunity for an in-person public information session as part of the ongoing EA process and to amend page 35 of the presentation to include such a session, and a reporting-back procedure, in advance of the work to complete the Transportation Environmental Study Report (TESR). We would expect that any concerns and recommendations of other interested parties, as noted above, could be shared at that time.

Again, thank you for allowing us to participate in this vital communications and discovery exercise.

Cheers

[redacted]

Comment Sheet 13

-----Original Message-----
From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 28, 2022 9:41 AM
To: [redacted]; Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: Ken Rogers <Ken.Rogers@ontario.ca>; Steve Taylor <steven.taylor@bteng.ca>
Subject: RE: Metcalfe and Rideau Canal bridge replacement.

Hi [redacted]

There is not a sound barrier on the canal bridge, that is a snow barrier.

We will review your comments with the Project Team and provide a response letter.

Thank you for your interest in the study!

-----Original Message-----
From: [redacted]
Sent: November 22, 2022 11:52 AM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: Ken Rogers <Ken.Rogers@ontario.ca>; Steve Taylor <steven.taylor@bteng.ca>
Subject: Re: Metcalfe and Rideau Canal bridge replacement.

Thank you.

As can be seen in PIC No. 3, there is a sound barrier on the bridge that crosses the Canal. Picture Fi2 shows no sound barriers on the south side of the queensway at the Metcalfe St Bridge.

A quick review of the sound abatement study seems to indicate they are recommending NO sound barrier on the south side, as they did not find noise levels above 65dB, while they found those levels on the north side?

This conclusion would seem to defy logic, physics and common sense.
As an engineer, I can't understand how sound pressure measurements could be different for the same road, when measuring the north and south sides.
This could only happen if the sound pressure sampling was conducted using very different methodologies, or shielding the equipment.

Best,
[redacted]

> On Nov 22, 2022, at 10:53 AM, Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca> wrote:

Reply Forward

Comment Sheet 13

QB Queensway Downtown Bridges
To: [redacted]
Tue 11/29/2022 11:30 AM

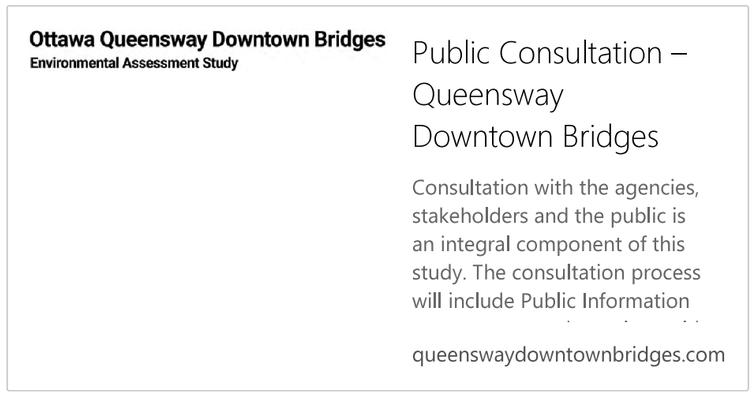
-----Original Message-----
From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 22, 2022 10:54 AM
To: [redacted] Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: Ken Rogers <Ken.Rogers@ontario.ca>; Steve Taylor <steven.taylor@bteng.ca>
Subject: RE: Metcalfe and Rideau Canal bridge replacement.

Hi [redacted],

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

The limits for the new barriers are in the PIC No. 2 exhibits, which can still be found on the website.

https://queenswaydowntownbridges.com/en_CA/public-consultation/



QB Queensway Downtown Bridges
To: [redacted]
Tue 11/22/2022 10:54 AM

[redacted]

Please include this email in the new PIC No. 3 comments log you're working on.

Comment Sheet 13

[redacted]

-----Original Message-----
From: [redacted]
Sent: November 21, 2022 3:22 PM
To: Queensway Downtown Bridges
<queenswaydowntownbridges@bteng.ca>
Subject: Metcalfe and Rideau Canal bridge replacement.

Hello,

As a resident directly south of the Metcalfe to Rideau Canal bridge replacement area, I would like to request that sound barriers be included in the design and construction phases of this project.

The entire Queensway, from East to West has sound barriers installed on both sides, except the downtown span.
We are simply asking for equivalent structures be installed in this section. Nothing more, and nothing less.

Best Regards,
[redacted]

Comment Sheet 14

[redacted]

From: [redacted]
Sent: November 22, 2022 10:37 PM
To: Queensway Downtown Bridges
Cc: [redacted]
Subject: Public consultation comments Queensway Downtown Bridges from resident living on QED

Hello,

I understand that **Queensway Bridge Replacements** are being planned for the bridge replacement over Metcalfe, Elgin, the Rideau Canal, and Main, etc.

Public comment is being invited until November 30, 2022.

My home is located at [redacted]. [redacted]. We have been in this home since 2020. I grew up around the corner on Patterson Avenue for the first 18 years of my life. I walk along QED every day on my walk to and from work. My [redacted] and I walk under the Elgin bridge several times each week to get to [redacted], downtown, etc. I feel like a long time resident of this neighborhood.

I would like to add consideration for the work being completed along the Queensway during this time to include sound barriers. The neighbourhoods on either side of the Queensway have grown substantially (i.e., increase population density) since the bridges' original constructions and there are residents across the street on both sides of the Queensway. In fact, the section of the Queensway from near Bank to after the Rideau Canal is conspicuously without sound barriers on the South side and on the North side in some sections, and seems to be the only section like this for several kilometers compared to other sections of the Queensway in close proximity to residential zones. We have observed that noise barriers have been installed for some sections of the Queensway where reconstruction has taken place and these noise barriers have greatly reduced noise pollution generated by the Queensway located so close to our densely populated residential areas.

There is consistent evidence that noise pollution contributes to markers of cardiovascular disease, and can contribute to cognitive performance and higher stress responses for certain individuals (Münzel et al., 2014). By reducing noise exposure to the neighbourhoods adjacent to the Queensway between Bronson and the Rideau Canal, the City of Ottawa has the ability to promote public health across several high density downtown neighbourhoods.

In light of these empirical and population density considerations, I urge you to provide the same public health protection for the neighbourhoods adjacent to the Bank, Metcalfe, Elgin and **the Rideau Canal sections** of the Queensway (Centre-Town, The Glebe, Hawthorne area and Golden Triangle) that exists for other neighborhoods along the Queensway like Parkdale, Island Park, etc.

Furthermore, I would like to comment on the aesthetic of the bridges for Metcalfe, Elgin and Main. These underpasses or bridges connect vibrant and population dense neighbourhoods to one another. Design and well maintained green space along these bridges helps connect these neighbourhoods seamlessly and can create safer passage. And I add support to the movement towards a decision to avoid demolition of local properties on Echo and Hawthorne, as well as construction that helps avoid underground hydro lines, etc.

Copies here to our regional, provincial and federal elected representatives for their support and information.

Thank you,

Comment Sheet 15

From: [redacted]
Sent: November 21, 2022 8:28 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.[redacted]
[redacted]
Subject: Noise/sound barriers

To whom it may concern

I have read the information provided for consultation on the queensway downtown bridges. Thank you for the opportunity to comment.

In the report section on Effects and Mitigation, the factor “aesthetics” suggests that there is an opportunity to “enhance the aesthetics of the existing bridge sites”. By this statement I am assuming that noise or sound barriers would be part of any enhancements- especially since there is no mention of the addition of these barriers anywhere else in the report that I could find. The mitigation statement that responds to the aesthetics factor does not, however, indicate explicitly that sound barriers will be put in place and makes whatever will be done conditional on the “extent of the work” - which I find difficult to understand.

My concern and comment is related to sound/noise barriers on the sides of the Queensway from Bank Street to east of the Rideau Canal. I was assured by MTO several years ago when work on the Queensway was in the preliminary stages, that these barriers would be put in place when other work was undertaken. It would appear that the work to be completed on the bridges provides the opportunity to install the barriers. Can someone get back to me on whether that is the intention and if not, when the barriers would be installed.

I would like to be included in any future communications regarding the Queesway bridges.

Thank you.

[redacted]

Comment Sheet 16

From: [redacted]
Sent: November 21, 2022 6:02 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: [redacted]
Subject: Queensway Bridge Replacements planned for the bridge replacement over Metcalfe and the Rideau Canal

Hello agent Bteng,

We understand that **Queensway Bridge Replacements** are being planned for the bridge replacement over Metcalfe and the Rideau Cana and that I.

Public comment is being invited until November 30, 2022
We want to request that noise barriers be built and installed when the work is being done.

Our home is located at [redacted], [redacted]
Owing to noise and air pollution, it is often uncomfortable to sit on our front porch or back deck as noise and air quality pollution adversely affects our quality of life in our residential neighbourhood — Our homes are located in the inner city core so vital to maintaining a strong Ottawa for our nation’s capital city!

We have observed that noise barriers have been installed for some sections of the Queensway where reconstruction has taken place and these noise barriers have greatly reduced pollution generated by the Queensway located so close to our precious residential areas—

We urge you to provide the same protection for the **Metcalfe and the Rideau Canal sections** of the Queensway —

Copies here to our regional, provincial and federal elected representatives for their support and information.

Thank you

[redacted]

[redacted] Comment Sheet 17

From: [redacted]
Sent: December 4, 2022 6:26 PM
To: Queensway Downtown Bridges
Subject: Fw: 417 Bridge replacement at Pretoria

From: [redacted]

For PIC comment

BT ENGINEERING
BTE
Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
President
100 Craig Henry Drive, Suite 201
Ottawa, Ont. K2G 5W3
E-Mail: steven.taylor@bteng.ca
Phone: 613-228-4813
FAX: 1-613-280-1305
Toll Free: 1-866-218-1001
[www.bteng.ca]www.bteng.ca

From: [redacted]
Sent: Wednesday, November 30, 2022 7:23 PM
To: [redacted]
Subject: 417 Bridge replacement at Pretoria

Good evening,

I am writing about the bridge replacement and the impact it will have on the residence at 150 Queen Elizabeth Dr. I strongly oppose cutting down the trees in front of the building. I understand the work has to be done, and I have seen the plan online, but I don't know why they cannot extend the use of The Driveway rather than cutting down the trees, especially to make room for parking for the workers.

I am also deeply concerned that we were only given two weeks to respond to the notice of work. The residents would like an in-person meeting to air our concerns and get more information. I would also like to know the agreement that

Comment Sheet 17

was made with Paramount Properties, the owner of the building. It is my understanding that they will be financially compensated for using their location. Will the tenants be compensated?

I look forward to hearing from you.

[redacted]

Comment Sheet 18

[redacted]
Sent: Monday, November 28, 2022 5:32 PM
Subject: Saying NO to the Queensway Bridge Replacement Project

Hello,

I wanted to let you know that I am FIRMLY OPPOSED to any construction of the Queensway Bridge Replacement Project.

The project's negatives greatly outway the positives and will provide terrible pollution, noise pollution, dust, and decreased quality of life to residents like myself and the rest of the community. I've talked with many individuals and we have all come to the same conclusion.

Please, vote against the plan, or stop it, before it makes our apartment building unlivable.

Thanks,
[redacted]
Resident of Tiffany Apartments

Comment Sheet 19

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 21, 2022 11:34 AM
To: [redacted] Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: Ken Rogers <Ken.Rogers@ontario.ca>; Steve Taylor <steven.taylor@bteng.ca>
Subject: RE: Building Bridges North of the Queensway

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team.

From: [redacted]
Sent: November 19, 2022 9:32 AM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: Building Bridges North of the Queensway

To Whom it May Concern,

I read your latest proposal for building two bridges north of the Queensway. It is untenable. Would you like to have major bridges built in what is effectively your front yard? Your new proposal is to “build both bridges to the north of the Queensway,” and you acknowledge that the proposal will result in “greater visual and noise impacts all on the north side.” Your map shows that there will be a “contractor laydown area” in front of my home and a number of others. There is a whole long row of townhouses along Echo Dr. These are not cheap houses and we pay a lot of property tax. The report also indicates that there will be “generation of waste asphalt granulars,” There will also be the “removal of various trees” (large, established ones on National Capital Commission land). There is an acknowledgement that there may be “permanent property impacts.” How could there not be?

Being subjected to two days of constant noise, tall cranes, heavy machinery, waste granulars, concrete dust, fumes, vibrations etc. amounts LITERALLY TO TORTURE, not to mention serious adverse health effects. What about a minimum of two years of this? Is there something I have not understood about this?

Some neighbours at Kings Landing endured a two-year repair of the Canal wall (supposed to be a six-months project which extended to two full years). A big issue for them was fuel power generators running all weekends and cooling pods that nobody was even using over the weekend. They could not sleep from the noise and fumes. And that was just a Canal wall to be repaired, not two bridges to be built.

Water mains are a real concern but removal of a restaurant and a bike shop is less disruptive to many lives than this proposal.

Either figure something else out or expropriate our homes, giving us fair market value.

Sincerely,
[redacted]

Comment Sheet 20

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 28, 2022 9:43 AM
To: [redacted]; Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: Ken Rogers <Ken.Rogers@ontario.ca>; Steve Taylor <steven.taylor@bteng.ca>
Subject: RE: Comment on Queensway bridge replacement plan

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

From: [redacted]
Sent: November 25, 2022 12:51 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: Comment on Queensway bridge replacement plan

I think it is absurd that the option of demolishing two buildings on Hawthorne was rejected in favour of closing a large section of Colonel By Drive for two years (assuming the project runs on schedule).

Most of the buildings on Hawthorne are vacant. There is one restaurant at the corner of Colonel By but the chances of it surviving the construction period are very slim. Any effort to save the buildings is a bad idea. In order to save them, you are inconveniencing high traffic routes, bicycle paths and many residential buildings that you outline in your report.

The MTO should go back to the reasonable plan of buying the buildings on Hawthorne and using them along with Ballantyne Park. That would be the most reasonable and least disruptive option.

[redacted]

Comment Sheet 21

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 28, 2022 9:44 AM
To: [redacted] Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: Ken Rogers <Ken.Rogers@ontario.ca>; Steve Taylor <steven.taylor@bteng.ca>
Subject: RE: Public Information Centre (PIC) No. 3 for the Environmental Assessment Study for the Rehabilitation/ Replacement of Ottawa Queensway Downtown Bridges

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

Your comments have been forwarded to the Project Team and we will provide a response letter.

From: [redacted]
Sent: November 27, 2022 11:44 AM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: Public Information Centre (PIC) No. 3 for the Environmental Assessment Study for the Rehabilitation/ Replacement of Ottawa Queensway Downtown Bridges

To whom it may concern,

I am a resident of the Tiffany Apartments at 150 Queen Elizabeth Drive, and I was shocked to see the information presented in PIC No. 3. The plan has essentially moved all of the construction to outside our front door.

While I am not completely against the plan (and understand the necessity of replacing the 417 bridge over the canal), I do not think that the residents of the Tiffany Apartments have been sufficiently engaged in the process.

Even with the PIC No. 3, the overall implications of the project to the apartment building are unclear. What will the noise levels be, and what mitigation measures will be implemented to ensure that the building will still be liveable while the construction is ongoing outside the front door? How will access into and out of the apartment building be maintained to ensure accessibility and safety (including access by emergency response vehicles)?

Given the close proximity of the proposed construction to the Tiffany Apartments, I think it is incumbent for you to undertake more information sessions with the residents of the building, to hopefully assuage our concerns.

Sincerely,

[redacted]

Comment Sheet 22

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 28, 2022 9:44 AM
To: [redacted] Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: [redacted] Replacements

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

From: [redacted]
Sent: November 27, 2022 2:04 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
[redacted]
Subject: NOISE BARRIERS: Queensway Bridge Replacements

We understand that planning is underway for **Queensway Bridge Replacements** over Metcalfe, Elgin, Colonel By streets and over the Rideau Canal

As public comment is being invited until November 30, 2022, this is by way of a request that noise barriers be installed at these sections of the Queensway as they have for other sections of the Queensway where reconstruction has taken place.

These noise barriers have greatly reduced pollution generated by the Queensway located so close to our precious residential areas and enhanced the quality of life in these neighborhoods.

We urge you to provide the same treatment for our neighborhoods located adjacent to the **Metcalfe and the Rideau Canal sections** of the Queensway.

Thank you for your consideration.

The residents of the duplex at 44 Patterson:

[redacted]

Comment Sheet 23

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 28, 2022 9:45 AM
To: [redacted] Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: RE: Queensway Downtown Bridges Replacement, PIC No. 3

Hi [redacted],

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

Your comments have been forwarded to the Project Team and we will provide a response letter.

From: [redacted]
Sent: November 27, 2022 11:40 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: Queensway Downtown Bridges Replacement, PIC No. 3

To Whom it May Concern,

As a resident of 150 Queen Elizabeth Driveway, I am very concerned about the construction of the bridge replacement that will be right at my front door.
My concerns are the following:

1. Construction noise- this is a noisy building just from the Queensway traffic, and it will get much worse with noisy construction equipment. How long will this construction last? Is there an alternative plan? What will be done about it?

2. Dirt and dust- The Tiffany is a hot building both in the summer and winter. Many residents keep their windows open year round for fresh air. I have never closed mine, as the apartment feels like an oven in the winter. The construction dust will come right through our screens, not to mention we will be exposed to it every time we are outside of our building. This is a health hazard. We will be breathing it in, and it will coat everything in our apartments. I would like to know what will be done about that.

3. Access to the apartment- with construction equipment and vehicles on Argyle, how will we get into the parking lot, and will it be a traffic jam situation every time we drive in and out? There is potential for damage to our vehicles as well. How will driving up Argyle be? Slow and difficult with the road full of construction vehicles? Will we still be able to use the front entrance?

4. The view- many of the units have a beautiful view of the canal. Will we still have this view or will it be blocked by construction equipment? How long will the construction equipment be there?

Thank you for considering my concerns. I look forward to hearing from you.

Sincerely,

[redacted]

Comment Sheet 24

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 28, 2022 3:19 PM
To: [redacted] --- Ottawa Queensway Downtown Bridges Environmental Assessment Study

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

The comments have been forwarded to the Project Team and a response letter will be provided.

Thanks!

From: [redacted] --- Ottawa Queensway Downtown Bridges Environmental Assessment Study

I would ask that receipt of this submission to the public consultation be acknowledged.

Thank you

[redacted]

****

Group Work Project 4170-13-00

November 28, 2022

To Whom it May Concern:

Re: *Group Work Project 4170-13-00* (the "Project") - Response to Ottawa Queensway Downtown Bridges Environmental Assessment Study – Metcalfe Street to Main Street

This letter is being submitted on behalf of [redacted] the [redacted]

Comment Sheet 24

We are responding jointly as we have a number of common concerns relating to the process used to plan for the Project and the anticipated impact of its implementation. These concerns are outlined below:

Use of outdated maps

It is important to note that the maps for your public consultation are outdated and do not document houses located at [redacted]. These domiciles will likely face the greatest impact from this construction should it go forward and yet seem to have not been included in the considerations relating to the Project. We strongly suggest the maps be revised and reviewed to determine any further inaccuracies and with a view to true consideration of impact on all members of the community.

Current proposal not previously disclosed

It is very disappointing to hear of the new proposal for replacing the Queensway bridges at such a late stage. At no time was the current option presented to those of us facing the greatest impact. Had it been, the community may have had a different response to not accepting the second option on the basis of the impact the proposal to take away access to this portion of Colonel By Drive for two years. The impact of this is more fully discussed below. A number of the properties proposed for demolition under earlier construction plans remain vacant and in fact the restaurant located at the corner of Hawthorne and Colonel By Drive has now announced its closure as of December 23, 2022.

Traffic impacts

The proposed closings of both Colonel By Drive at Hawthorne Avenue and Queen Elizabeth Drive at Elgin Street will create incredible congestion in Old Ottawa East. While parts of those two roadways were closed during the pandemic, traffic patterns are returning to normal and the re-routing of traffic onto Main Street and Elgin Street will choke circulation in our neighbourhood.

As seen during pandemic, when Colonel By Drive was closed, traffic was detouring through Sandy Hill, Old Ottawa East and the Glebe. Any traffic studies done during the pandemic are irrelevant given current traffic levels. A closer examination of current levels is required. Both Main Street and Hawthorne Avenue are important routes to hospitals on Smyth Road and many emergency vehicles use these routes many times daily.

Further, the proposal to now close Colonel By Drive for two years makes little to no sense given the many residents of Ottawa who use that roadway to access downtown (an area that has already suffered significant hardship as a result of the pandemic and the "freedom convoy") and at a time when many have returned to the downtown core for work.

Main and Hawthorne intersection

This intersection has been identified by the city in municipal construction plans as requiring major realignment to increase the safety of cyclists, pedestrians and motorists. Therefore, that issue needs to be considered and addressed prior to increasing the volume of traffic. As it stands now, there are considerable delays for left turns, pedestrian crossings and vehicle traffic as the traffic signals all have to run particular cycles to allow the current crossing levels to proceed safely. Due to the proximity of current buildings, there is absolutely no room for additional lanes to be considered. This intersection has a limit and exceeding it will impact safety.

Re-routing of walking/cycling paths

Comment Sheet 24

Many Ottawa residents take advantage of running, cycling and walking paths on both sides of the Rideau Canal. Residents along narrow Echo Drive and Harvey Avenue will have to contend with the street accommodating a fixed bike path reducing the already narrow street, which will create safety issues. The current uninterrupted paths will become jagged and street-based, resulting in more dangerous routes for runners, cyclists and pedestrians. It should be noted that the Ottawa International Marathon as the signature event of the Ottawa Race Weekend makes use of both Colonel By Drive and Queen Elizabeth Drive (after a two year hiatus). The multiple races held throughout the weekend are known for their scenic route are important events for the City of Ottawa.

Loss of on-street parking

The plan for removing on-street parking along Echo Drive and Harvey Street will create challenges for residents as well as any construction workers working on these massive projects. There seems to be no plan to accommodate this parking elsewhere. This definitely will require consideration over the two-year and likely longer time period of the construction.

City of Ottawa planned reconstruction

It is not fully understood how the Project will intersect with the completion of all reconstruction projects already planned by the City of Ottawa in this neighbourhood. At a minimum, the result of the Project and the municipal plans will result in an extended construction environment for this area which length and impact we submit would be an unfair burden on the residents of Old Ottawa East and the thousands of local residents who use Colonel By Drive and Queen Elizabeth Drive as pedestrians, runners, cyclists and motorists.

Replacement bridges

The replacement bridges should more appropriately be built not on high volume roadways but in staging areas previously proposed. Impeding traffic flow in the city's north-south routes is short sighted and fails to take into account the prejudice already suffered by residents and businesses in the downtown core.

Timing

We submit that the anticipated timing of two years for the completion of the Project is a significant under-estimation. Current capital projects in Ottawa take significantly more time than estimated due to current labour market conditions and material availability, which situations are not expected to change significantly over the coming period. These extended time lines need to be considered in light of the work being planned by the municipality for this location.

In closing, we urge the Province to reconsider the most recent proposal on the basis of the considerations outlined and look to revisit the prior recommendation. Again, the replacement bridges should more appropriately be built not on high volume roadways but in staging areas previously proposed.

We would welcome the opportunity to speak directly with the MTO on these plans and have included contact information below for this purpose.

Comment Sheet 24

Sent on behalf of:

[redacted]

Comment Sheet 25

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 28, 2022 4:58 PM
To: [redacted]>; Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: Ken Rogers <Ken.Rogers@ontario.ca>; Steve Taylor <steven.taylor@bteng.ca>
Subject: RE: PIC No. 3 Study, Rideau Canal Bridge Construction, Ottawa 2022

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

The comments have been forwarded to the Project Team and a response letter will be provided.

Thanks!

-----Original Message-----
From: [redacted]
Sent: November 28, 2022 3:58 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: PIC No. 3 Study, Rideau Canal Bridge Construction, Ottawa 2022

To BT Engineering Inc.

Thank you for the opportunity to participate in the public PIC No. 3 study and to submit my input.

I understand that the Queensway Rideau Canal Bridge is nearing the end of its life cycle and that it needs to be rehabilitated or replaced.

However, as a resident at 150 Queen Elizabeth Drive, my neighbours (129 units) and I will be severely impacted by the massive and protracted construction of the 7 bridges on Highway 417. In particular, the Rideau Canal Bridge reconstruction project will be undertaken literally 5 metres outside our front door.

The PIC report indicates that "sites and staging areas will experience some temporary impact during construction" , and " temporary impacts to adjacent residents". I believe that a projected 90 week infrastructure of this magnitude cannot be considered " temporary" in its impact. That is an understatement in the conclusion of your report.

Here are the issues I'm addressing and most concerned with:

1. Integrity of the structure of the building.

Comment Sheet 25

The Tiffany is an iconic and historical gem situated on the Rideau Canal and was designed as Ottawa's first deluxe apartment. The richness of its heritage contributes to the great legacy of Ottawa's architectural history. Prior to its construction, the Wedge-shaped footprint was original underlain with a deep seam of marine clay over the soft ground. Concrete was layered over a 3 acres area to act as a foundation to reinforce the building's frame.
With the construction site adjacent to the building, is it able to withstand the major impacts from bridge construction? How will tenants be reassured there won't be any structural damages to the building?
Are there areas in the building that will more vulnerable to the impacts from being adjacent to the construction site?

2. Construction noise

What exactly can be done to mitigate noise not only during the week but especially if the noise-by-law exemptions are also expected to be reduced on weekends and evenings? Tenants living adjacent to the Queensway already experience high levels of traffic noise day and night. Additional noise from construction will be excessive, impactful and intolerable to endure 7 days a week.

3. Toxic fumes, construction dust, diesel fumes from idling trucks and equipment, waste asphalt, etc.

Inhaling these airborne toxins, which cannot be mitigated under these circumstances, not only is a health hazard but potentially harmful and definitely carcinogenic. How can tenants be expected to tolerate this?

The Tiffany does not have central air conditioning. It will be impossible for tenants to keep their windows closed throughout the 90 weeks construction cycle. Tenants living in apartments facing the canal with an eastern sun exposure commencing at daybreak, experience indoor temperatures that can range up to 30 degrees Celsius by mid noon in spring and summer months.

4. Contamination sites

The report indicates there are 5 known contamination sites, gas mainlines, waste asphalt, granular and concrete earth materials, etc. These are all carcinogenic to human health. How will these toxins be managed and mitigated to reduce adverse impact on residents at the Tiffany and adjacent neighbourhood?

5. Power outages

Will tenants experience loss of electricity and shut down of water supply to the building? Will residents be notified in advance? How frequent will these disruptions occur?

6. Accessibility to the building.

The front laneway to the Tiffany will be maintained for pedestrians but closed to vehicles. How will emergency vehicles have access to the front of the building? Not all tenants, especially those residing on east side and upper floors of building may have access to Argyle Street exit during an emergency. Potentially dangerous to expect evacuation of building during an emergency from the one door on Argyle Avenue.

7. Street Closures

Comment Sheet 25

Closures of The Driveway and Colonel By Drive for 90 weeks will redirect traffic along the Argyle Avenue to Elgin Street corridor thereby increasing additional noise, pollution, traffic conditions to our neighbourhood. How will tenants be able to access ramps to and from the underground garage and the outdoor western parking lot with increased traffic flow?

8. Loss of Mature Trees and Specimens

Removal of existing glorious mature trees along the Queen Elizabeth Drive that have been gracing the canal and the Tiffany for over 1/2 century are irreplaceable. Please do what you can to preserve them.

9. Site Lines, Privacy and the View

I understand that there is the intention to build a 4 story concrete wall in front of the Tiffany to act as a safety buttress to the construction zone. Is this correct?

The installation of the 4 cranes in front of the Tiffany north of Queensway will impede access to the glorious views enjoyed by tenants and create virtual intrusions. Most concerning is the level of privacy tenants are entitled to maintain during construction period. Are we expected to keep blinds and curtains closed 24/7?

10. Outdoor Access and Recreation

Tenants will not have access to the rooftop sundeck, solarium and reading room. Since the building does not have balconies, tenants will also not have access to the grounds at the front and sides around the building nor to the canal, and this will severely limit our ability for any outdoor activities.

11. OC Transpo

Transit operations will disrupt bus services during 2 year roadway closures. Hopefully new bus stops and bus shelters will be readily accessible especially to seniors and those with disabilities.

Thank you in advance for addressing my concerns. Would it be possible to have an approximate timeline when construction is scheduled to commence.

I am also requesting that my name and email be applied to your mail list so that I may be kept apprised of the rehabilitation and/or replacement strategies and timelines of the bridges.

Warmest regards,

[redacted]

Comment Sheet 26

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 29, 2022 8:33 AM
To: [redacted] Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: Ken Rogers <Ken.Rogers@ontario.ca>; Steve Taylor <steven.taylor@bteng.ca>
Subject: RE: Revised Plan-PIC N0. 3 Rideau Canal Bridge Replacement Project

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

From: [redacted]
Sent: November 28, 2022 6:16 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: Revised Plan-PIC N0. 3 Rideau Canal Bridge Replacement Project

I strenuously object to your revised plan for the Rideau Canal Bridge Replacement Project.

In order to save 3 dilapidated buildings on Echo/Main, you're willing to disrupt the lives of dozens of people for 3-5 years living in million $ + homes on the north side of the Queensway along Echo and Harvey. **Unbelievable**. Although your plan calls for the duration of 2 years, history and experience has shown construction timelines never materialize as planned. A case in point, wasn't this project supposed to have started under its original plan a couple of years ago?

I understand the bridges have to be replaced. My issue is that there was a plan in place to build and install the bridges from the south side. The plan has changed because you now want to save the 3 buildings on Echo/Hawthorne. **They're not worth saving!** Insofar as the risk to the watermain, you were prepared to accept the risk before, what's changed? You must have had a risk mitigation plan or you wouldn't have recommended work from the south side in the first place.

My neighbours and I don't want to live in a construction zone for 3-5 years. Your Design Report advises there "will be greater visual and noise impacts on the north side". As you read through the report you pick up on statements that refer to dust, the building of contractor laydown areas, and heavy duty machinery that will operate into the evening and weekends etc. However, there is no mention of the effects all this will have on our daily lives. Nor does it mention the very real possibility of property damage or the very real devaluation of our properties.

Try to visualize for a moment living in a construction zone directly outside your front door. For the next 3-5 years, you'll have excessive dirt caking your windows and rooftop decks; you'll never be able to escape the noise from heavy machinery and generators; you'll live in fear that the ongoing vibration may crack your foundation and interior walls; the view of the canal that you cherished is gone as is the solitude of the neighbourhood.

Comment Sheet 26

Let's not forget the impact on our investment in our homes. These are fairly new homes, less than 25 years old. All worth in the million $ + range with high taxes. All beautiful homes that grace and enhance the Colonel By Driveway. If anyone had plans for selling, they certainly wouldn't be able to sell at their real value, at least not for the next 3-5 years. you're putting their lives on hold.

It's hard for me to understand why you would subject us to all this disruption just to save the 3 buildings on Echo/Harthorne.

Please change the plan.

[redacted]

Comment Sheet 27

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 29, 2022 8:34 AM
To: [redacted] Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: Ken Rogers <Ken.Rogers@ontario.ca>; Steve Taylor <steven.taylor@bteng.ca>
Subject: RE: Bridge

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

From: [redacted]
Sent: November 28, 2022 7:27 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: Bridge

I am writing with regard to the revised plan for the Rideau Canal Bridge Replacement Project. It is clear that the bridge must be replaced. However, I believe that the original plan (to work from the south side) makes more sense and would disrupt the lives (and property) of many fewer people. Also, it would minimize damage to the trees on National Capital Commission land.

[redacted]

Comment Sheet 28

[redacted]

Reply To: [redacted]
E-Mail: [redacted]

28 November 2022

Ministry of Transportation (Ontario)

Delivered via E-mail **queenswaydowntownbridges@bteng.ca**

Dear [redacted]

Re: **Preliminary Design and EA Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown bridges from Metcalfe Street to Main Street**

PIC No. 3

The following is submitted on behalf of, [redacted] the property management company representing the registered owner of the properties known municipally as 221 Echo Drive and 3/5 Hawthorne Avenue, City of Ottawa.

The Technically Preferred Alternative (Alternative 3) proposes the retention of the buildings at 221 Echo Drive and 3/5 Hawthorne Avenue (the "Subject Properties").

The previously recommended course of action was for acquisition and demolition of the Subject Properties.

In April 2019, the Ministry of Transportation produced a notice and then in October 2019 formally announced to the City of Ottawa Transportation Committee that the Subject Properties would be expropriated for the purpose of constructing the adjacent Rideau Canal Queensway replacement bridge.

As a consequence of this public announcement and the Ministry's direct communication with the tenants, the former long term commercial tenant occupying 221 Echo Drive, gave formal written notice to Calfra that it could not exercise its option to renew its lease, but that it in fact was abandoning 221 Echo Drive one (1) year prior to its lease termination date. The tenant's decision was based on the impact the proposed construction /expropriation had on the economic viability of the Subject Properties. Similar actions were undertaken by the tenant occupants of 3/5 Hawthorne. Greek on Wheels reduced its rentable square footage in anticipation of terminating its

[redacted]

[redacted] Proudly continuing [redacted]

long-term tenancy. Similarly, Cyco's did not renew its lease, but re-located its business. These long-term tenants (over 20 years) did not want to move but were forced to relocate due to the uncertainty presented by the MTO.

Although 221 Echo Drive was subsequently leased, the current tenant has now given notice that it will be vacating the premises February 2023 as access to the premises will be significantly restricted due to the proposed Alternative 3.

Alternative 3 is not an improvement but rather ignores: (i) the obvious significant interference with the potential leasing of the Subject Properties by Calfra; and (ii) the business operations of any prospective tenant occupying the Subject Properties.

It is not accurate to maintain that the Alternative 3 will have no direct impact to the Subject Properties. Alternative 3 will result in more than a slight interference. It will interfere significantly with the traditional commercial use of the Subject Properties, particularly 221 Echo Drive, which has operated with a significant outdoor patio service area.

Given the timelines for completion of the proposed construction/replacement, it is unreasonable for the property owner to bear the interference with the traditional use and the loss of the economic viability of the Subject Properties, without proper compensation.

[redacted]

Comment Sheet 29

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 30, 2022 12:00 PM
To: [redacted] Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: Ken Rogers <Ken.Rogers@ontario.ca>; Steve Taylor <steven.taylor@bteng.ca>
Subject: RE: Ottawa Queensway Downtown Bridges ESA (Refinement Alternatives PIC No. 3 as posted on November 15, 2022, regarding Rideau Canal Bridge)

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

Your comments have been forwarded to the Project Team and a response letter will be provided.

From: [redacted]
Sent: November 29, 2022 4:40 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: RE: Ottawa Queensway Downtown Bridges ESA (Refinement Alternatives PIC No. 3 as posted on November 15, 2022, regarding Rideau Canal Bridge)

RE: Ottawa Queensway Downtown Bridges ESA **(Refinement Alternatives PIC No. 3 as posted on November 15, 2022, regarding Rideau Canal Bridge)**

This is a formal objection to Alternative Three as posted on November 15, 2022 under PIC No. 3 that proposes bridge construction on the north side of the Queensway.

The third alternative is an unconscionable proposal that will have significant negative impact on the quality of life for Echo Drive residents while destroying Colonel By Drive and Echo Drive. It will negatively impact home and property values in the affected area. The area under consideration has not been properly measured to reflect the proximity of the staging and construction areas to family living spaces. The contractor laydown area negatively impacts the family homes on Echo Drive in the following ways:

- It would remove all privacy and be highly intrusive for the homes on Echo Drive as the work site will be directly facing and, in some cases, higher than the windows on homes along Echo Drive, our windows predominantly face westerly overlooking the Canal and Colonel By Drive;
- Given the predominance of westerly facing windows, the expanse and height of the staging area will eliminate access to natural light for residents in these homes;
- Homeowners would lose access to windows for lighting and air due to the noise, dust, site lighting, and related worksite debris;
- The bridge sites and staging areas are too close to homes;
- It will decrease home values and the desirability of the area for resale value for years;
- Potential damage to homes and properties due to construction and heavy Equipment;
- It will destroy the greenspaces separating Echo Drive and Colonel By Drive;
- Especially with no foreseeable plans for remediation in the near future.
- Dramatically increased traffic to the immediate area of Main/Hawthorne to Colonel By causing increased risk for residents and emergency vehicles to get in and or out in case of emergency.

The noise, lighting, dust, visual intrusion, and debris is not acceptable given the proximity to homes on Echo Drive. The effects and mitigation summary does not address the serious concerns on the significant and severe negative impact on social environment (noise, loss of privacy, lighting, dust, debris, smells, drug

Comment Sheet 29

use on construction sites, overall health and well-being in family dwellings), risks to groundwater, potential to dig up contaminated property, loss of greenspace and wildlife.

Homeowners on Echo Drive have purchased these properties with appreciation for the National Capital Region and the Rideau Canal, a World UNESCO site, and the expectation that the greenspaces, including trees and bushes are maintained. The greenspace running along Echo Drive, north of the Queensway, is home to at least a dozen different species of birds and serves as a migratory path for Canada Geese. Residents have peacefully cohabitated with rabbits, squirrels and fox who also live in the greenspace that will be razed and will suffer loss of vegetation sources. It will be decades before the greenspace is returned to its current state, negatively impacting property values and overall quality of life.

Additionally, this is Colonel By Drive, the first impression that world leaders see when they come into the nation's capital. As Canada builds its international bona fides on environment, reducing carbon emissions and planting two billion trees, it is unconscionable that government is proposing to destroy healthy trees, in some cases older, healthy trees, and berry producing bushes in the national capital. It is taking away a wind break, shade, food producing bushes and shelter for animals, as well as the obvious benefits of trees in the city.

Another closure of Colonel By Drive will route excessive traffic onto Main Street that can not handle the traffic as efficiently as Colonel By Drive. This was evident in 2021-22 closure of Colonel By to southbound traffic. The traffic on Main Street creates concerns about access to Echo Drive for emergency services, which has not been addressed in the effects and mitigation summary.

The proposal does not indicate where construction crews will be parking, something that has already been an issue with 2021-2022 construction along Colonel By and Echo Drive. The proposal suggests a prohibition on street parking on Harvey/Echo with no mitigation recommendations on where current street parking for residents will be relocated for the duration of construction. The area of Harvey/Echo is heavily reliant on street parking given the design of the community. It also does not address how snow clearing and removal will be maintained, in an already tight street that will lose its snow pile area. This compounds the previously cited concerns on access for emergency services.

We strenuously object to this latest update proposal and, urge MTO to review the more viable options south of the Queensway, where there is already cleared space, vacated premises and the staging area would be further away from homes, resulting in appropriate mitigation impact to a world heritage site and the surrounding community.

Best regards

Comment Sheet 30

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 30, 2022 12:01 PM
To: [redacted]
Subject: RE: Feedback: PIC #3 Group Work Project No. 4170-13-00

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

Your comments have been forwarded to the Project Team and a response letter will be provided.

From: [redacted]
Sent: November 29, 2022 6:01 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: Feedback: PIC #3 Group Work Project No. 4170-13-00

Hello,

I'm currently a tenant at 150 Queen Elizabeth Dr. (Tiffany Apartments). While it's clear that these downtown bridges must be replaced, and I'm glad that heritage buildings on Hawthorne will not have to be knocked down, I certainly have some concerns over the proposed construction staging plan.

As you may know, our building does not have central air conditioning. In the summer months, tenants rely heavily on open windows for air circulation, or window AC units that draw in outside air. I'm not sure if it would be possible to include periodic air quality testing around the staging area? That way we could be assured that the air we are bringing in to our apartments is breathable and safe. I'm not sure what kind of dust/particles/toxins are released during the construction of bridges so close to residential buildings but I'm certain some mitigation measures can be put in place.

In addition, given that the walking trails along the Canal (QED and Col By sides) will be closed for 2 years, I'd like to be assured that the pedestrian detours that are suggested are safe and well maintained. Can pedestrians easily and conveniently cross major roads while on the detour? Will snow removal be increased along these paths accordingly? One of the joys of living where I do is the easy access to these Canal-side trails!

In any case, these comments may be outside the scope of the EA/preliminary design process, but I did not want to miss my chance to submit comments. I may not even be a tenant by the time these projects are finally undertaken, but I felt a duty to the future tenant in my unit!

Thank you for your time,

[redacted]

Comment Sheet 31

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: November 30, 2022 12:03 PM
To: [redacted]
Subject: RE: NO to the Replacement of Ottawa Queensway Downtown Bridges

Hi Nicole,

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

From: [redacted]
Subject: NO to the Replacement of Ottawa Queensway Downtown Bridges

Hello everyone,

I am writing to oppose the replacement project of the Ottawa Queensway Downtown Bridges. The pollution, noise, dust, visual impacts and the fact that the replacement is proposed to take almost 2 full years to complete are some of the reasons this project's negatives far outweigh the positives.

As a resident of The Tiffany Apartments, this proposed project is extremely undesirable and will negatively impact the quality of life of all those who live in the building and nearby. Imagine having the area directly in front of and to the side of your place of residence turned into a construction zone for just shy of two full years. This is extremely unacceptable and will negatively impact residents emotionally, physically and mentally.

I urge you to halt this proposed project.

Sincerely,
[redacted]

[redacted] Comment Sheet 32

From: Queensway Downtown Bridges
Sent: November 30, 2022 12:48 PM
To: [redacted]
Ken Rogers; Steve Taylor
Subject: RE: Queen Elizabeth Drive closure

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

Your comments have been forwarded to the Project Team and a response letter will be provided.

From: [redacted]
Sent: November 30, 2022 12:38 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: Queen Elizabeth Drive closure

To whom it may concern,

My name is [redacted] and I am a resident of The Tiffany at [redacted] Queen Elizabeth Driveway in Ottawa, Ontario. [redacted]

As the current plan stands, it appears as though the construction will require the closure of the front "driveway" of the building. This would mean that we lose our fire lane and should there be a fire or other major emergency, the fire department would not have easy access to respond. We would be unable to keep the Argyle side of the building as a fire lane because the parking that is lost during the driveway closure will be likely to move there instead; as it stands, many people already park there illegally throughout the day and reserving it for a fire lane will not keep them from continuing to do so.

I'm also concerned about the level of dust and debris that will be pushed into the air from the construction. The building does not have central air, so in the summer we are required to open our windows to get any relief from the heat at all. Those on the south and southeast sides of the building in particular will be unable to do so if there is too much dust, and I'm particularly worried about my elderly neighbours who will either have to breathe it in or get extremely hot in their units.

I understand the importance of the bridge replacement, but the plan as it stands now comes too far onto The Tiffany's property for our own health and safety and we'd all certainly appreciate if you considered those when making your plan.

Thank you for your time and consideration,
[redacted]

Sent from Mail for Windows

Comment Sheet 33

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: Monday, December 5, 2022 9:35 AM
To: [redacted]
Subject: RE: Ottawa Queensway Downtown Bridges ESA (Refinement Alternatives PIC No. 3 as posted on November 15, 2022, regarding Rideau Canal Bridge)

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

Your comments have been forwarded to the Project Team and a response letter will be provided.

From: [redacted]
Sent: November 30, 2022 11:32 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: RE: Ottawa Queensway Downtown Bridges ESA (Refinement Alternatives PIC No. 3 as posted on November 15, 2022, regarding Rideau Canal Bridge)

RE: Ottawa Queensway Downtown Bridges ESA **(Refinement Alternatives PIC No. 3 as posted on November 15, 2022, regarding Rideau Canal Bridge)**

This is a formal objection to Alternative Three as posted on November 15, 2022 under PIC No. 3 that proposes bridge construction on the north side of the Queensway.

The third alternative proposal has a significant negative impact on the quality of life for Echo Drive residents facing Colonel By Drive. While we understand the need to replace Highway bridges, there has be a serious consideration and consultation with the residents on the impact to daily lives. These expensive properties on Echo Drive were always a nice sight and residents at their own expenses maintained nice, expensive and tidy looks of these properties which, I am sure, significantly contribute to the image of our country when foreign officials take Colonel By drive to visit the capital and our government officials.

We, residents on Echo Drive, are model citizens of this beautiful country and take every care (and expense) to have appealing look of these properties, our Canal, Echo Drive and Colonel By. That cannot be said for the sorry state of the boarded buildings and crumbling properties on the south side of the highway. As a reason for changing the plan to the north side was cited preservation of 2 local businesses which combined likely pay less in city and personal taxes than a single home on Echo drive. In addition, businesses close at 5pm and go home while residents stay here 24 hours and with the new plan, we're facing not just 7am-5pm construction, but also noise from power generators and lights that will stay on overnight and some proposed overnight work for at least 2 years if everything goes according to the plan. Previous experiences (the only known exception was Flora bridge) show significant delays and extensions to these projects due to its complexities and it's naïve to believe that this will finish earlier or on time. Once you start, you cannot go back and need to finish it. Now is the time to reconsider and take into account residents' voices (and taxes we pay). Dropping a little blue piece of paper (which could have easily been confused for a recycled paper flyer) in my mailbox with a link to the web site which was showing 404-not found for the first few days cannot be considered "hearing the voices" and respecting residents of this beautiful location. I urge you to change that and start working together for a better plan.

Comment Sheet 33

It seems that resident and daily lives impact was not considered in this proposal for at least these reasons:

- **Length of the project and impact on physical and mental health** . We're talking 2+ years. We lived recently through a month of protests and still healing from the noise, large trucks views in front of people's homes and even today, almost a year later, we have news and measuring the health impact of that event. Other than minimizing the Highway closure to 4 days which is an incredible engineering achievement, are there any options to minimize the disruption to residents? This is 2+ years and there will be impact to physical and mental health.
- **Access to our properties during construction**. I don't see evidence that we will have reasonable, unobstructed access to our homes during construction. There seems to be a provision to ban parking on Harvey which leads me to believe that that there are plans to make this narrow street an artery replacing Colonel By and Main St. I am sure you have strong data on traffic volumes on Colonel By and Main. And you should be able to tell what makes sense; however, I did not see evidence in this 36 pages report to prove that (someone who lived here for many years already knows that in winter months it's not rare that a single car blocks the whole Harvey street and it's already problematic without any additional traffic or trucks accessing via Harvey. What's the meaningful plan here?
- **Impact to property values during and after construction due to likely damages from drilling, vibrations and extreme pollution**. Our homes felt the impact and mini earthquakes during LRT construction which is many hundred meters from us. Believing that there will not be any damages to foundations and land movements is rather naïve. Again, what's evidence and expected levels of vibrations?
- **Impact to our power lines, water, sewage and gas supply**. Water was disrupted several times (on one occasion for several days) during the Canal wall rebuild (project was delayed by at least 100% from planned duration) which is several hundred meters from Echo Dr. houses. This is 2 years and 10 meters from us.
- **Emergency, snow clearing and police vehicles access to our houses during construction**. If you close Colonel By, and Echo Drive, and sections of the Main St. (unclear when and how long), the only access to our places is via Harvey/Main St. My understanding is that there's bridge replacement over Main St. as well, so I have not seen the evidence how emergency vehicles will have access to our home in a reasonable time that could be life or death difference for some residents.
- **Permanent loss of wildlife and green space**. This is a UNESCO heritage site and I have not seen the evidence that shows minimizing impact to trees, green spaces we have and maintain at our own expenses for years.
- **Construction site logistics**. What's the plan during these 2 years for trucks access to construction sites (via Harvey?), workers access and parking (on Harvey again?), heating cabins locations during winter months (with likely gas power generators running overnight preventing any sleep?)
- **There seems to be a new 6-storey building going up at 12-24 Hawthorne Ave requiring zoning change due to its height.** I don't want to believe that this is one of the reasons to push this construction to the North of the highway, just to allow for another condo to be built at the same time. Surely, condo building construction should be less important than replacing the bridges and hopefully less important than existing residents already paying high property and personal taxes.

We object to this PIC 3 proposal and urge you to consider less disruptive option by building south of the Highway. I don't have exact counts, but there's less residents impact on the south side of the Highway and likely less taxes impact.

Sincerely,

[redacted]

Comment Sheet 34

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: Monday, December 5, 2022 9:35 AM
To: [redacted] Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: Ken Rogers <Ken.Rogers@ontario.ca>; Steve Taylor <steven.taylor@bteng.ca>
Subject: RE: Comments on your PIC No. 3 Study, Rideau Canal Bridge Construction, Ottawa 2022

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

Your comments have been forwarded to the Project Team and a response letter will be provided.

From: [redacted]
Sent: November 30, 2022 11:37 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: Comments on your PIC No. 3 Study, Rideau Canal Bridge Construction, Ottawa 2022

To BT Engineering Inc.

This is my submission for the public PIC No. 3 Environmental Study, Rideau Canal Bridge, 2022.

Because Queensway Rideau Canal Bridge is nearing the end of its life cycle and it needs to be rehabilitated or replaced.

However, as a resident of 150 Queen Elizabeth Drive for the past 25 years, I am livid and appalled by the way BTE, your company, has opted to present the study online to us and is using Covid-19 for a reason to NOT hold a Public hearing where people could physically stand to look you in the face and voice their concerns in an open and live forum. This live forum would have granted each and every person concerned and living in the areas designated in your study that you are planning to destroy with your vision of mega bridges construction sites to speak up. By not allowing such freedom ion speech you are a sneaky corporate bully.

Having said this I'll continue to express my disgust with your very inconsiderate attitude toward "this residential community in the Golden Triangle" in favour of the "Community of drivers" who need a bridge to make their lives work. What about the people whose lives you are planning to destroy… will we be required to suck it up because we are outnumbered by the "Community of drivers" who needs the bridge and the 417 highway to get to work, function and live???? BTW, I'll acknowledge that we all use and occasionally need this highway.

Why are you giving the/your workers a place to park their cars and trucks? It's a very "in-considerate" gesture that is going to cost us our right to enjoy a peaceful life because you are taking it away to give to other people. How is this acceptable given the need to replace a bridge???

Please know that The Tiffany Apartment Building is the very first apartment building in Ottawa and its residents enjoy living at the 150 Queen Elizabeth Drive. Know that more people would have responded to your "bogus" online attempt to gather our opinions had you conducted a really public hearing and created a website that would allow us to post our comments directly rather than make everything hard and challenging.

Are you going to destroy this neighbourhood with all your drilling that risks disturbing the underwater pipes and high-tension hydro wires? Are you not concerned by the fact that you are going to turn the lives of area residents into hell on earth? It's not fair to pretend that you are not aware of the level of destruction your construction will bring to this pristine area.

Furthermore, you claim this project to be temporary since when is 2 years and counting temporary????

… Well, that's another whole heap of you-know-what because two years and counting is not temporary nor is the fact that you will have to cut down trees that are three to five decades old… Yup, sure you will replace them… Really, so you will be hauling

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60 feet trees that are 30 to 50-year-old trees from other locations to replant here??? I do not think so….

Let's stop pretending that we the proletariat are all stupid, dumb and blind.

After all, we are also taxpayers and now we will have to just let your company which is being paid with BIG taxpayer dollars to walk all over us…

Bottom line is that I'm also going to add my comments to my neighbours' comments because I agree with the points she has raised and the comments she has addressed to you. They are also mine in addition to the ones I have made above….

The PIC report indicates that "sites and staging areas will experience some temporary impact during construction" , and " temporary impacts to adjacent residents". I believe that a projected 90-week infrastructure of this magnitude cannot be considered " temporary" in its impact. That is an understatement in the conclusion of your report.

Here are the issues I'm addressing:

1. Integrity of the structure of the building.

The Tiffany is an iconic and historical gem situated on the Rideau Canal and was designed as Ottawa's first deluxe apartment. The richness of its heritage contributes to the great legacy of Ottawa's architectural history. Prior to its construction, the Wedge-shaped footprint was originally underlain with a deep seam of marine clay over the soft ground. Concrete was layered over a 3 acres area to act as a foundation to reinforce the building's frame.

With the construction site adjacent to the building, is it able to withstand the major impacts of bridge construction? How will tenants be reassured there won't be any structural damage to the building?

Because there areas in the building that are more vulnerable to the impacts of being adjacent to the construction site?

2. Construction noise

How are we supposed to enjoy 24/7 for 365 days a year with Construction crews and workers outside our front doors and windows drilling away for 2 x 365 days minus holidays and a few breaks here and there? Are you going to buy us all noise-reducing headsets to wear for two years and blinders so that we cannot see anything???

What exactly can be done to mitigate noise not only during the week but especially if the noise-by-law exemptions are also expected to be reduced on weekends and evenings? Tenants living adjacent to the Queensway already experience high levels of traffic noise day and night. Additional noise from construction will be excessive, impactful and intolerable to endure 7 days a week.

3. Toxic fumes, construction dust, diesel fumes from idling trucks and equipment, waste asphalt, etc.

Inhaling these airborne toxins, which cannot be mitigated under these circumstances, not only is a health hazard but potentially harmful and definitely carcinogenic. How can tenants be expected to tolerate this? The ground is already contaminated so why not contaminate the tenants lives with more air and noise pollution>

The Tiffany does not have central air conditioning. It will be impossible for tenants to keep their windows closed throughout the 90 weeks construction cycle. Tenants living in apartments facing the canal with an eastern sun exposure commencing at daybreak, experience indoor temperatures that can range up to 30 degrees Celsius by mid-noon in spring and summer months.

4. Contamination sites

The report indicates there are five (5) known contamination sites, gas mainlines, waste asphalt, granular and concrete earth materials, etc. These are all carcinogenic to human health. How will these toxins be managed and mitigated to reduce adverse impact on residents at the Tiffany and adjacent neighbourhood?

5. Power outages

Your report has already identified possible issues with water mains and hurried hydro: Will tenants experience loss of electricity and shut down of water supply to the building? Will residents be notified in advance? How frequently will these disruptions occur?

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6. Fire Hazard and Accessibility to the building.

The front laneway to the Tiffany will be maintained for pedestrians but closed to vehicles. How will emergency vehicles have access to the front of the building? Not all tenants, especially those residing on the east side and upper floors of the building may have access to the Argyle Street exit during an emergency. Potentially dangerous to expect evacuation of the building during an emergency from the one door on Argyle Avenue.
Your work outside our immediate front door will put people's lives at risk… you better go buy those empty buildings on Main Street and forget about this Queen Elizabeth Drive area or use Catherine.

7. Street Closures

Closures of The Queen Elizabeth Driveway and Colonel By Drive for 90 weeks will redirect traffic along the Argyle Avenue to Elgin Street corridor thereby increasing additional noise, pollution, and traffic conditions in our neighbourhood. How will tenants be able to access ramps to and from the underground garage and the outdoor western parking lot with the increased traffic flow? Impact on vehicles traversing the construction zone?

8. **Loss of Mature Trees and Specimens**

Removal of existing glorious mature trees along the Queen Elizabeth Drive that have been gracing the canal and t**he Tiffany for over 1/2 century are irreplaceable**. **These trees are like people they need to be cared for and preserved**.

9. Site Lines, Privacy and the View

I understand that there is the intention to build a 4 story concrete wall in front of the Tiffany to act as a safety buttress to the construction zone. Is this info correct?

The installation of the 4 cranes in front of the Tiffany north of Queensway will impede access to the glorious views enjoyed by tenants and create virtual intrusions. **Most concerning is the level of privacy tenants are entitled to maintain during the construction period. Are we expected to keep blinds and curtains closed 24/7?**

10. Outdoor Access and Recreation

Tenants will not have access to the rooftop sundeck, solarium and reading room. Since the building does not have balconies, tenants will also not have access to the grounds at the front and sides of the building nor to the Rideau Canal, and this will severely limit our ability for any outdoor activities. YOU are making plans to destroy our unique urban community in the Golden Triangle regarded as one of the loveliest neighbourhoods in the city of Ottawa will be severely impacted.

11. OC Transpo

Transit operations will disrupt bus services during 2-year roadway closures. Will bus stops and bus shelters be readily accessible, especially to seniors and those with disabilities?

In closing, it should be possible for BTE to revisit this dreadful plan with another stay rather than sign off on some poorly accepted plan…to displace residence by destroying a community or neighbour in the golden triangle to benefit the community of drivers" because there is need for a new bridge. Certainly, the NCC should give up parkland on the south side to Pretoria Bridge to create a bridge for everyone not expect tax-paying citizens to foot the emotional, physical and mental distress bill for this bridge.

I am also requesting that my name and email, [redacted], be applied to your mailing list so that I may be kept informed of your future plans to: "destroy our environment to build bridges, how Ironic is your plan?"

Best regards,

[redacted]

Comment Sheet 35

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: December 7, 2022 3:11 PM
To: [redacted] Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: RE: Gray Jay Hospitality

Hi [redacted]

Thank you for letting the team know! Your comment will be recorded in the Environmental Assessment.

From: [redacted]
Sent: December 5, 2022 4:19 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Subject: Gray Jay Hospitality

Gray Jay Hospitality

Notice that this restaurant is closing. This fact can again facilitate building the bridges in that area rather than on Colonel By.

[redacted]

Comment Sheet 36

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: Monday, December 5, 2022 9:35 AM
To: [redacted] Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Cc: [redacted]

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

Your comments have been forwarded to the Project Team and a response letter will be provided.

From: [redacted]
Sent: November 30, 2022 5:53 PM
To: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
[redacted]
Subject: Noise / sound barriers - Centretown Bridge Reconstruction Project

To whom it may concern
We have read the information provided for consultation on the reconstruction of the Queensway downtown bridges. Thank you for an opportunity to comment.
Our concern is related to **sound/noise barriers along the Queensway from Bank Street to east of the Rideau Canal**. The MTO advised several years ago that work on the Queensway was in the preliminary stages, and that these barriers would be installed when other work was undertaken. It would appear that the proposed bridge work would provide an opportunity to install these much – needed barriers.
We are specifically asking - ***is there a plan to install sound barriers along the south side of the Qway from Bank to the Rideau River as part of this multi-bridge repair project****?* Can someone please advise if this is the intention ?
Also, can you please include us in any future communications regarding the Queensway bridges.
Thank you
[redacted]

Comment Sheet 37

From: Queensway Downtown Bridges <queenswaydowntownbridges@bteng.ca>
Sent: Monday, December 5, 2022 9:34 AM
To: [redacted]
Subject: RE: Queensway noise barriers pls

Hi [redacted]

Thank you for the comments provided for the Public Information Centre for the Queensway Downtown Bridges EA Study. It will become part of the Record of Consultation and be reviewed by the Study Team. This feedback will be included in the Environmental Assessment.

Your comments have been forwarded to the Project Team and a response letter will be provided.

From: [redacted]
Subject: Queensway noise barriers pls

We understand that planning is underway for **Queensway Bridge Replacements** over Metcalfe, Elgin, Colonel By streets and over the Rideau Canal

As public comment is being invited until November 30, 2022, this is by way of a request that noise barriers be installed at these sections of the Queensway as they have for other sections of the Queensway where reconstruction has taken place.

These noise barriers have greatly reduced pollution generated by the Queensway located so close to our precious residential areas and enhanced the quality of life in these neighborhoods.

We urge you to provide the same treatment for our neighborhoods located adjacent to the **Metcalfe and the Rideau Canal sections** of the Queensway.

Thank you for your consideration.

The residents of [redacted]

Appendix A-5

Select Correspondence

BT ENGINEERING

From: susan.millar@pc.gc.ca [mailto:susan.millar@pc.gc.ca]
Sent: July 5, 2017 11:27 AM
To: Steve Taylor
Subject: Re: GWP 0417-13-00 Queensway Downtown Bridges EA Metcalfe to Main Street: FAC Meeting No. 1 Notes

Hi Steve,

I hope you had a good Canada Day. I can confirm that 64.20m is the upper controlled water elevation in the canal at this location, taking into account higher water levels we have been experiencing this spring. It is this level which can be used to apply the 6.7m vertical clearance for bridge construction.
We are making progress on discussion of restoring the canal walls at this location and will follow-up in the coming weeks on this and related aspects for bridge design.

Susan Millar, BComm, MSc
Planner / Planificatrice
Ontario Waterways/Voies navigables de l'Ontario

Parks Canada / Parcs Canada
Rideau Canal Office / Canal-Rideau
34 Beckwith St. S. / 34, rue Beckwith Sud Smiths Falls, ON K7A 2A8

susan.millar@pc.gc.ca
Telephone / Téléphone 613-283-7199 ext 242 Facsimile / Télécopieur 613-283-0677
www.parkscanada.gc.ca | www.parcscanada.gc.ca

From: "Steve Taylor" <steven.taylor@bteng.ca>
To: "Carole Lumsdon" <carole.lumsdon@pwgsc.gc.ca>, "Chris Meek" <christopher.meek@ncc-ccn.ca>, "Dave Lindensmith" <Dave.Lindensmith@ontario.ca>, "Frank Vanderlaan \(MTO\)" <Frank.Vanderlaan@ontario.ca>, "Harry Szeto" <Harry.szeto@pc.gc.ca>, "Heather Thomson" <heather.thomson@ncc-ccn.ca>, "Jason Hutchison" <jason.hutchison@ncc-ccn.ca>, "Jewel Cunningham" <jewel.cunningham@pc.gc.ca>, "Kevin Ogilvie" <Kevin.Ogilvie@ontario.ca>, "Mark Brandt" <mtb@mtbarch.com>, "Sandra Candow" <sandra.candow@ncc-ccn.ca>, "Stephen Brown" <sdbrown@brownandcompany.ca>, <susan.millar@pc.gc.ca>, "Darcie Dillon" <darcie.dillon@bteng.ca>
Date: 13/06/2017 09:15 PM
Subject: GWP 0417-13-00 Queensway Downtown Bridges EA Metcalfe to Main Street : FAC Meeting No. 1 Notes
[attachment "Attachment 3 Study Commencement Notice.pdf" deleted by Susan Millar/NOTES/PC/CA] [attachment "Attachment 2 Canal Walls.pdf" deleted by Susan Millar/NOTES/PC/CA] [attachment "Attachment 1 Presentation.pdf" deleted by Susan Millar/NOTES/PC/CA] [attachment "GWP4170-13-00 FAC Meeting 1 Jun 7 17 QC.PDF" deleted by Susan Millar/NOTES/PC/CA]

Attached please find the notes of our recent meeting FAC Meeting No.1. This includes a copy of the last construction of the canal walls drawings as requested at the meeting.

We look forward to our next meeting in September and let me know if you have any comments.

Steve

Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
President
100 Craig Henry Drive, Suite 201
Ottawa, Ont. K2G 5W3
E-Mail: steven.taylor@bteng.ca
Phone: 613-228-4813
FAX: 1-613-280-1305
Toll Free: 1-855-228-4813
www.bteng.ca

From: Kellie Iacovitti [mailto:kellie.iacovitti@rvca.ca]
Sent: July 13, 2017 5:26 PM
To: steven.taylor@bteng.ca
Subject: FW: GWP4170-13-00 Queensway Downtown Bridges Notice of Study Commencement

Good Afternoon Steven,

Thank you for this notification.

Please be informed that RVCA has no regulatory jurisdiction at the four sites indicated and no further involvement is required.

You may wish to verify review requirements for the portion over the canal with Parks Canada Rideau Canal.

Respectfully, Kellie

Kellie Jennifer Iacovitti,
Records Administrator for
Planning & Regulations Departments
Rideau Valley Conservation Authority/LRC
Box 599, 3889 Rideau Valley Drive, North
Manotick, ON K4M 1A5
613-692-3571 **ext. 1128**
Fax: 613-692-0831
E-MAIL: kellie.iacovitti@rvca.ca
WEBSITE: www.rvca.ca

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From: Steve Taylor <steven.taylor@bteng.ca>
Date: Wednesday, July 12, 2017 at 2:36 PM
To: "Janet.Townson@aadnc-aandc.gc.ca" <Janet.Townson@aadnc-aandc.gc.ca>, "'Marc-André.Millaire@aadnc-aandc.gc.ca'", "InfoPubs@aadnc-aandc.gc.ca" <InfoPubs@aadnc-aandc.gc.ca>, "info@ceaa-acee.gc.ca" <info@ceaa-acee.gc.ca>, "christopher.meek@ncc-ccn.ca" <christopher.meek@ncc-ccn.ca>, "carole.lumsdon@tpsgc-pwgsc.gc.ca" <carole.lumsdon@tpsgc-pwgsc.gc.ca>, "NPPHQ-PPNAC@tc.gc.ca" <NPPHQ-PPNAC@tc.gc.ca>, "gary.mctavish@ontario.ca" <gary.mctavish@ontario.ca>, "steve.burns@ontario.ca" <steve.burns@ontario.ca>, "Blair.Ostrom@ontario.ca" <Blair.Ostrom@ontario.ca>, "dan.l.thompson@ontario.ca" <dan.l.thompson@ontario.ca>, "david.arnott@ontario.ca" <david.arnott@ontario.ca>, "Kate.Oxley@ontario.ca" <Kate.Oxley@ontario.ca>, "rosemary.theriault@ottawa.ca" <rosemary.theriault@ottawa.ca>, Diane Downey <diane.downey@rvca.ca>, "Mathieu.Fleury@ottawa.ca" <Mathieu.Fleury@ottawa.ca>, "Peter.Clark@ottawa.ca" <Peter.Clark@ottawa.ca>, "Catheerine.McKenney@ottawa.ca" <Catheerine.McKenney@ottawa.ca>, "Riley.Brockington@ottawa.ca" <Riley.Brockington@ottawa.ca>, "David.Chernushenko@ottawa.ca" <David.Chernushenko@ottawa.ca>, "Peter.Hume@ottawa.ca" <Peter.Hume@ottawa.ca>, "Douglas.Rathwell@ottawa.ca" <Douglas.Rathwell@ottawa.ca>,

"Birgitte.Alting-Mees@ottawa.ca" <Birgitte.Alting-Mees@ottawa.ca>, "Carol.Hall@ottawa.ca" <Carol.Hall@ottawa.ca>, "Renjit.Varghese@ottawa.ca" <Renjit.Varghese@ottawa.ca>, "Tim.Holland@ottawa.ca" <Tim.Holland@ottawa.ca>, "Kim.Millar@ottawa.ca" <Kim.Millar@ottawa.ca>, "FireRequests@ottawa.ca" <FireRequests@ottawa.ca>, "Richard.Holder@ottawa.ca" <Richard.Holder@ottawa.ca>, "paramedicpublicrelations@ottawa.ca" <paramedicpublicrelations@ottawa.ca>, "BordeleauC@ottawapolice.ca" <BordeleauC@ottawapolice.ca>, "brian.steen@ottawa.ca" <brian.steen@ottawa.ca>, "genya.stefanoff@ottawa.ca" <genya.stefanoff@ottawa.ca>
Cc: Dave Lindensmith <Dave.Lindensmith@ontario.ca>, Darcie Dillon <darcie.dillon@bteng.ca>, Kevin Ogilvie <Kevin.Ogilvie@ontario.ca>, Gord Bell <gord.bell@bteng.ca>
Subject: GWP4170-13-00 Queensway Downtown Bridges Notice of Study Commencement

Good afternoon,

The Ontario Ministry of Transportation (MTO) has initiated a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (at four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. Attached is a letter notifying you of the study commencement.

Should you wish to be removed from our study contact list, please reply.

Steve Taylor
Project Manager

BT ENGINEERING
BTE
Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
President
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www.bteng.ca

Ottawa

August 04, 2017

Steve Taylor, P.Eng.
BT Engineering
100 Craig Henry Drive, Suite 201
Ottawa, Ontario
K2G 5W3

Dear Mr. Taylor:

Subject: MTO Replacement of Queensway Downtown Bridges, Metcalfe Street to Main Street

In response to your letter dated July 12, 2017, regarding the Ontario Ministry of Transportation (MTO) – Commencement of Environmental Assessment Study for the Rehabilitation/Replacement of Ottawa Queensway Downtown Bridges, Metcalfe Street to Main Street, the following information is provided by the City of Ottawa's Transportation Services Department.

Metcalfe, Elgin and Main Streets have been identified as important segments on the ultimate cycling and pedestrian networks as defined in the Ottawa Cycling and Pedestrian Plans. Therefore, we request that the MTO bridge rehabilitations/replacements be designed to allow for the future implementation of cycling and pedestrian facilities along these streets. Adherence to policies and the protection of future corridors must be incorporated into the design of any capital project. In this particular case, both the Province and the City have numerous policies and programs to promote active transportation modes.

To reduce greenhouse gas emissions, the Province of Ontario has a Climate Change Action Plan (2016) which puts focus on measures supporting active transportation. One of the most relevant action items relates to revising provincial road and highway standards to require commuter cycling infrastructure be considered for all road and highway construction projects where it is safe and feasible (Section 3.1.4).

Furthermore, #CycleON (Ontario's Cycling Strategy), highlights the need to identify a province-wide network of cycling routes that will help locate areas of provincial infrastructure that should accommodate cycling (item 2.2), incorporate design features for cyclist and pedestrian facilities and safety improvements on provincial road and bridge projects (item 2.3), and work with municipalities to identify and address any

provincial practices or infrastructure that are barriers for local cycling networks (item 2.4).

Metcalfe Street, between Isabella and Catherine Streets, is classified as an arterial road and is designated as a truck route and a spine cycling route. The Average Annual Daily Total (AADT) motor vehicle volume is ~12,700 (measured at the intersection of Argyle West, 2017). The curb to curb width beneath the MTO Highway presently accommodates 3 skewed lanes (~4.4 m wide) of northbound motor vehicles with no on-street parking. The City Council approved policy for Metcalfe Street targets a minimum pedestrian level of service (PLoS) of C, and a minimum bicycle level of service (BLoS) of C. To meet sidewalk policy and LOS targets, a sidewalk width of 2 metres on each side of the street and a dedicated cycling facility are required.

In terms of the cycling facility type, raised cycle tracks are the appropriate facility for all three underpasses. They increase the safety and comfort of the people using them, which is especially important in areas where changes in luminance (entering and exiting a tunnel) and there are high volumes of turning vehicles.

Elgin Street, between Isabella and Catherine Streets, is classified as an Arterial Traditional Mainstreet and is designated as a truck route and local cycling route. It is also within 300 m of a school (Immaculata High School). The Average Annual Daily Total (AADT) motor vehicle volume is ~11,100 (measured at intersection of Catherine Street, 2017). The curb to curb width beneath the MTO Highway presently accommodates 4 lanes (~3.5 m wide) of motor vehicles – 2 lanes northbound and 2 lanes southbound, with a centre median (~1.5 m wide) and no on-street parking. The City Council approved policy for this road targets a minimum pedestrian level of service (PLoS) of A, and a minimum bicycle level of service (BLoS) of B. A sidewalk width of two metres, plus a boulevard width of 0.5 metres is required to achieve the minimum PLoS. A dedicated cycling facility is required to achieve the minimum BLoS.

Although the recently approved design for the Elgin Street corridor between Laurier Avenue and Queen Elizabeth Drive does not include a separate cycling facility, it is designed for a 30 km/hr target speed, which is appropriate for shared use. The section south of Preston has higher operating speed which is not supportive of the shared use concept. Furthermore, public consultation noted a recurring comment, namely that, “enhanced cycling infrastructure is needed on Elgin Street, south of Gladstone Avenue”. Our recommendation is that the bridge span should be widened enough to accommodate 4 lanes of vehicle lanes, 0.5 metre boulevards, 2 metre sidewalks and 2 metre cycling facility in both directions.

Main Street, between Harvey Street and Hawthorne Avenue, is classified as a Traditional Mainstreet and is designated as a truck route and a spine cycling route. It is also within 300 m of a school (Immaculata High School). The Average Annual Daily

Total (AADT) motor vehicle volume is ~11,600 (measured at intersection of Greenfield, 2017). The curb to curb width beneath the MTO Highway presently accommodates 3 lanes (~3.5 m wide) of north and southbound motor vehicles with no on-street parking. The City Council approved policy for this road targets a minimum PLoS of A, and a minimum BLoS of C. A sidewalk width of 2 metres, plus a minimum boulevard width of 0.5 metres is required to achieve the minimum PLoS. A dedicated cycling facility is required to achieve the minimum BLoS. Main Street between the Rideau River and Harvey Street was recently reconstructed. The road cross section was modified to reduce the number of through lanes, widen sidewalks and add cycling facilities. For most of the road length, cycle tracks were included in the design. The section under the bridge has also cycle tracks but they are substandard. It would be beneficial to widen the span of the bridge structure to provide sufficient width for 0.5 metre boulevards, 2 metre cycle tracks and 2 metre sidewalks.

In order to ensure the reliability of the ongoing OC Transpo bus detours associated with Stage 1 LRT construction, coordination with OC Transpo staff will be required to ensure construction detours do not impact bus operations, particularly during Confederation Line construction and detouring.

Finally, we would like to highlight the Province’s recent contributions to building a more sustainable Ottawa through the extension of the Nicholas Street bridge over Greenfield Drive, the Mackenzie Avenue cycle tracks, the Fifth-Clegg pedestrian/cycling bridge, and the enhancements of the Hwy 417 bridge at the Trillium LRT line. We trust that the Hwy 417 bridge rehabilitation/replacement program, a “once in a life time opportunity”, will be used to better connect communities on the two different sides of the freeway.

Yours truly,

Carol Franklin

Carol Franklin, P.Eng.
Transportation Engineering Services Branch
Transportation Planning
Transportation Services Department

c.c. Vivi Chi, Manager, Transportation Planning and Engineering
Colin Simpson, Program Manager, Transportation Engineering Services
Heidi Cousineau, Program Manager, Area Traffic Management
Kornel Mucsi, Program Manager, Transportation Policy & Networks
Frank McKinney, Program Manager, Transportation Env. Assessments
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Visitez-nous : Ottawa.ca/urbanisme

Rideau Canal
National Historic Site of Canada
34 Beckwith Street South
Smiths Falls, ON K7A 2A8

August 10, 2017

Steven Taylor, President
BT Engineering
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K2G 5W3
Email: steven.taylor@bteng.ca

Subject: Parks Canada Guidance for the Reconstruction of the Highway 417 (Queensway) Bridge over the Rideau Canal, Ottawa

Dear Mr. Taylor,

On June 6, 2017, Parks Canada attended the first Federal Advisory Committee (FAC) meeting of the Ministry of Transportation (MTO) Class Environmental Assessment Study for the replacement of the Highway 417 (Queensway) bridge over the Rideau Canal. At this meeting, the FAC was introduced to the project scope, general timelines, and 5 preliminary bridge design options.

Parks Canada's interest in the replacement of the Highway 417 bridge relates to the Rideau Canal National Historic Site and UNESCO World Heritage Site, over which the bridge will cross. The Rideau Canal National Historic Site of Canada is owned and administered by Parks Canada with the mandate to preserve the cultural, natural and scenic values of the site so that all Canadians can enjoy this legacy into the future.

It is also a UNESCO World Heritage Site. It is Parks Canada's responsibility under the World Heritage Convention to manage the site to ensure the protection of its Outstanding Universal Values. All parties have a responsibility to ensure the stewardship and conservation of this internationally recognized waterway. Our comments and guidance are intended to support the collaborative planning and design process in order to achieve these objectives.

Parks Canada bases its decision-making concerning cultural resources on the *Standards and Guidelines for the Conservation of Historic Places in Canada* and with the principles and practice of Parks Canada's *Cultural Resource Management Policy*.

Bridge Design and Construction

As discussed at the FAC meeting, bridge construction cannot impede navigation of the canal during the operating season, which extends from the Victoria Day long weekend to Thanksgiving, nor should it impact the National Capital Commission's Skateway operations during the winter months. We remind you that no in-water works are permitted during the fish spawning season from March 15 – July 1 of any given year.

The current Highway 417 bridge features two sets of six piers in the navigation channel. For the new bridge design, Parks Canada preference is a bridge structure with no piers in the water. However, the Agency understands that the project area is highly constrained and bridge design must be effectively integrated with the 400-series highway. Appreciating this engineering challenge and the fact that this section of the canal is a man-made, dug channel, Parks Canada recognizes that the replacement of bridge piers in the water may provide for the overall optimal bridge design and structure.

In order to ensure safe navigation, a minimum 6.7m (22 feet) vertical clearance is required above the upper controlled water elevation limit (+/- 64.20m). This clearance must extend a minimum of 25m (82 feet) in width to provide for the safe passage of boats. This navigation clearance is achieved by the present Highway 417 bridge.

Navigational lighting need not be provided along the canal; this is consistent along the entire length of the waterway.

In looking at bridge structure and design along the canal in the City of Ottawa and the history of bridges over the canal, extending back to the sappers' bridges, erected to link Upper and Lower Town, it is felt that a traditional, below-deck structure best respects the cultural heritage value of the canal and minimizes the visual impact of the bridge in this urban environment. A bridge design which provides for a discrete, visually light, and minimalistic structure is preferred, allowing the multi-lane highway to be as subtle and quiet on the landscape as is reasonably possible. Such a design also serves to maintain the visual focus, public appreciation and visitor experience of the canal, its adjacent scenic pathways, the Pretoria Bridge to the immediate south, and the adjacent residential communities.

Parks Canada also has an interest in the visibility of the canal as experienced by vehicles passing over the bridge. Parks Canada encourages the project team to explore design options for the bridges railings and above-deck lighting to enhance the transportation experience and connect users with their immediate surroundings. At present, it is a challenge to compute that one is passing over a waterway while traveling on Highway 417 due to the current above-deck design.

Canal Realignment Consideration

Two of the five preliminary bridge design options presented at the FAC meeting involve the realignment of the canal walls at this location. It is understood that when the 1965 Highway 417 bridge was constructed, the navigation channel was widened, with two sets of six piers constructed in the water in the approximate alignment of the previous canal walls.

At the FAC meeting, Parks Canada was asked to consider the potential realignment of the canal walls to their pre-1963 Highway 417 bridge alignment, essentially reversing the realignment that was undertaken in 1965, to support the design evolution of the two preliminary bridge design options.

Parks Canada has reviewed the request for consideration of realigning the canal walls to support the design evolution of two of the five preliminary bridge design options. It is appreciated that transportation on the canal has evolved since the canal's construction, and that this evolution has had an impact on the canal itself, altering it over time. From a review of historical, cartographic and photographic information, and the 1965 Highway 417 bridge construction drawings, it is understood that the Rideau Canal was narrowed at this location in 1882 to support the construction of bridge abutments for the railway bridge, which crossed the canal at this location. With the 1965 realignment of the canal walls for the Highway 417 bridge, which replaced the railway bridge, the additional material placed in the canal for the railway bridge was removed. Thus, the canal cut as it appears today is largely consistent with the original canal cut when the canal was completed in 1832.

Recognition and respect for the evolution of the canal is supported by the Statement of Outstanding Universal Value of the Rideau Canal as a UNESCO World Heritage Site. Specifically, the canal's inscription on the World Heritage List recognizes that the inscribed property "includes all the main elements of the original canal together with relevant later changes in the shape of watercourses, dams, bridges, fortifications, lock stations and related archaeological resources. The original plan of the canal, as well as the form of the channels, has remained intact." [Decisions Report (Christchurch, 2007): WHC-07/31.COM/24, pp.164-5: Decision 31 COM 8B.35]. As such, realignment of the canal walls in support of a new Highway 417 bridge at this location is not supported by Parks Canada.

Permits

Bridge construction will be subject to an in-water work permit pursuant to the Historic Canals Regulation under the Department of Transport Act, and a Historic Canals Authorization, which will outline the conditions of the authorization, and which will be taken from the approved mitigation measures contained in the approved Environmental Assessment Study.

To support the completion of the Environmental Assessment Study, we request that a Stage 1 archaeological assessment is undertaken, as well as an underwater archaeological assessment and fieldwork to confirm the presence of or define the limits of archaeological resources. This in-water work can be done when the canal is partly dewatered following the closing of navigation in the fall. A Research and Collections permit will be required by the respective consulting firms to undertake this work.

We note that appropriate signage and buoys will need to be secured through Transport Canada to ensure safe navigation during construction. Placement of additional

Parks Canada Parcs Canada

signage/buoys will be the responsibility of the contractor. Approval will rest with Parks Canada.

Coordination with Federal Infrastructure Investment Projects

Parks Canada has a minor repair project on the canal walls planned for that specific area (date to be determined) but no major canal wall reconstruction projects are proposed in the immediate vicinity of this project. In reviewing the proposed detour routes to be in place during bridge reconstruction, at this time no conflicts are anticipated with Parks Canada's program of work.

Parks Canada will continue to work closely with the National Capital Commission as members of the Federal Advisory Committee in support of the MTO Class Environmental Assessment Study. We look forward to continuing to work with the Ministry of Transportation and BT Engineering on this project.

We hope that this letter clarifies and addresses the questions and concerns raised at the first FAC meeting. Thank you very much for your invitation to Parks Canada to provide input into this project. I hope this letter will be helpful to you and your team and we look forward to working with you as the EA study progresses to achieve a well-integrated and high quality design.

Yours sincerely,

John Festarini,
Associate Director,
Ontario Waterways

CC: Dave Lindensmith, Ministry of Transportation
Chris Meek, National Capital Commission

Ministry of Natural Resources and Forestry

Kemptville District

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Ministère des Richesses naturelles et des Forêts

District de Kemptville

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December 8, 2017

SUBJECT: UPDATED IN-WATER WORK TIMING GUIDELINES IN KEMPTVILLE DISTRICT

To: all interested parties

The Ministry of Natural Resources and Forestry Kemptville District Office has recently reviewed and updated its In-water Work Timing Guidelines. These guidelines are intended to provide the timing for in-water work related to an activity, in order to protect fish during spawning and other critical life stages. Timing guidelines are based on species* presence and are therefore subject to change if new information becomes available.

Timing Guidelines in Kemptville District are:

Waterbody (and applicable geography or Fisheries Management Zone)	Timing Guidelines (no in-water works)
○ St. Lawrence River (FMZ 20)	March 15 – July 15 (Spring spawning species)
○ Ottawa River – Lac Des Chats (FMZ 12)	October 1 to July 15 (Spring and fall spawning species, including Lake Trout and Lake Whitefish)
○ Ottawa River – Lac Deschenes (FMZ 12)	October 15 to July 15 (Spring and fall spawning species, including Cisco)
○ Ottawa River – Lac Dollard des Ormeaux (FMZ 12)	January 1 to July 15 (Winter and spring spawning species, including Burbot)
○ Big Rideau Lake (South Burgess and South Elmsley Twps) ○ Charleston Lake (Lansdowne and Escott Twps) ○ Crow Lake (South Crosby Twp)	October 1 to June 30 (Spring and fall spawning species, including Lake Trout)
○ Bass Lake (South Elmsley Twp) ○ Lower Rideau Lake (South Elmsley Twp) ○ Bob's Lake (South Sherbrooke Twp) ○ Christie Lake (South Sherbrooke Twp) ○ Dalhousie Lake (Dalhousie Twp) ○ Davern Lake (South Sherbrooke Twp) ○ Farren Lake (South Sherbrooke Twp) ○ Grippen Lake (Leeds Twp) ○ Indian Lake (South Crosby Twp) ○ Little Long Lake (Lansdowne Twp) ○ Millpond Lake (South Burgess) ○ Otter Lake (South Elmsley, South Burgess and Bastard Twps)	October 15 to June 30 (Spring and Fall spawning species, including Lake Whitefish and Cisco)
○ Otty Lake (North Burgess and North Elmsley Twps) ○ Pike Lake (North Burgess Twp) ○ Silver Lake (South Sherbrooke Twp) ○ Redhorse Lake (Lansdowne Twp) ○ Tay River (South Sherbrooke, Bathurst, Drummond and North Elmsley Twps) ○ Wolfe Lake (North Crosby Twp)	
○ Bennett Lake (Bathurst Twp) ○ Crosby Lake (North Crosby Twp) ○ Big Rideau Lake (South Burgess, Bastard and South Elmsley Twps) ○ Gananoque River (Leeds Twp) ○ Lac Georges (Plantagenet and Alfred Twps) ○ Gillies Lake (Lanark Twp) ○ Little Crosby Lake (North Crosby Twp) ○ McLaren Lake (North Burgess Twp) ○ Mississippi Lake (Drummond, Beckwith and Ramsay Twps) ○ Mississippi River (Beckwith, Ramsay, Pakenham and Fitzroy Twps) ○ Raisin River below Martintown dam (Charlottenburgh Twp) ○ Rideau River (Wolford, Oxford, Montague, Marlborough, South Gower, North Gower, Osgood, Nepean and Gloucester Twps) ○ South Lake (Leeds Twp) ○ South Nation River below Plantagenet weir (Plantagenet Twp) ○ Upper Rideau Lake (North Crosby Twp) ○ Westport Sand Lake (North Crosby Twp)	January 1 – June 30 (Winter and spring spawning species, including Burbot)
○ Small rivers and streams (denoted on 1:50,000 National Topographic System maps as being one-lined) ○ All other waterbodies in FMZ 18	March 15 to June 30 (Spring spawning species)

**Additional timing guidelines may apply as they relate to endangered and threatened species for works in both water and wetland areas. Timing guidelines are subject to change, depending on species found in a given waterbody.*

Should you have any questions, please do not hesitate to contact Joffre Côté, Management Biologist (at 613-258-8214 or joff.cote@ontario.ca) or Jane Devlin, Management Biologist (at 613-258-8418 or jane.devlin@ontario.ca).

Sincerely,

John Boos

Resources Management Supervisor
Kemptville District Office
Ministry of Natural Resources and Forestry

Ministry of the Environment and Climate Change

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Ontario

By email only

March 1, 2018

BTE Engineering

Attention: Steve Taylor, P.Eng., President
Steven.taylor@bteng.ca

Dear Mr. Taylor:

Re: Queensway Downtown Bridges EA Metcalfe to Main Street, WP 4170-13-00

Thank you for the Notice of Study Commencement letter dated July 12, 2017 and the Notice of Public Information Centre No. 1 dated November 23, 2017. We received copies of both notices by email on December 4, 2017. Your letter indicates that the project is being planned as a Group B project in accordance with the *Class Environmental Assessment for Provincial Transportation Facilities, MTO 2000*.

Please provide copies of all future notices, and a copy of the final documentation to my attention. My preferred methods of correspondence are email for notices, and compact disc for reports.

MOECC Areas of Interest

MOECC staff recommend that the issues discussed below be considered during highway planning, design and construction. We are aware that many of these issues are typically addressed in detail through special provisions in the contract. The following comments are standard MOECC comments for highway projects, and may not all apply to the proposed project.

The documentation prepared for this project should consider the following issues:

1) Impacts to surface water due to construction in or near a watercourse, erosion, spills, or highway operation,
2) Impacts to wells due to spills, extensive dewatering or highway operation,
3) Management of surplus materials, waste or contaminated soil and groundwater
4) Noise impacts, both permanent and temporary.

We recommend that you contact this office as soon as possible during the environmental assessment process if you become aware of:

- contaminated sites in the study area or influence area of the project,
- a source water protection vulnerable area in the vicinity of the project, or
- issues that are contentious to the general public, aboriginal community, or a review agency.

We recommend that complaint response protocols be developed to address reported well water disturbances, noise, dust and claims of property damage.

Water Resources

We recommend that the proponent consider development of Dewatering and Excess Water Management Plans for collection, assessment, classification, conveyance, treatment and discharge of ground, surface and storm water encountered within the study area during construction.

We recommend that the proponent develop an Excavation and Sediment Control Plan and a Spill Prevention and Contingency Plan for the project. Spills should be reported to the Spills Action Centre at 1-800-268-6060.

If the highway construction involves taking, dewatering, storage or diversion of water in excess of 50,000 litres per day, the activity may be required to be registered on the Environmental Activity and Sector Registry (EASR) or may require a Permit To Take Water. The process to be used depends on the source of the water, the quantity of water taken, and the type of construction activity. EASR requirements for water takings for road construction and construction dewatering are prescribed in Ontario Regulation 63/16 under the Environmental Protection Act. The Permit To Take Water requirements are prescribed in Section 34, Ontario Water Resources Act.

Where dredging is required, consideration should be given to appropriate storage, handling, dewatering and disposal of excavated material.

Guidance on nearshore construction and dredging may be obtained from this Ministry's *Guidelines for Evaluating Construction Activities Impacting on Water Resources* dated January 1995 and *Evaluating Construction Activities Impacting on Water Resources, Part III A, Part III B, and Part III C* dated February 1994.

Stormwater management should be designed in accordance with this Ministry's *Stormwater Management Planning and Design Manual, March 2003*.

MOECC has concerns with the use of a cured-in-place process (CIPP) for culverts. Styrene released into the environment can result in harm to fish.

Source Protection

Water supplies must be protected during this project. This includes assessment early in the process whether a project is occurring within a source water protection vulnerable area. If the project is occurring in a vulnerable area, then there may be policies in the local Source Protection Plan (SPP) that need to be addressed (requirements under the Clean Water Act). The proponent should contact and consult with the appropriate Conservation Authority/Source Protection Authority (CA/SPA) to discuss potential considerations and policies in the SPP that apply to the project.

The TESR should include a section on Source Water Protection. Specifically, it should discuss whether or not the project is located in a vulnerable area or changes or creates new vulnerable areas, and provide applicable details about the area. If located in a vulnerable area, proponents should document whether any project activities are a prescribed drinking water threat and thus pose a risk to drinking water (please consult with the appropriate CA/SPA). Where an activity poses a risk to drinking water, the proponent must document and discuss in the report how the project adheres to or has regard to applicable policies in the local SPP. If creating or changing a vulnerable area, proponents should document whether any existing uses or activities may potentially be affected by the implementation of source protection policies. This section should reflected in other sections of the report, such as the identification of net positive/ negative effects of alternatives, mitigation measures, evaluation of alternatives etc. Even if the project activities in a vulnerable area are deemed to not to be a drinking water risk, there may be other policies that apply, so consultation with the local CA/SPA is important.

Contaminated Sites and Waste Management

The proponent should consider the potential that the project may be constructed in an area of contamination. If an area of contamination is present, the TESR should determine the appropriate management of contaminated soil, sediment or groundwater as well as consider health and safety measures.

If areas of contaminated soil or groundwater are encountered during construction, the contaminated soil must be managed in accordance with MOECC standards. The *Environmental Protection Act* (EPA) and Regulation 347 require waste to be classified and disposed of appropriately. When determining the waste category, the proponent must ensure compliance with Schedule 4 of Regulation 347. Ontario Regulation 153/04 and the accompanying *Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act* provide direction on assessment, restoration and soil criteria.

Excess materials generated during construction must be handled in accordance with this Ministry's *Protocol for the Management of Excess Materials in Road Construction and Maintenance*. The principles of this protocol are reflected in OPSS 180.

We recommend that the proponent consider development of an Excess Materials Management Plan for identification, assessment, excavation, conveyance, treatment, staging, grading and/or off-site disposal/re-use of soils and aggregates generated within the study area during construction.

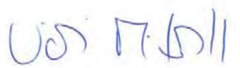
Noise and Vibration

Evaluation and mitigation of noise impacts should be done in accordance with *A Protocol for Dealing with Noise Concerns During the Preparation, Review and Evaluation of Provincial Highways Environmental Assessments*. Construction noise should be handled in accordance with Section 8 of the above noise protocol. Section 8 requires adherence to municipal noise bylaws, general noise control measures to be specified in MTO contract documents, investigation of noise complaints, and compliance with MOECC sound level criteria for construction equipment if complaints are persistent.

Where blasting is required, we recommend that protocols be set up and followed for on-site and receptor blast monitoring (vibration and concussion), and that 48 hour notice be given to area residents prior to blasting.

If you have questions or concerns about the above comments, please contact me at (613) 540-6852.

Yours Truly,



Vicki Mitchell
Environmental Assessment Coordinator
Eastern Region

ec: Dave Lindensmith, Senior Project Engineer, MTO

Tara MacDonald, Supervisor, Ottawa District Office, MOECC

Darcie Dillon

From: Steve Taylor <steven.taylor@bteng.ca>
Sent: March 4, 2019 1:48 PM
To: Darcie Dillon
Subject: FW: GWP 4170-13-00 Queensway MTAC 7 Presentation

Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
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From: Dillon, Mary (MNRF) [mailto:Mary.Dillon@ontario.ca]
Sent: March 4, 2019 10:22 AM
To: Steve Taylor
Subject: RE: GWP 4170-13-00 Queensway MTAC 7 Presentation

Hi Steve,

I had planned to participate in the meeting this morning, but am no longer able to attend. I had a look at the slides you provided and did not see anything directly related to our Ministry's interests. If there are any questions at this point then please let me know and we would be happy to help.

Thanks,

Mary Dillon
District Planner – Kemptville District
Ministry of Natural Resources and Forestry
613-258-8470

From: Steve Taylor <steven.taylor@bteng.ca>
Sent: February-25-19 7:57 PM
To: Andrea Feilders <Andrea.feilders@ottawa.ca>; Birgitte Alting-Mees <Birgitte.Alting-Mees@ottawa.ca>; bruce.kenny@ottawa.ca; Bryden Denyes <bryden.denyes@ottawa.ca>; Byron Hemlow <byron.hemlow@ottawa.ca>; Carlos Ramos <carlos.ramos@ottawa.ca>; Carol Franklin <carol.franklin@ottawa.ca>; Carol Hall <Carol.Hall@ottawa.ca>; Chelsea Williams <chelsea.williams@ottawa.ca>; Chris Roy <Christopher.Roy@ottawa.ca>; Dan Palermo <danny.palermo@ottawa.ca>; Darcie Dillon <darcie.dillon@bteng.ca>; Lindensmith, Dave (MTO) <Dave.Lindensmith@ontario.ca>; Douglas Rathwell <Douglas.Rathwell@ottawa.ca>; Vanderlaan, Frank (MTO) <Frank.Vanderlaan@ontario.ca>; Genya Stefanoff <genya.stefanoff@ottawa.ca>; Gil Tait <gil.tait@ottawa.ca>; Gord Bell <gord.bell@bteng.ca>; Greg Sergeant <greg.sergeant@ottawa.ca>; Hanna, John (MTO) <John.Hanna@ontario.ca>; Hortop, Adam <Adam.Hortop@ottawa.ca>; Jama A Mohamed <Jama.Mohamed@ottawa.ca>; Jim Lethbridge <Jim.Lethbridge@ottawa.ca>; Jocelyne Turner <Jocelyne.Turner@ottawa.ca>; Katja Sostaric <katja.sostaric@ottawa.ca>; Kevin Ogilvie <kogilvie@sympatico.ca>; Kevin Wherry <kevin.wherry@ottawa.ca>; Kornel Mucsi <Kornel.Mucsi@ottawa.ca>; Kyle Delaney <kyle.delaney@ottawa.ca>; Linda Carkner <linda.carkner@ottawa.ca>; Mark Brandt <mtb@mtbarch.com>; Dillon, Mary (MNRF) <Mary.Dillon@ontario.ca>; Patrick Sammon <Patrick.Sammon@ottawa.ca>; Peter McKay <Peter.mckay@ottawa.ca>; Quackenbush, William <William.Quackenbush@ottawa.ca>; Renjit Varghese <Renjit.Varghese@ottawa.ca>; Robin Bennett <Robin.Bennett@ottawa.ca>; Scott Laberge <scott.laberge@ottawa.ca>; Stephen Brown <sdbrown@brownandcompany.ca>; stephen.lyon@city.ottawa.on.ca; Stuart Edison <Stuart.Edison@ottawa.ca>; tina.stone@bteng.ca; Vanessa Black <vanessa.black@ottawa.ca>
Subject: GWP 4170-13-00 Queensway MTAC 7 Presentation

Attached please find the MTAC presentation for next week's meeting. This is for those who might be calling in.

Steve

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From: Lindensmith, Dave (MTO) [mailto:Dave.Lindensmith@ontario.ca]
Sent: May 8, 2019 8:08 AM
To: Livingstone, Kimberly (MTCS)
Cc: Steve Taylor; Hanna, John (MTO); Barboza, Karla (MTCS)
Subject: FW: MTCS File No. 0007152- City of Ottawa, Rehabilitation/replacement of seven bridges

Hi Kimberly,

Please find answers to your questions embedded in your e-mail below in blue.

If you have any additional questions, please don't hesitate to call or e-mail.

Thanks.

David Lindensmith, P. Eng.
Sr. Project Engineer
MTO Planning & Design Section

From: Livingstone, Kimberly (MTCS)
Sent: May-02-19 8:28 AM
To: steven.taylor@bteng.ca
Cc: Hanna, John (MTO) <John.Hanna@ontario.ca>; Lindensmith, Dave (MTO) <Dave.Lindensmith@ontario.ca>
Subject: MTCS File No. 0007152- City of Ottawa, Rehabilitation/replacement of seven bridges

Hello,

Thank-you for sending notice to MTCS regarding the Public Information Centre (PIC) No. 2 for the rehabilitation and/or replacement of seven bridges on Highway 417 from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa.
Please remove Jeff Elkrow as your contact and replace it with myself (contact information below). As well, please ensure Karla Barboza, Team Lead, Heritage Planning Unit, is copied on all notices- karla.barboza@ontario.ca.

In reviewing the documentation on file, MTCS has the following questions with regards to this project:

1. There is mention that a Stage 1 archaeological assessment was undertaken for project GWP 663-93-00. DO you have a Project Information Form Number (PIF#) so we can link MTCS files? Stage I Arch for 663 (CR Murphy, 2004) CIF PO37-13

2. The materials state that a further archaeological assessment has been undertaken. Has a PIF# been assigned? If so, please provide the PIF#. If the report has not yet been submitted, please indicate the timing of submitting the report to MTCS. PIF No. P248-0291-2017

3. Are any of the seven bridges in the materials identified as potential heritage structures as per the Ontario Heritage Bridge Guidelines? The 7 bridges under this preliminary design assignment were constructed prior to 1965. MTO bridges built between 1945 and 1965 have been screened for heritage significance with the information documented in the Heritage Bridges Identification and Assessment Guide, Ontario 1945 – 1965. None of the 7 structures are included on the Candidate Bridge List A, B or C.

4. Has a / or will a CHAR be undertaken for this project? (The CHAR would include existing conditions and a preliminary impact assessment). As the bridges in this study have been screened (see 3. above) CHARs will be not be prepared as part of the study.

5. Would it be possible for you to send MTCS a copy of the PIC No.2 materials/slides? A copy of the PIC 2 presentation materials are available on the study website at:

   https://queenswaydowntownbridges.com/wp-content/uploads/2019/04/GWP4170-13-00-17-010-PIC-2-EN-Exhibits-Apr-23-2019-QC.pdf

   Due to the size of the documents, if you would like to receive a copy directly, transmission by DVD or ftp can be arranged.

Thanking you in advance for your reply.

Regards,

Kimberly Livingstone | Heritage Planner (A)
Culture Division | Programs and Services Branch | Heritage Planning Unit
Ministry of Tourism, Culture and Sport
401 Bay Street
17th Floor, Suite 1700
Toronto, ON M7A 0A7
416.314.7133
kimberly.livingstone@ontario.ca

October 24, 2019

BY EMAIL & REGULAR MAIL

Mr. David Lindensmith, P.Eng.
MTO Senior Project Engineer
Ministry of Transportation - Eastern Region
1355 John Counter Blvd., Postal Bag 4000
Kingston, ON K7L 5A3
Email: Dave.Lindensmith@ontario.ca

RE: HAWTHORNE AVENUE - DOWNTOWN BRIDGES STUDY

Dear Mr. Lindensmith,

On behalf of the City, I would like to thank the MTO for their collaboration on the Downtown Bridges Study through the Municipal Technical Advisory Committee (MTAC).

Pursuant to a review of the presentation to Transportation Committee, concerns have been raised about the treatment of Hawthorne Avenue during the project. Please be advised that Hawthorne Ave. is designated as a Traditional Mainstreet in the City's Official Plan, which is adopted by Council under the Planning Act and approved by the Ministry of Municipal Affairs and Housing. This designation means that the street is an Intensification Target Area and a Design Priority Area. The reason for this designation is that, in the one-block stretch between the Rideau Canal and Main Street, it provides commercial continuity between two other Traditional Mainstreets, Elgin and Main. The City recently completed a major public investment in a renewal of Main Street, and likewise our renewal of Elgin Street is currently under construction.

The north side comprises buildings that contain a mix of uses and a relationship to the sidewalk that also provide pedestrian continuity along active frontages between those two more prominent Mainstreets.

The City knows from other examples that commercial viability is much more difficult to sustain on single-loaded Mainstreets than on Mainstreets that have storefronts on both sides. With buildings on both sides, the public realm is also better enclosed and provides the pedestrian-supportive environment that gives those corridors the role of neighbourhood focus that the Official Plan seeks to solidify.

The MTO Downtown Bridges project as proposed will have significant impacts on Hawthorne Ave., including the removal of buildings that are important for the street's function as a Traditional Mainstreet, expropriation of property that may prevent the reconstruction of suitable replacement buildings, the use of Ballantyne Park, and the use of the roadway as a detour route.

Consequently, we would appreciate further information on the following:

- What alternatives were evaluated, and what was the rationale for the choice to remove buildings on the north side of Mainstreet?
- Were alternatives considered that would necessitate the removal of fewer buildings? In other words, is there any way that some could be saved?
- Was the street's role as a Traditional Mainstreet considered when alternatives were evaluated?
- Assuming there is no reasonable alternative to the removal, what is the use of the lands after the bridge project is completed? Will MTO permit redevelopment of all or a portion of any of the parcels?
- If redevelopment is not possible, why? Additionally, what is MTO's intentions on the future use of those parcels?
- Will there be any limitations on the City's use of its own parcel of park land?

In addition, Councillor Shawn Menard (Ward 17, on which these lands are located) has requested that the following considerations be embedded as part of the retained approach:

- Cycling connectivity under the Main Street bridge and the need to ensure separated or raised cycle tracks in the replacement of this bridge (more room is desired).
- If saving the Gordon and McGovern Building is not possible, then it should be preserved and used in a nearby location in the city given its history and heritage.
- A portion of the land on the West side of Main Street (beside Gordon and McGovern) should be used to create a connected bike lane, where there is none right now.

We understand that partnership with municipal organizations brings added complexity, but we feel that we have set a solid foundation for continued collaboration in this area. As concerns are being brought to our attention, it is important that we have more information from you in order to address short term and long-term planning issues in the area.

Please do not hesitate to reach out to **Don Herweyer, Director - Economic Development and Long-Range Planning** (Don.Herweyer@ottawa.ca) or **Robin Souchen, Director - Corporate Real Estate Office** (Robin.Souchen@ottawa.ca) if you have any questions or require additional information from us.

Sincerely,

Stephen Willis, MCIP, RPP
General Manager
Planning, Infrastructure and Economic Development
City of Ottawa

Cc: Alain Gonthier, Director - Infrastructure Services (City of Ottawa)
Don Herweyer, Director - Economic Development and Long-Range Planning (City of Ottawa)
Councillor Shawn Menard - Ward 17 (City of Ottawa)
Paul Landry, Manager - Parks and Recreational Facilities (City of Ottawa)
Robin Souchen, Director - Corporate Real Estate Office (City of Ottawa)
Steve Taylor (BTENG Consultants) - steven.taylor@bteng.ca
Vivi Chi, Director - Transportation Planning (City of Ottawa)

Rideau Canal
National Historic Site of Canada
34 Beckwith Street South
Smiths Falls, ON K7A 2A8

14 January 2021

Peter Freure
Senior Project Engineer
Ministry of Transportation (MTO) – Eastern Region
1355 John Counter Blvd
Kingston, ON K7L 5A3
Email: peter.freure@ontario.ca

Subject: MTO Queensway Canal Bridge Replacement - Proposed Alternative Staging Option

This letter is in response to a request from MTO to provide written feedback on the proposed alternative staging option for the rapid replacement of the two bridge structures that carry Highway 417 (the Queensway) over the Rideau Canal in the City of Ottawa.

The original construction staging plan proposed construction zones on both the north and south sides of the Queensway over the Rideau Canal. The revised strategy proposes focusing the construction zone only to the north of the existing crossing. The modified staging plan was first presented to Parks Canada staff at the Federal Advisory Committee meeting on June 24, 2020.

Parks Canada is supportive of the proposed staging alternative on the north side of the Queensway. The advantages of constructing both bridge structures north of the Queensway include the avoidance of a requirement of MTO to acquire 221 Echo Drive and 3/5 Hawthorne Avenue, both of which contain local businesses. This modified staging arrangement also allows for additional physical separation from an existing 1220mm watermain, reducing risk to municipal infrastructure during construction.

As it pertains to Parks Canada's responsibilities for the protection and management of the Rideau Canal National Historic Site and World Heritage site, the alternative staging approach removes the southern construction zone from the immediate viewscape of Pretoria Bridge, a scenic lift bridge that provides for safe navigation of the Rideau Canal by large vessels, and which contributes to the quality visitor experience of the canal in the Ottawa sector. Similarly, it will support the continuation of local businesses that complement the recreational value of the waterway and its adjacent pathways and greenspace.

It is understood that the impacts of construction activity on Parks Canada property is temporary and measures to mitigate risk to federal lands and assets will be further fleshed out during the detailed design phase in consultation with the Federal Advisory Committee.

As previously noted, a real estate agreement with Parks Canada for the temporary use of federal property will be required.

If you have any further questions, please do not hesitate to contact my office.

Sincerely

Sandra Limoges

Sandra Limoges
A/ Realty Manager, Rideau Canal
Ontario Waterways

Fw: Fire route questions

Steve Taylor <steven.taylor@bteng.ca>
Tue 2021-10-26 5:59 PM
To: Darcie Dillon <darcie.dillon@bteng.ca>
Cc: Julia Hoglund <julia.hoglund@bteng.ca>

figure this out is Brent ambulance service.

Email him if necessary..
Add to select correspondence.

Steve

From: Winchcombe, Brent <Brent.Winchcombe@ottawa.ca>
Sent: Monday, October 25, 2021 3:12 PM
To: Evans, Allan <Allan.Evans@ottawa.ca>; Steve Taylor <steven.taylor@bteng.ca>
Cc: Peter Freure (peter.freure@ontario.ca) <peter.freure@ontario.ca>; Darcie Dillon <darcie.dillon@bteng.ca>; Gord Bell <gord.bell@bteng.ca>
Subject: RE: Fire route questions

Thanks Allan.

The main concern we would have is the awning clearance. Our minimum clearance height is 9 feet. As for backing up, it is never ideal, but definitely easier than backing up a ladder truck I would imagine.

Cheers
Brent

From: Evans, Allan <Allan.Evans@ottawa.ca>
Sent: October 25, 2021 12:25 PM
To: Steve Taylor <steven.taylor@bteng.ca>
Cc: Peter Freure (peter.freure@ontario.ca) <peter.freure@ontario.ca>; Darcie Dillon <darcie.dillon@bteng.ca>; Gord Bell <gord.bell@bteng.ca>; Winchcombe, Brent <Brent.Winchcombe@ottawa.ca>
Subject: RE: Fire route questions

My wife is a paramedic so I usually try and have their best interests in mind ☺.

I have cc'd Chief Winchcombe from the medics side though – I'm sure they would prefer a drive through option, but I'm not sure what their policy is for reversing etc.

Allan Evans

Fire Protection Engineer / Ingénieur de Protection d'Incendies
Prevention Division / Prévention des Incendies
Ottawa Fire Services / Service des Incendies d'Ottawa
1445 Carling Avenue / 1445 Avenue Carling
Ottawa, ON K1Z 7L9
Allan.Evans@Ottawa.ca
☎ (613) 913-2747 | ☎ (613) 580-2424 x24119 | 🖷 (613) 580-2866 | ✉ Mail Code: 25-102 | @OFSFPE

10/28/21, 9:29 AM Mail - Julia Hoglund - Outlook

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From: Steve Taylor <steven.taylor@bteng.ca>
Sent: October 25, 2021 11:46 AM
To: Evans, Allan <Allan.Evans@ottawa.ca>
Cc: Peter Freure (peter.freure@ontario.ca) <peter.freure@ontario.ca>; Darcie Dillon <darcie.dillon@bteng.ca>; Gord Bell <gord.bell@bteng.ca>
Subject: Re: Fire route questions

CAUTION: This email originated from an External Sender. Please do not click links or open attachments unless you recognize the source.
ATTENTION : Ce courriel provient d'un expéditeur externe. Ne cliquez sur aucun lien et n'ouvrez pas de pièce jointe, excepté si vous connaissez l'expéditeur.

Allan
Did you have a contact name for ambulance service. We should check with them as well.

Steve

BT ENGINEERING BTE

Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
President
100 Craig Henry Drive, Suite 201
Ottawa, Ont. K2G 5W3
E-Mail: steven.taylor@bteng.ca
Phone: 613-228-4813
FAX: 1-613-280-1305
Toll Free: 1-866-218-1001
[www.bteng.ca]www.bteng.ca

From: Steve Taylor <steven.taylor@bteng.ca>
Sent: Monday, October 25, 2021 8:55 AM
To: Evans, Allan <Allan.Evans@ottawa.ca>
Cc: Peter Freure (peter.freure@ontario.ca) <peter.freure@ontario.ca>; Darcie Dillon <darcie.dillon@bteng.ca>; Gord Bell <gord.bell@bteng.ca>
Subject: Re: Fire route questions

Excellent.

Steve

BT ENGINEERING
BTE

Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
President
100 Craig Henry Drive, Suite 201
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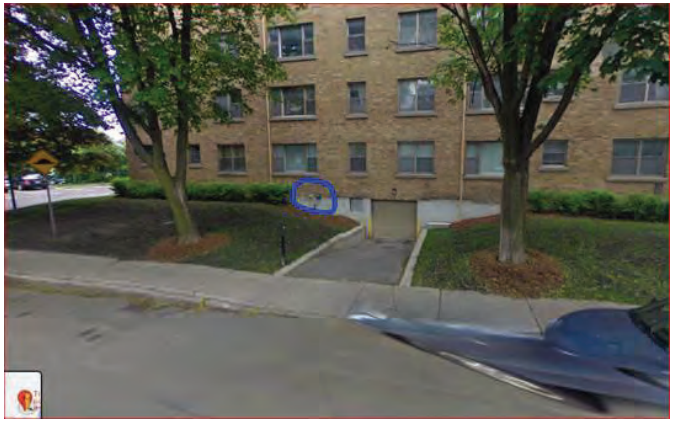
E-Mail: steven.taylor@bteng.ca
Phone: 613-228-4813
FAX: 1-613-280-1305
Toll Free: 1-866-218-1001
[www.bteng.ca]www.bteng.ca

From: Evans, Allan <Allan.Evans@ottawa.ca>
Sent: Friday, October 22, 2021 2:59 PM
To: Steve Taylor <steven.taylor@bteng.ca>
Cc: Peter Freure (peter.freure@ontario.ca) <peter.freure@ontario.ca>; Darcie Dillon <darcie.dillon@bteng.ca>; Gord Bell <gord.bell@bteng.ca>
Subject: RE: Fire route questions

Just an update – I went down to the location yesterday and had a walk around.

I have confirmed there are fire department connections, but they are located off of Argyle across the street from the hydrant. This is good because we don't have to worry about the bridge construction obstructing.



The front of the building (adjacent to Queen Elizabeth Driveway) does appear to be the main entrance for firefighters. There is a fire route sign (although oddly enough they have parking there – this is a separate issue we will deal with) and a fire safety plan box is located at the entrance under the awning. There was no fire alarm annunciator panel that I could locate at the front or rear entrance, but with the fire safety plan box located here, I would assume this was our primary entrance.
Due to the low overhead of the awning, if you are able to maintain access for our trucks up to that awning (from Argyle to the awning), then I see no major changes to our response. Ladder truck would have to back out from this location anyways, pumper truck would normally proceed straight through, but not end of world to back out.



Allan Evans

Fire Protection Engineer / Ingénieur de Protection d'Incendies
Prevention Division / Prévention des Incendies
Ottawa Fire Services / Service des Incendies d'Ottawa
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☎ (613) 913-2747 | ☎ (613) 580-2424 x24119 | 🖷 (613) 580-2866 | ✉ Mail Code: 25-102 | @OFSFPE

OTTAWA FIRE SERVICES
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Peter Freure
Senior Project Engineer
Ministry of Transportation (MTO) – Eastern Region
1355 John Counter Blvd
Kingston, ON K7L 5A3
(sent via email)

Subject: MTO Queensway Canal Bridge Replacement - Proposed Alternative Staging Options and Pier Location

NCC staff have had the opportunity to review the modified staging arrangement proposed for the replacement of the two bridge structures that cross the Rideau Canal, Queen Elizabeth Driveway and Colonel By Drive. This strategy foresees the construction of both replacement bridge structures north of the Queensway, instead of the original technically preferred alternative which identified one replacement bridge structure constructed to the north and one to the south of the crossing. The modified staging plan was first presented to NCC staff at a meeting of the Federal Advisory Committee and the MTO has requested that the NCC provide written feedback on the staging options as well as the proposed location of the bridge piers.

The advantages of constructing both bridge structures north of the Queensway include the avoidance of a requirement to permanently acquire 221 Echo Drive and 3/5 Hawthorne Avenue. This modified staging arrangement also allows for additional physical separation from an existing large-diametre watermain, thereby reducing risk to municipal infrastructure during construction.

Expected impacts of this alternative staging arrangement include a larger temporary NCC and Parks Canada property requirement north of the Queensway. The arrangement will also necessitate a 90-week closure of the parkways and pathways that pass under the crossing, anticipated to begin during May of the first year of construction and end in December of the second year of construction. The closures would include:

- Queen Elizabeth Driveway and Rideau Canal Western Pathway from Argyle to Elgin
- Colonel By Drive and Rideau Canal Eastern Pathway from Main to Hawthorne

Summary of NCC staff feedback

- NCC staff are supportive of the proposed alternative staging arrangement that would avoid the need to acquire and potentially demolish existing buildings located at the northeast corner of Colonel By Drive and Hawthorne Avenue.

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Canada

- The affected buildings support land-uses that complement the adjacent canal, pathways and greenspaces. The businesses attract greater activity to the area and provide amenities that serve residents and visitors using the adjacent federal lands. Maintaining these buildings is consistent with the NCC's planning objectives.
    - The Plan for Canada's Capital calls for lively shorelines with greater public access, activities and amenities. The Capital Urban Lands Plan directs the NCC to focus new animation, amenities and services where infrastructure support exists or can be efficiently provided. In this case, the existing private buildings adjacent to the NCC's Capital Urban Greenspace designated lands serve this objective.
    - The buildings support the applicable municipal planning objectives of Hawthorne Avenue's Traditional Mainstreet designation in the City of Ottawa's Official Plan.
- Parks Canada is the federal custodian of the Rideau Canal and will provide guidance and feedback on the stewardship of its assets and on all canal operational matters separately. The Rideau Canal is a UNESCO World Heritage Site, National Historic Site of Canada and Canadian Heritage River.
- In principle, NCC staff are supportive of relocating the piers out of the canal and the proposed integration of the piers with the canal wall. NCC staff will work the project team to provide more detailed feedback as the design details are advanced and to ensure adequate clearance for the canal pathways.
- The impacts of construction staging located on federal property are mostly temporary in nature. The project team has identified measures to be implemented during construction that will mitigate risk to federal lands and assets. These measures are expected to be further detailed during the detailed design phase of the project.
- NCC staff will continue to work with the MTO and the City of Ottawa to minimize mobility disruptions for all users including pedestrians and cyclists during temporary closures of the canal pathways and parkways. Traffic counts from 2021 show that the Rideau Canal Eastern and Western Pathways support a daily average of 586 and 1,980 users, respectively. During the peak summer period, each pathway frequently supports between 2,000 to 4,000 users daily.
- Detailed Traffic Management Plans will be required as part of the upcoming Federal Approval application to the NCC as the project is advanced. The Traffic Management Plan must provide for dedicated detours and safe intersection crossings for canal pathway users with facilities for cyclists that are physically separated from other traffic. These facilities must also be winter maintained.
- The staging arrangement must accommodate public use of the Rideau Canal Skateway each winter by providing adequate horizontal clearance (minimum 20m), overhead protection for

public safety, and satisfactory conditions for ice formation beginning in late November including measures to prevent the accumulation of debris on the surface.

- NCC staff advise that the closures of the Parkways during construction will affect major events, such as the Weekend Bikedays Program, the opening of the Parkways for active use, and other marathons, walks etc.. We look forward to working with the MTO and the City to ensure the coordination of any required operational changes as the construction schedule, the timing of road closures, and staging area requirements are refined.
- The MTO will be responsible for implementing a public engagement and communications plan that includes direct engagement with stakeholders and user groups with appropriate public notices and on-site signage as the construction timeline approaches. The MTO will be responsible for the coordination of public messaging regarding parkway and pathway closures as well as responding to feedback from the public.
- As the design process advances, the NCC has indicated its support for design changes that would improve the experience of users for assets affected by construction including traffic calming along parkways, rationalization of pathway and pedestrian connections, as well as urban design and landscape improvements. These aspects will be further reviewed when the Federal Approval application is submitted during the detailed design phase of the project.
- As the project team has noted, the bridge replacement project provides excellent opportunities to improve the design treatment of the underpasses and abutments/embankments including the integration of enhanced lighting, quality surface treatments, and landscape improvements.
- The project also provides an opportunity to enhance pedestrian connectivity in the vicinity of the Queensway crossing. Staff support the inclusion of a pedestrian connection along the west side of Queen Elizabeth Driveway from Elgin to north of Catherine Street within the project's scope of work.
- Tree removals on NCC property located within proposed contractor laydown and staging areas must be minimized. Tree removals will be subject to replacement planting requirements. Tree replacement plantings should be integrated into reinstatement plans to further soften the visual presence of the highway infrastructure along the canal corridor.

Next Steps

- NCC staff look forward to reviewing the draft TESR once available.
- An application for Federal Approval under the National Capital Act as well as associated real estate agreements with the NCC and Parks Canada for any permanent or temporary uses of federal property will be required. It is anticipated that the Federal Approval application will

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be initiated by the MTO and submitted to the NCC at the beginning of the detailed design phase for the canal bridge replacement. A real estate agreement for the temporary use of NCC property will need to be negotiated prior to mobilization.

- The project is subject to a determination of adverse environmental effects under the *Impact Assessment Act* (IAA) from Parks Canada, as lead authority, the NCC, and possibly Transport Canada. In addition, the project requires the posting of a Notice of Intent to make a determination under section 82 of the IAA on the Canadian Impact Assessment Registry and, upon satisfactory review of the Environmental Effects Evaluation by the foregoing federal responsible authorities, the posting of a Notice of Determination.

Our team would be happy to discuss should your team require any further detail on our feedback. Thank you for your continued collaboration on this important project.

Sincerely,



Christopher Meek
Senior Land Use Planner
Federal Approvals, Heritage and Archaeology Programs
National Capital Commission
40 Elgin Street, Ottawa
christopher.meek@ncc-ccn.ca

cc. Martin Barakengera NCC
Juan Galindez
Arto Keklikian
Chantal Miner
Michael Muir
Heather Thomson

Susan Miller Parks Canada
Sandra Limoges

Soloway Wright | lawyers

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Email address: tstanton@solowaywright.com

FILE NO: 35913-1255

VIA EMAIL

October 19, 2022

John Adams - Property Supervisor
Ministry of Transportation,
Property Section - Ottawa Office
347 Preston Street,
Ottawa, ON K1S 3J4

Dear Mr. Adams:

Re: Impacts of Highway 417 Rehabilitation/Replacement of Downtown Bridges (Metcalfe Street to Main Street) on Tiffany Apartments

As you are aware, we are lawyers for Paramount Properties, the owner of Tiffany Apartments, a property municipally known as 150 Queen Elizabeth Driveway, Ottawa, ON K2P 1E7 (the "**Apartment**").

We are in receipt of the minutes and preliminary drawings from the meeting held September 27, 2022 on location at the Apartments. We thank you for meeting with us and documenting our discussions on a project to construction and replace two 417 Highway bridges crossing the Rideau Canal, being the Metcalfe Street and Main Street bridges (the "**Project**").

We believe the Project, in its current design configuration, will unreasonably disturb the tenants' private use and enjoyment of the Apartment and will result in significant damages for injurious affection. The impacts on the Apartment, that will endure for multiple years, include:

a. Encroachment on Apartment land causing a loss of tenant parking;

b. Loss of existing ingress and egress to the Apartment which may render all parking on the Apartment land unusable;

c. Loss of mature trees on Apartment land;

d. Visual obstruction to tenants with views of the canal;

e. Visual intrusion to tenants facing canal by workers constructing the bridges at height and in close proximity to the Apartment units;

f. Significant noise disturbances affecting all residents of the Apartment;

g. Loss of income from tenants leaving or vacancies; and,

h. Professional time spent managing and addressing tenant issues and complaints relating to the Project.

The scale and duration of the Project is extensive and its impact on the Apartment and its tenants cannot be understated. It is unreasonable to expect the tenants of the Apartment to live at the centre of an expansive construction site as proposed by the current design configuration. Alternate solutions must be considered.

From our discussion, it is our understanding that construction of the two bridges on the south side of Hwy 417 is not considered feasible due to concerns of damaging an existing buried watermain in that area. Please indicate on the drawing you provided (Alternative 3 TPA, dated June 6, 2022) the approximate location of the watermain. Was consideration given to constructing one bridge on each side of the highway? This would substantially reduce the size of the required staging and laydown area and could potentially avoid construction over the watermain. Please provide the drawings for Alternatives 1 and 2 as well as any other alternatives that were/are being considered.

At the September 27, 2022 meeting, Mr. Taylor (BTE – Consultant Project Manager) and Mr. Rogers (MTO – Sr. Project Engineer) explained that there would be ongoing opportunities for Paramount Properties to provide comment and input on the Project. Further, Mr. Rogers reiterated the MTO's commitment to maintaining meaningful dialogue with Paramount Properties, a noted stakeholder to the Project.

In this spirit, we ask that you keep our detailed concerns front of mind at the early design stages to minimize impacts on the Apartment and incorporate mitigation strategies wherever possible as the Project proceeds.

We remain available to work with you in delivering the Project in a way that reduces the impacts on the Apartment where possible and provides appropriate compensation where impacts are unavoidable.

Yours very truly,



Douglas B. Kelly
DBK/TS

cc: Ken Ages – Paramount Properties <kages@paramountapts.com>
Melanie Cascagnette – Paramount Properties <melanie@paramountapts.com>
Ken Rogers - MTO <ken.rogers@ontario.ca>
Steve Taylor -BT Engineering Inc. <steve.taylor@bteng.ca>
Darcie Dillon – BT Engineering Inc. <darcie.dillon@bteng.ca>

Parks Canada Parcs Canada

Rideau Canal
National Historic Site of Canada
34 Beckwith Street South
Smiths Falls, ON K7A 2A8

11 January 2022

Steven Taylor, President
BT Engineering
100 Craig Henry Drive, Suite 201
Ottawa, ON
K2G 5W3
Email: steven.taylor@bteng.ca

Subject: Highway 417 (Queensway) Bridge Reconstruction over the Rideau Canal, Ottawa

Dear Mr. Taylor,

On October 20, 2021, Parks Canada attended the 11th Federal Advisory Committee (FAC) meeting of the Ministry of Transportation (MTO) Environmental Assessment and Preliminary Design Study for the replacement of the Highway 417 (Queensway) bridge over the Rideau Canal. At this meeting, the FAC was provided with a project history overview, including the preliminary bridge design option, proposed construction methodology, and general project timelines.

This letter serves to confirm guidance provided in our August 2017 letter at project outset; feedback provided on key project aspects at previous FAC meetings; and communication provided to the MTO in January 2021 related to the proposed revised construction methodology. Lastly, we also provide some additional comments related to coordination with planned canal wall rehabilitation, existing site contamination, and protection of the natural environment.

Context
Parks Canada's interest in the replacement of the Highway 417 bridge relates to the Rideau Canal National Historic Site and UNESCO World Heritage Site, over which the bridge will cross. The Rideau Canal National Historic Site of Canada is owned and administered by Parks Canada with the mandate to preserve the cultural, natural and scenic values of the site so that all Canadians can enjoy this legacy into the future.

It is also a UNESCO World Heritage Site. It is Parks Canada's responsibility under the World Heritage Convention to manage the site to ensure the protection of its Outstanding Universal Values. All parties have a responsibility to ensure the stewardship and conservation of this internationally recognized waterway. Our comments and guidance are intended to support the collaborative planning and design process in order to achieve these objectives.

Parks Canada Parcs Canada

Parks Canada bases its decision-making concerning cultural resources on the *Standards and Guidelines for the Conservation of Historic Places in Canada* and with the principles and practice of Parks Canada's *Cultural Resource Management Policy*.

Impacts to Navigation
As previously communicated, the new bridge structure and its construction cannot impede navigation of the canal during the operating season, which extends from the Victoria Day long weekend to Thanksgiving, nor should it impact the National Capital Commission's Skateway operations during the winter months. Parks Canada will not permit work to be conducted over the canal during the high season of operations, from July 1st to August 15th inclusive. Outside this timeframe, a fully enclosed work platform will be required to ensure vessel safety. Vessel traffic will not be held for construction at any time.

The temporary works in the canal associated with the jack and slide construction method may require a large laydown area extending into the canal from the east side. It is important to note that the canal cut is not consistently uniform in depth. This will need to be factored into the construction methodology to ensure navigation depth is maintained.

In order to ensure safe navigation, a minimum 6.7m (22 feet) vertical clearance is required above the upper controlled water elevation limit (+/- 64.08m). This clearance must extend a minimum of 25m (82 feet) in width to provide for the safe passage of boats. This navigation clearance is achieved by the present Highway 417 bridge. It is understood that the preliminary design and construction methodology acknowledges and respects the navigation envelope.

Modified Preliminary Bridge Design – Relocation of Piers
The current Highway 417 bridge features two sets of six piers in the navigation channel. The preliminary bridge design includes the preferred removal of these piers from the water. At FAC Meeting #9 in March 2020, it was communicated that due to the presence of hydro conduits, the pier location was re-evaluated. Parks Canada confirms the agreement met at FAC Meeting #9 that the bridge will be designed such that the piers will be integrated into, as an extension of, reconstructed canal walls on their existing alignment. This concept will be further refined in the detailed design phase.

As this section of the canal walls will form part of the new bridge structure, a Transfer of Administration and Control from Her Majesty the Queen in right of Canada to Her Majesty the Queen in right of Ontario will be required following bridge construction to transfer ownership of affected canal walls and associated lands to the Province of Ontario.

Revised Construction Methodology
The original construction staging plan proposed construction zones on both the north and south sides of the Highway 417 bridge. The revised strategy, first presented to Parks Canada staff at FAC Meeting #10 on June 24, 2020, proposes shifting bridge demolition and reconstruction to the north of the existing crossing. As communicated in its letter to the MTO on January 13, 2021 (see attached) Parks Canada confirms its acceptance of this modified plan.

From FAC Meeting #11, it is understood that the revised arrangement may now result in canal-side pathway and parkway closures of up to 90 weeks in duration. While this will have a significant impact on pathway and roadway users, this extended closure and associated detour routes are not anticipated to impact operations and management of the waterway at this location.

It is understood that the impacts of construction activity on Parks Canada property is temporary and measures to mitigate risk to federal lands and assets will be further fleshed out during the detailed design phase in consultation with the Federal Advisory Committee.

It is understood that the MTO will be responsible for public engagement and communications associated with this project, including communicating any impacts to land and water-based visitors to the canal.

Coordination with Canal Wall Rehabilitation Project

Parks Canada intends to complete urgent, interim repairs to the east canal wall from Pretoria Bridge to the north side of the Highway 417 bridge in 2021-2022. The scope includes concrete repairs to a 14 metre section of wall close to Pretoria Bridge. It is understood that the Highway 417 project is not expected to proceed until at least 2025-2026. As such, at this time no immediate conflicts are anticipated with Parks Canada's program of work. However, it is anticipated that this section of wall will need to be replaced in its entirety within the next 5-10 years. Parks Canada would like to discuss the potential to integrate canal wall replacement with the bridge construction project. If this work cannot be integrated with the bridge construction project, it will have to take place following completion of the bridge.

Impacts to the Natural Environment

The construction laydown areas within the canal have the potential to obscure fish habitat during spawning/rearing seasons, thus it is advised to contact the Department of Fisheries and Oceans for project review.

The sediment in the canal cut in downtown Ottawa is known to contain a number of contaminants above guideline levels. Avoiding disturbance of the sediment should be an objective of the project and taken into account during the planning phase. For activities where disturbance is unavoidable (e.g. removal of rock material) a plan must be in place to minimize disturbance and prevent migration of contaminants into adjacent areas. This information should also feed into the development of health & safety plans. The following documents provide details on sediment contamination and can be made available upon request:

Golder, 2017. Sediment and Surface Water Assessment - Factual Report, Ottawa Wall Repairs Rideau Canal, Ottawa, Ontario.

Golder, 2017. Environmental Management Planning Considerations, Ottawa Wall Repairs, Rideau Canal, Ottawa, Ontario.

Parks Canada, 2018. Mitigations from the Ottawa Walls (Echo Drive) Basic Impact Assessment.

Turbidity control must in place throughout the period of in-water work. Activities causing turbidity or release of sediment will comply with the CCME Canadian Water Quality Guidelines for the Protection of Aquatic Life - Total Particulate Matter (see https://ccme.ca/en/res/total-particulate-matter-en-canadian-water-quality-guidelines-for-the-protection-of-aquatic-life.pdf).

The project area is within a critical habitat polygon for Blanding's Turtle (Endangered under SARA). The upland areas do not have the biophysical attributes to support Blanding's Turtle, however the canal itself may be used for movement of individual turtles. An aim of the project should be to avoid altering the seasonal timing of water level drawdown / increases in order to avoid potential negative effects.

Permits

As previously noted, bridge construction will be subject to an in-water work permit pursuant to the Historic Canals Regulations under the Department of Transport Act, and a Historic Canals Authorization, which will outline the conditions of the authorization, and which will be taken from the approved mitigation measures contained in the approved Environmental Assessment Study. Parks Canada looks forward to providing comments on this document once a draft is circulated.

Additionally, a real estate agreement with Parks Canada for the temporary use of federal property during the period of demolition and construction will be required.

The applicable in-water work restriction period has changed to begin on January 1, thus no in-water works are permitted during the fish spawning season from January 1 – June 30 of any given year.

I hope this letter will be helpful to you and your team and we look forward to continuing to work with you as the study progresses to achieve a well-integrated and high quality bridge design.
If you have any further questions or wish to discuss the feedback in greater detail, please do not hesitate to contact my office.

Yours sincerely,



David Britton
Director, Ontario Waterways

CC: Peter Freure, Ministry of Transportation
Chris Meek, National Capital Commission

Ministry of Citizenship and Multiculturalism

Heritage Branch
400 University Ave.
5th Floor
Toronto ON M7A 2E7
Tel.: 613.242.3743

Ministère des Affaires civiques et du Multiculturalisme

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Ontario

December 2, 2022 Email Only

Steve Taylor P.Eng
President
509 Talbot Street
London, ON N6A 2S5
stevenj.taylor@bteng.ca

MCM File	**:**	**0007152**
Proponent	**:**	**Ministry of Transportation**
Subject	**:**	**Notice of Public Information Centre No. 3**
Project	**:**	**Ottawa Queensway Downtown Bridges EA Metcalfe Street to Main Street (GWP 4170-13-00)**
Location	**:**	**City of Ottawa**

Dear Steve Taylor:

Thank you for notifying us of the Public Information Centre (PIC) and making the presentation available for our review and comment.

Please note that the responsibility for administration of the *Ontario Heritage Act* and matters related to cultural heritage recently transferred from the Ministry of Tourism, Culture and Sport (MTCS) to the Ministry of Citizenship and Multiculturalism (MCM). Individual staff roles and contact information remain unchanged. Please continue to send any notices, report and/or documentation to both Karla Barboza and myself.

MCM's interest in this Environmental Assessment (EA) project relates to its mandate of conserving Ontario's cultural heritage, which includes:

- archaeological resources, including land and marine;
- built heritage resources, including bridges and monuments; and,
- cultural heritage landscapes.

Under the Class Environmental Assessment for Provincial Transportation Facilities, proponents are required to:

- identify existing environmental conditions and sensitivities,
- identify potential environmental impacts; and
- describe proposed measures to mitigate potential negative impacts.

Project Summary
The Ontario Ministry of Transportation (MTO) has retained BT Engineering Inc. (BTE) to undertake a preliminary design and environmental assessment study for the rehabilitation and /or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study is following the Class Environmental Assessment for Provincial Transportation Facilities (2000) (Class EA) planning process for a Group "B" project, with the opportunity for external agency and public consultation throughout the project.

Provincial Heritage Properties
Please note that the *Standards and Guidelines for Conservation of Provincial Heritage Properties* (S&G), prepared pursuant to Section 25.2 of the *Ontario Heritage Act* (*OHA*), came into effect on July 1, 2010. All Ontario government ministries and public bodies that are prescribed under Ontario Regulation 157/10 must comply with the S&Gs. They apply to property that is owned or controlled by the Crown in right of Ontario or by a prescribed public body.

Comments
We have reviewed the information materials provided as part of the PIC No. 3 and have the following comments and recommendations:

Archaeological Resources
Slide 31 (Effects and Mitigation – Changes Since PIC No.2) – It is indicated that a Stage 1 archaeological assessment was undertaken as part of preliminary design. To assist us in tracking archaeological reports, please provide us with the Stage 1 archaeological assessment's Project Information Form (PIF) number.

The results of the AA will be summarized in the Transportation Environmental Study Report (TESR), i.e. the Executive Summary of each AA report provides a brief summary of the work completed and the recommendations for next steps, whether for further archaeological assessment, in which case the report will include a map that identifies those areas, or for no further assessment. The EA report must also include clear commitments to undertake any further AA stages recommended, and a timeline for their completion.

Built Heritage Resources and Cultural Heritage Landscapes
Slide 31 (Effects and Mitigation – Changes Since PIC No.2) – It is indicated that a Cultural Heritage Evaluation Report (CHER) will be undertaken for 60 Main Steet. The CHER should be submitted to MCM for review and comment prior to the completion of the TESR.

For portions of the Study area which have not be previously screened or assessed, including any temporary roads, detours or work areas associated with the project, MTO's *Environmental Guide for Built Heritage and Cultural Heritage Landscape* (2007) and *Ontario Heritage Bridge Guidelines for Provincially Owned Bridges* as well as this Ministry's *Criteria for Evaluating Potential for Built Heritage Resources and Cultural Heritage Landscapes* can assist you to determine if a Cultural Heritage Assessment Report, Cultural Heritage Evaluation Report and/or Heritage Impact Assessment is needed.

To determine whether this undertaking may impact on (recognized or potential) heritage bridges, Section 3.0 of the Ontario Heritage Bridge Guidelines (MTO, Interim January 2008) is of assistance. Should a structure meet any of the conditions from that section, a cultural heritage evaluation report (CHER) will be undertaken by a qualified person. Once a bridge has been evaluated, a copy of the Cultural Heritage Evaluation Report (CHER) will be given to the MTO Heritage Bridge Committee for review.

If the structure is found to be of cultural heritage value or interest and the structure may be impacted by the proposed undertaking, then a Heritage Impact Assessment will be undertaken by a qualified person. The report(s) should be completed during the planning phase and sent to MCM.

Technical cultural heritage studies will be undertaken by a qualified person who has expertise, recent experience and knowledge relevant to the type of cultural heritage resources being considered and the nature of the project being proposed.

Community input should be sought to identify locally recognized and potential cultural heritage resources. Sources include, but are not limited to, municipal heritage committees, historical societies and other local heritage organizations.

Cultural heritage resources are often of critical importance to Indigenous communities. Indigenous communities may have knowledge that can contribute to the identification of cultural heritage resources, and we suggest that any engagement with Indigenous communities includes a discussion about known or potential cultural heritage resources that are of value to them.

Environmental Assessment Reporting
The findings of technical cultural heritage studies should be summarized as part of the Transportation Environmental Study Report's discussion of existing conditions, impact assessment, mitigation and future commitments. Commitments for further studies should clearly state what is to be done, who is responsible for implementation, and when. Recommendations from the technical cultural heritage studies described above should be reflected as commitments in the EA report.

Thank you for consulting MCM on this project and please continue to do so throughout the EA process. If you have any questions or require clarification, please do not hesitate to contact myself.

Sincerely,

Joseph Harvey
Heritage Planner
Heritage Planning Unit
Joseph.harvey@ontario.ca

Copied to: Project email, BT Engineering
Ken Rogers, Senior Project Engineer, MTO

It is the sole responsibility of proponents to ensure that any information and documentation submitted as part of their EA report or file is accurate. The Ministry of Citizenship and Multiculturalism (MCM) makes no representation or warranty as to the completeness, accuracy or quality of the any checklists, reports or supporting documentation submitted as part of the EA process, and in no way shall MCM be liable for any harm, damages, costs, expenses, losses, claims or actions that may result if any checklists, reports or supporting documents are discovered to be inaccurate, incomplete, misleading or fraudulent.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48(1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out an archaeological assessment, in compliance with Section 48(1) of the *Ontario Heritage Act*.

The *Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33* requires that any person discovering human remains must cease all activities immediately and notify the police or coroner. If the coroner does not suspect foul play in the disposition of the remains, in accordance with *Ontario Regulation 30/11* the coroner shall notify the Registrar, Ontario Ministry of Public and Business Service Delivery, which administers provisions of that Act related to burial sites. In situations where human remains are associated with archaeological resources, the Ministry of Citizenship and Multiculturalism should also be notified (at archaeology@ontario.ca) to ensure that the archaeological site is not subject to unlicensed alterations which would be a contravention of the *Ontario Heritage Act*.

210 Gloucester Street,
Suite 101, Ottawa,
Ottawa, Ontario
K2P 2K4
May 23, 2023

Ken Rogers, Senior Project Engineer
Ministry of Transportation
777 Bay Street
Toronto, ON M7A 1Z8

Dear Ken Rogers,

I am writing on behalf of the Centretown Community Association to share our views on the upcoming replacement of the 417 bridge spanning both parkways on either side of the Rideau Canal (Queen Elizabeth Drive and Colonel By Drive).

Many of us have already experienced issues with the bridge replacements at Bronson, Percy and Rochester. The detours resulted in significant traffic jams that reduced air quality and emergency response time while making it difficult to get to work or school on time.

In our view, the 417 Bridge Replacement will have an even more consequential impact on traffic flow, carbon emissions and the movement of people throughout Centretown, because the Parkways are an important artery for high profile tourists attractions (like the Tulip Festival, the Jazz Festival and Winterlude) and access to the airport for people living in Centretown and the East End. Rather than closing the parkways resulting in considerable detours for up to 90 weeks so that the bridge can be constructed, we have two requests:

1. **The length of time of the detours must be significantly reduced; and**
2. **There must be continuous, 24/7 bike and pedestrian access along the Canal alignment throughout the construction period (except for the final 3 days when the bridge is moved into place).**

Finally, we are surprised at the lack of public consultation on this important issue and would like to request that consideration be given to developing and implementing a pro-active consultation strategy that involves all stakeholders including people living in Centretown, businesses, and commuters.

We look forward to receiving your response to our concerns and requests.

Sincerely,

Mary Huang
President
Centretown Community Association

Appendix A-6

Final Study Design

BT ENGINEERING

Ottawa Queensway Downtown Bridges Preliminary Design and Environmental Assessment Study for Rehabilitation/Replacement GWP 4170-13-00

Study Design

FINAL





Revision 2: January 3, 2018

BT Eng Project 17-010

Revision History

Revision	Date	Description of Major Change
1	September 11, 2017	Section 5.0 Alternatives to the Undertaking – Planning Alternatives: provided clarification Figure 3: Broader Study Area amended
2	January 3, 2018	Finalize document

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Glossary of Terms

1.0 Introduction

This Study Design Report is the initial public document for the Ministry of Transportation (MTO) Class Environmental Assessment for Provincial Transportation Facilities (MTO Class EA) for the rehabilitation or replacement of 7 bridges on the Queensway from Metcalfe Street easterly to Main Street. The 7 bridges include 4 locations at Metcalfe Street, Elgin Street, Rideau Canal (including crossings of Queen Elizabeth Drive and Colonel By Drive) and Main Street. The Study Design Report presents: the proposed problem and opportunity statement; a blueprint of the proposed Work Plan and Study Process for the pending transportation project to meet the requirements of the Ontario and Canadian Environmental Assessment Acts; proposed alternatives to the undertaking; proposed alternative methods and the proposed evaluation process; proposed public, agency and indigenous peoples consultation; and proposed documentation and post study steps. The report outlines the key activities required to complete the study and the EA preliminary planning and design process.

The draft Study Design will be circulated at the initiation of the study to various agencies, and will be presented to the study's Municipal Technical Advisory Committee (MTAC), Federal Advisory Committee (FAC) and the general public by posting the document on the study's website and at the first Public Information Centre (PIC). The early distribution of this draft report is intended to solicit early input on the planning process. Following the first PIC, the draft Study Design will be finalized and posted on the study website.

This Study will be completed as a Group B project by the MTO Eastern Region under the MTO Class EA. The final documentation of the Environmental Assessment will be a Transportation Environmental Study Report (TESR).

Included in this document is a Consultation program for obtaining input from potentially interested and affected persons during the planning of this project. Consultation is used to identify interested persons, government agencies, and Indigenous Peoples groups, and establishes how they can be engaged in the project. The Consultation program is a process by which stakeholders can be identified early in the decision-making process.

1.1 Study Areas

Initiated by MTO in April 2017, this project involves an MTO EA and preliminary design for the rehabilitation/replacement of 7 structures at 4 sites on the Ottawa Queensway within the urban core of the City of Ottawa. The project location is illustrated in **Figure 1**. The Study Area and bridge sites along Highway 417 (Ottawa Queensway) extend from Metcalfe Street to Main Street and are illustrated on **Figure 2**.

The study area has been divided to allow for three levels of analysis. The "Broader Study Area" includes the geographic area of the City where temporary short term offsite detour routes are being considered for freeway closures. **Figure 3** illustrates the Broader Study Area. The

"Immediate Study Area" will include a focus on the Queensway Corridor generally within or adjacent to the MTO right-of-way that will include the bridge alternatives and staging areas for alternative construction staging sites. The "Local Study Areas" will focus on the bridges at each individual site location. **Figure 2** illustrates the Immediate Study Area as well as the Local Study Areas.

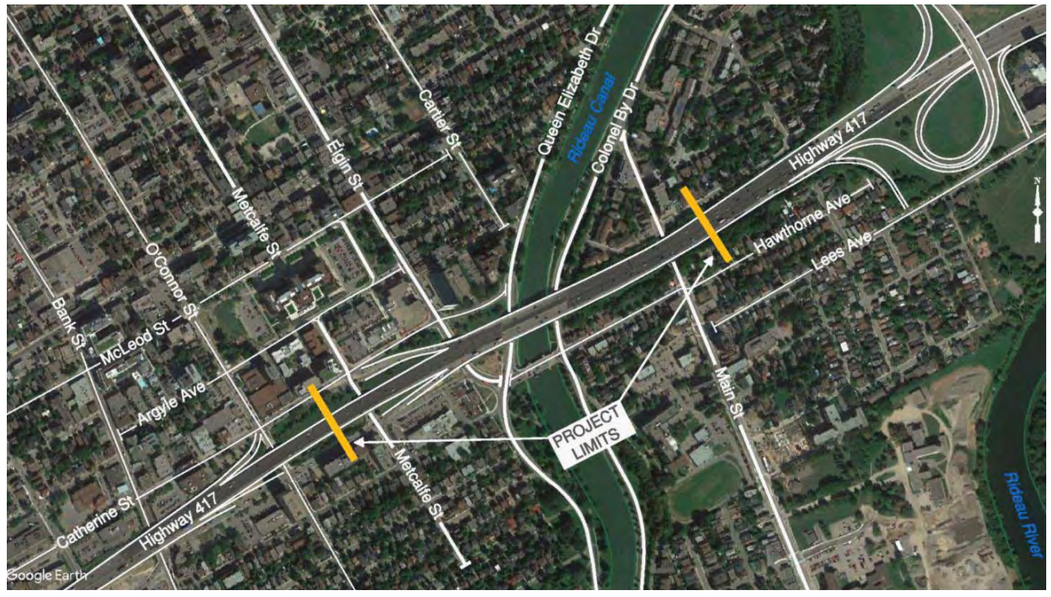

Figure 1: Project Location

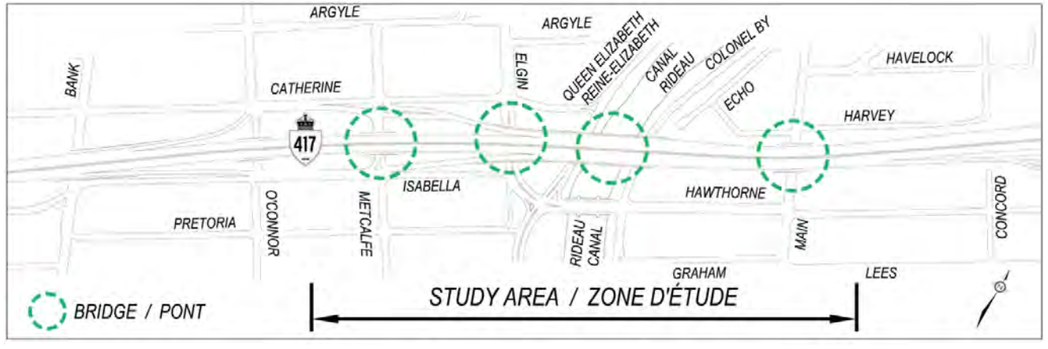

Figure 2: Study Area

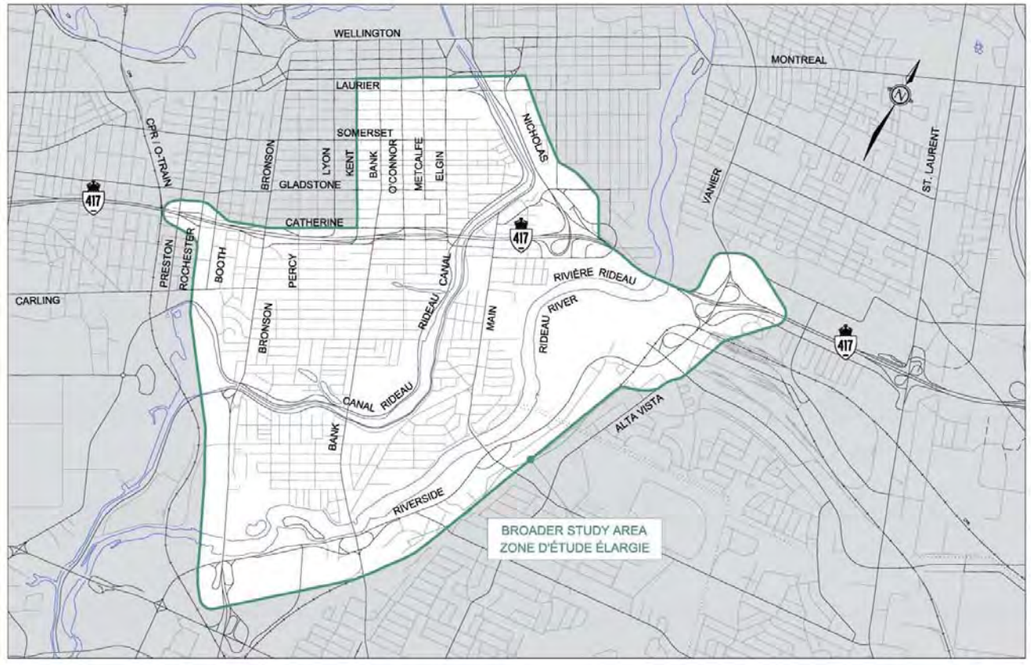

Figure 3: Broader Study Area

2.0 Need and Justification

2.1 Background Queensway Studies

Other studies that have been completed and their relevance to this study include:

- 2007: Highway 417 (Ottawa Queensway) from Highway 416 easterly to Anderson Road Environmental Assessment and Preliminary Design Study (GWP 663-930-00) – this EA defined the long term vision for the Queensway improvements including widening of the freeway for operational and safety improvements. As the “planning” phase of the Queensway corridor, this study did not discuss site-specific bridge management plans.
- 2016: Ottawa Queensway Mid-town Bridges from Holland Avenue to O’Connor Street, Environmental Assessment and Preliminary Design Study (GWP 4075-11-00) – this EA defined bridge management plans for rehabilitation and replacement projects to the west of the current study area. The current EA is now reviewing the structural bridge management plans required for the next 7 structures adjacent to the Midtown bridges project.

2.2 Problem and Opportunity Statement

Problem:

The seven (7) Ottawa Queensway Downtown bridges date from the original Queensway construction from 1959 to 1968. The Queensway Rideau Canal Bridge is nearing the end of its service life. Unlike the 23 Mid-town bridges to the west, these bridges do not have individual or coordinated bridge management plans for rehabilitation or replacement to ensure the continued safe operation of the highway for the future planning horizon.

Opportunity:

- Establish bridge management plans for the 7 Queensway bridges from Main Street to Metcalfe Street, continuing the MTO program of establishing bridge management plans from west to east along the Queensway.
- Coordinate the bridge management plans for the 7 bridges based on design, traffic staging and construction considerations.

2.3 Queensway Downtown Bridges

The Ottawa Queensway (Highway 417) plays a major role in connecting the western, central and eastern Ottawa regions. With over 163,000 vehicles passing through this section of highway per day, the bridges under consideration in the Study are key components of MTO’s traffic infrastructure. Therefore, the reliability and safety of these structures are of paramount importance to the travelling public. Over the past several years investigations conducted by the MTO have identified continued deterioration of the structures resulting in the need to identify future bridge management plans. The bridge management plans may be either rehabilitation or replacement projects for the bridges.

The Rideau Canal Bridge, which spans over Queen Elizabeth Drive, the Rideau Canal and Colonel By Drive, has been identified by the MTO Structural Section as a candidate for structure replacement. Constructed in 1963 and having undergone a rehabilitation program in 1985, the structure is approaching the end of its service life (see **Photo 1**). Inspections completed in May of 2016, using the Ontario Bridge Management System (OBMS), Ontario Structure Inspection Manual, indicated that both the Queensway eastbound and westbound Rideau Canal structures require remedial works.



Photo 1: Deterioration of Beam Girders and Piers

The Metcalfe Street overpass (**Photo 2**) was initially built in 1965 and has undergone one major and two minor rehabilitations since 1985.



Photo 2: Metcalfe Street Overpass

The Elgin Street Overpass (**Photo 3**) consists of two structures. The eastbound structure was built in 1965 and the westbound in 1963. The two structures were rehabilitated in 1985 and again in1999. In 2017 repairs were made to the barrier walls and fascia.



Photo 3: Elgin Street Overpass

The Main Street Overpass (**Photo 4**) consists of two structures. The eastbound lane structure was built in 1963, and the westbound in 1959. Both structures were included in Contract 85-64 which completed major rehabilitation on the two structures. The aging bridges were subject to recent inspections that identified the need for replacement.



Photo 4: Main Street Overpass

Key Study Issues/Opportunities

Key issues/opportunities which the study will resolve include:

1. Traffic management of the Ottawa Queensway during any rehabilitation or replacement project to minimize travel delays.
2. The Rideau Canal is a UNESCO World Heritage Site and any project must protect the cultural heritage canal infrastructure. A context sensitive design solution may be considered subject to input from the cultural heritage assessment, bridge design alternatives and agency and public input.
3. Pedestrian and cycling travel through the corridor.
4. Accommodating active modes of transportation along the canal including pedestrians, skating and cyclists.
5. Requirements for construction lay-down areas.

6. Potential business disruptions from short term road closures and lane reductions for construction.
7. Fisheries impacts
8. Duration of construction
9. Rideau Canal bridge aesthetics
10. Lighting

The study will document the up-to-date need and justification for the bridge project(s), the structural management plan for the 7 bridges and define the implementation plan for construction including mitigation plans for all temporary works. These works may be planned as successive projects ranging from initial holding strategies to rehabilitation to ultimate replacement of the bridges; or proceeding directly to short term replacement projects where structural evaluations and condition surveys recommend this action.

3.0 Proposed Study Approach

The rehabilitation/replacement of these 7 structures will follow the Environmental Assessment process for Group 'B' projects as outlined in the MTO Class EA. This Study Design was circulated to external agencies and was posted on the study web site at the study initiation. The Study Design presents an initial description of the problem, design alternatives to be considered and the environmental work program. This approach provides early input from agencies and the public, and can allow agencies to comment on the process and technical work programs at the Study initiation. This document will continue to be described as a draft report, being updated and amended as comments are received by the public and agencies. It will be finalized after PIC No. 1 and posted as final on the study's web site.

The Planning and Design Process for a Provincial Class EA Group B project is illustrated in detail in **Figure 4**.

3.1 Study Web Site

The EA study will include the use of a web site to post information and allow the public to monitor the study progress. The Web site is: **www.queenswaydowntownbridges.com.** This tool will be used to post the Draft Study Design, collect comments and post the final Study Design Report.

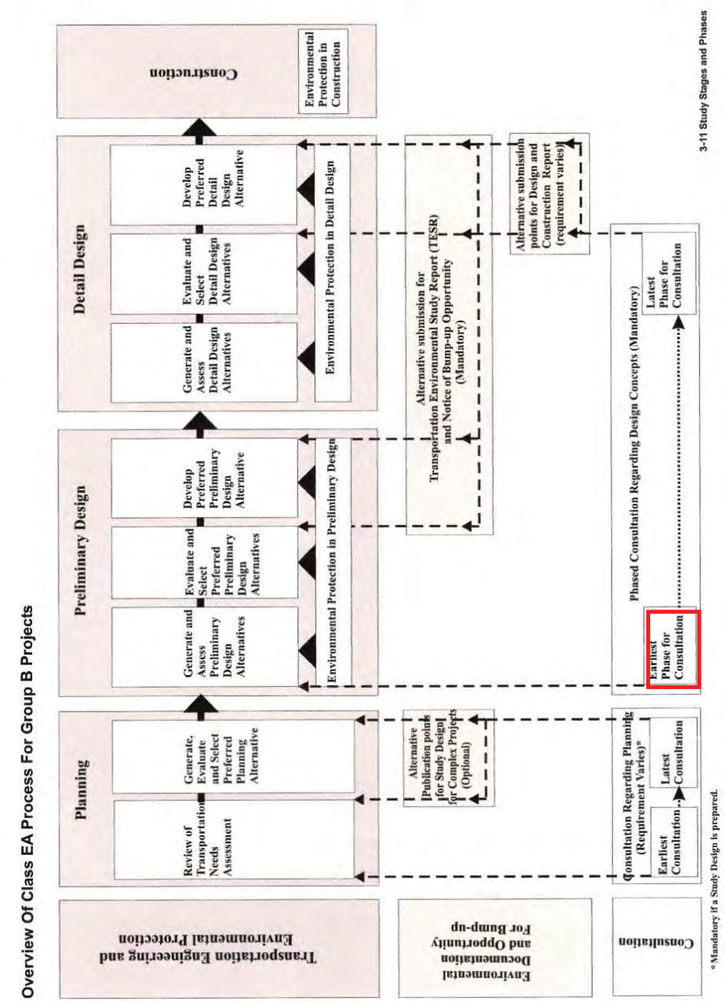

Figure 4: Provincial Class Group B Planning and Design Process

Study process is here
Page 10

4.0 Proposed Study Process

4.1 Proposed Public Consultation

The proposed public consultation process will allow an opportunity to involve all potential stakeholders. This will include, but is not necessarily limited to the public, private property owners, businesses and interest groups. It is essential that there be involvement and interaction with regulatory agencies.

Study commencement flyers were hand delivered to every property within the Immediate Study Area, to inform the public of the study and provide contact information. A contact list has been created to keep interested property owners informed of each subsequent stage of the study.

Formal public consultation in the form of 2 Public Information Centres (PICs) will be carried out at a local and accessible location. Bilingual staff will be present at both PICs.

The consultation program includes regular Project Web Site updates, including selected PIC materials and Frequently Asked Questions (FAQs) that will be updated as required to respond to study developments and emerging issues or concerns.

With respect to public involvement, the work program proposes the following key elements:

- Study Commencement Notice, PIC notices and TESR Submission Notice in local papers and mailed to agencies, Indigenous Peoples and Utilities
- Posting the draft Study Design online on the study website
- Maintaining and updating a study mailing list
- PIC No. 1 will present the project goals, problem and opportunity statement, draft Study Design (Work Plan), assessment of Alternative Planning Solutions, environmental inventories, traffic analysis, assessment of Alternative Planning Solutions, design criteria for roads and structure under study, preliminary coarse screening of Design Alternatives (alignment, cross section and structure types) and seek public/agency input. A session will be scheduled to present information to agencies and elected officials in advance of the public.
- PIC No. 2 will present the evaluation of alternatives and a Technically Preferred Plan for each bridge site and seek public/agency input. A session will be scheduled to present information to agencies and elected officials in advance of the public.

4.2 Proposed Municipal and Agency Consultation

Municipal and Federal consultation will be maintained during the study through a MTAC and a FAC. Meetings will be held at key milestones. Municipal participation will include as a minimum City of Ottawa departments and Ottawa Police. Federal participation will include as a minimum Parks Canada and the National Capital Commission (NCC).

4.3 Proposed External Agencies and Regulatory Agencies

The following agencies will be kept on a study mailing list, which will be updated and maintained throughout the study:

- Ministry of Aboriginal Affairs, Aboriginal Relations and Ministry Partnerships Division
- Ministry of the Environment and Climate Change (Eastern Region)
- Ministry of Environment and Climate Change (MOECC)
- Ministry of Agriculture and Food
- Ontario Ministry of Tourism, Culture and Sport, Heritage Operations Unit
- Ministry of Natural Resources and Forestry
- Ministry of Tourism, Culture and Sport
- Ministry of Economic Development and Innovation, Ottawa Office
- Ministry of Municipal Affairs – Eastern Region
- Ministry of Community and Social Services – Eastern Region
- Rideau Valley Conservation Authority
- Ontario Provincial Police (Ottawa Detachment)
- City of Ottawa
- Ottawa-Carleton District School Board and Catholic School Board
- Conseil Des Ecoles Publiques De L'Est De L'Ontario
- Conseil Des Ecoles Catholiques De Langue Francaise Du Centre Est -Consortium de transport scolaire d'Ottawa

4.4 Proposed Community Interest Groups

The following community interest groups will be kept on a study mailing list, which will be updated and maintained throughout the study:

- Ottawa Chamber of Commerce
- Ottawa Tourism
- Invest Ottawa
- Ontario Trucking Association
- CAA Ontario
- Ontario East Economic Development Commission
- Transport Action Ontario
- Ottawa Real Estate Board
- Action Sandy Hill
- Bank Street BIA

- Centretown Citizens' Community Association
- Citizens for Safe Cycling
- City Centre Coalition
- Community Activities Group of Old Ottawa East
- Dalhousie Community Association
- Dow's Lake Residents' Association
- Downtown Rideau BIA
- Ecology Ottawa
- Federation of Citizens' Associations of Ottawa-Carleton
- Glebe Annex Community Association
- Glebe BIA
- Glebe Community Association
- Glebe Report
- Lowertown Community Association
- Mainstreeter
- Old Ottawa South Community Association
- Ottawa Bicycle Club
- Ottawa Children's Garden
- Ottawa East Community Association
- Ottawa Riverkeeper
- Preston Street BIA
- Rideau River Residence Association
- Somerset Street Chinatown BIA
- Somerset Village BIA
- Sustainable Living Ottawa East
- The Centretown BUZZ
- Walk Ottawa

4.5 Proposed Utilities

- Allstream
- Atria Networks
- Bell
- Bell (360 Networks)
- Enbridge Gas Distribution

- Hydro One Distribution
- Hydro One Transmission
- Hydro Ottawa
- P2P Fibre
- Rogers
- Telus
- Videotron
- City of Ottawa, UCC Central Registry
- CP Rail
- Capital Railway (O-Train)

4.6 Proposed Indigenous Peoples Consultation

Governments (and the private sector) have a constitutional duty to consult aboriginal groups. Consultation will be initiated (through MTO staff) at the beginning of the project, and Indigenous Peoples interests will be carefully addressed as part of the consultation program. We propose this will include provision of the initial Study Design and offers to meet during the study. This study will include liaison with Ministry of Indigenous Relations and Reconciliation and Indigenous and Northern Affairs Canada in identifying the Indigenous Peoples that require notification and involvement. As starting point this study will initially consult with the following:

- Aboriginal Affairs and Northern Development Canada, Gatineau, ON
- Ministry of Aboriginal Affairs, Toronto, ON
- Algonquins of Pikwàkanagàn, Golden Lake, ON
- Algonquins of Ontario Consultation Office, Pembroke, ON
- Kinounchepinini Algonquin First Nation, Petawawa, ON
- Kijicho Manito Madaouskarin – Anishinaabe Baptiste, Maynooth, ON
- Bonnechere Algonquins First Nation, Renfrew, ON
- Algonquins of Greater Golden Lake First Nation, Killaloe, ON
- Mattawa / North Bay Algonquin First Nation, Mattawa, ON
- Ottawa, Wendover, ON
- Shabot Obaadjiwan First Nation, Sharbot Lake, ON
- Snimikobi Algonquin First Nation, Eganville, ON
- Whitney and Area Algonquin Community, Whitney, ON
- Chippewas of Georgina Island, Sutton West, ON
- Mississaugas of the New Credit First Nation, Hagersville, ON
- Mississaugas of Scugog Island First Nation, Port Perry, ON

- Beausoleil First Nation, Christian Island, ON
- Alderville First Nation, Alderville, ON
- Hiawatha First Nation, Hiawatha, ON
- Curve Lake First Nation, Barrie, ON
- Moose Deer Point First Nation, Mactier, ON
- Ottawa Region Métis Council, Ottawa, ON
- Mohawk Council of Akwesasne , Cornwall, ON
- Métis Nation of Ontario, Ottawa, ON

5.0 Alternatives to the Undertaking – Planning Alternatives

Alternatives to the Undertaking represent alternative ways or methods of addressing the Problem / Opportunity Statement specific to this study. In this study, the focus is on four bridge locations. These reflect different strategies and include the “Do Nothing” approach (maintaining the status quo but not addressing the Problem / Opportunity Statement).

Following the assessment of Alternatives to the Undertaking, those alternatives judged to address the Problem / Opportunity Statement will be carried forward and will form the Recommended Planning Solution or “Transportation Undertaking”. The selected “Transportation Undertaking” will be deemed to address the Problem / Opportunity Statement required to plan for the safety of the travelling public on these bridges and provide a cost effective bridge management plan, while providing the best overall balance between the structural and transportation engineering objectives, life cycle costs, and other environmental, cultural, socio-economic, and land use planning objectives.

In developing “Preliminary Design” Alternative Planning Solutions (Alternatives to the Undertaking), a number of general principles and objectives are being considered, that take into consideration the location, type and number of bridge sites. These include:

- Satisfy existing code requirements of the bridges;
- Provide for the efficient movement of people and goods during the staging of the projects by minimizing or avoiding long term multi-lane closures on the Queensway;
- Ensure the safety of the travelling public;
- Ensure the technical feasibility of construction, operation and maintenance;
- Minimize the environmental impacts and the use of non-renewable natural resources such as aggregates;
- Minimize the number of disruptions to the travelling public by grouping of projects together in order that they occur in the same time period; and
- Consider the linkage of the communities divided by the Queensway and context sensitive design solutions that may improve the aesthetics of these bridges as viewed from the streets and avenues.

It should be noted that the assessment of broader transportation strategies, such as mass transit initiatives or other transportation modes, are more appropriately considered for larger network links in the overall provincial transportation system and were considered in the 2007 EA Study: G.W.P. Highway 417 (Ottawa Queensway) from Highway 416 to Anderson Road. This Study evaluated 10 Alternatives to the Undertaking and recommended three: do nothing; improve existing highway with strategic widening and intersection modifications; and implement transportation demand management and advanced traffic management systems for the 28 km. long Queensway corridor. They are not considered applicable for bridge management studies such as: the 2016 EA Study G.W.P. 4075-11-00 Rehabilitation/ Replacement of Ottawa Mid-town Bridges from Holland Avenue to O’Connor Street and the 23 bridges at 13 locations; and this study with 7 bridges at 4 locations.

The following feasible and cost/effective Preliminary Design Alternatives to the Undertaking were identified:

Alternative 1: The "Do Nothing" Alternative maintains the status quo of the existing bridges with no significant actions taken to manage aging infrastructure. This approach would accept further deterioration within the 20 year planning horizon.

Alternative 2: In accordance with the MTO Class EA, the Alternative would be new and / or improved (rehabilitated) Provincial Transportation Facilities. Since the bridge sites already exist, the Alternative could be simply referred to as "Management of Bridge Infrastructure".

Alternative 2a: Rehabilitate the existing bridges to extend their service lives including structural upgrades to meet existing seismic code requirements.

Alternative 2b: Replace the existing bridges with new structure(s).

The identified opportunities for enhanced safety and aesthetics through context sensitive design are important aspects of the project that will be considered as part of the criteria used for the evaluation of the above Alternatives to the Undertaking and through the subsequent evaluation of Alternative Methods (or Preliminary Design Alternatives). Similarly the opportunity to maintain / improve personal safety and security for users of the multi-use pathway along the Rideau Canal will be considered as part of the evaluation of the above Alternative Planning Solutions and through the subsequent evaluation of Alternative Methods.

6.0 Alternative Preliminary Design Methods and Proposed Evaluation Process

A long list of alternatives methods has been developed to address the Preliminary Design Alternatives. The proposed list is described below.

6.1 Alternative Methods

Rigid Frame Rehabilitation Alternatives (Metcalfe, Elgin and Main Streets)

The rehabilitation alternative will focus on either conventional or rapid repair in areas of high deterioration as illustrated in **Photo 5**. The rehabilitation alternative can include new facades as part of the rehabilitation works as illustrated in **Figure 5**. Conventional rehab uses a staged construction approach with medium/long term lane closures while rapid rehab uses short term lane closures that may involve full lane closures.



Photo 5: Typical deck scarifying and local deck removal from additional deteriorated areas in advance of new overlay (Reference TAC Guide for Bridge Repair and Rehabilitation Nov 2006)



Figure 5: Typical Rigid Frame Bridge Façade Context Sensitive Design Concept (with Potential Transparent Noise Barrier Option)

Rigid Frame Replacement Alternatives

- Conventional staged replacement (constructed in place)
- Rapid replacement (new rigid frame constructed off-site and transported into place during short term highway closure)

See **Photo 6** illustrating rapid replacement transportation using Self Propelled Mobile Transporters (SPMT's) to transport the new bridge from an off-site bridge farm to the replacement location.



Photo 6: Cornwall Bridge over Highway 401

Rideau Canal Bridge Replacement Alternatives

Preliminary candidate replacement alternatives for the Rideau Canal Bridge include:

- Alternative A: Replacement Girder on Existing Piers
- Alternative B: Replacement Girder on New Piers with Re-aligned Canal Walls
- Alternative C: Extrados Concrete on New Piers with Re-aligned Canal Walls
- Alternative D: Replacement Girder Bridge on New Piers Behind Existing Concrete Canal Walls
- Alternative E: Single Span Replacement Structure

All replacement alternatives for the structures will consider reducing the negative visual intrusion of the existing structure. The possible restoration of the original Rideau Canal wall alignment (the walls were historically relocated outward to their current locations) in combination with repositioning of the piers behind the canal wall will be considered. Structure types to be considered for the three span alternative include steel box girder (haunched or prismatic), concrete girder and extrados concrete box girder. Single span alternatives, spanning the full crossing including adjacent roadways, include vertical and basketweave tied-arch structures. Additional replacement alternatives may be added during the assessment of the study as appropriate. **Figure 6** to **Figure 10** illustrate the proposed structural replacement alternatives for the Rideau Canal.

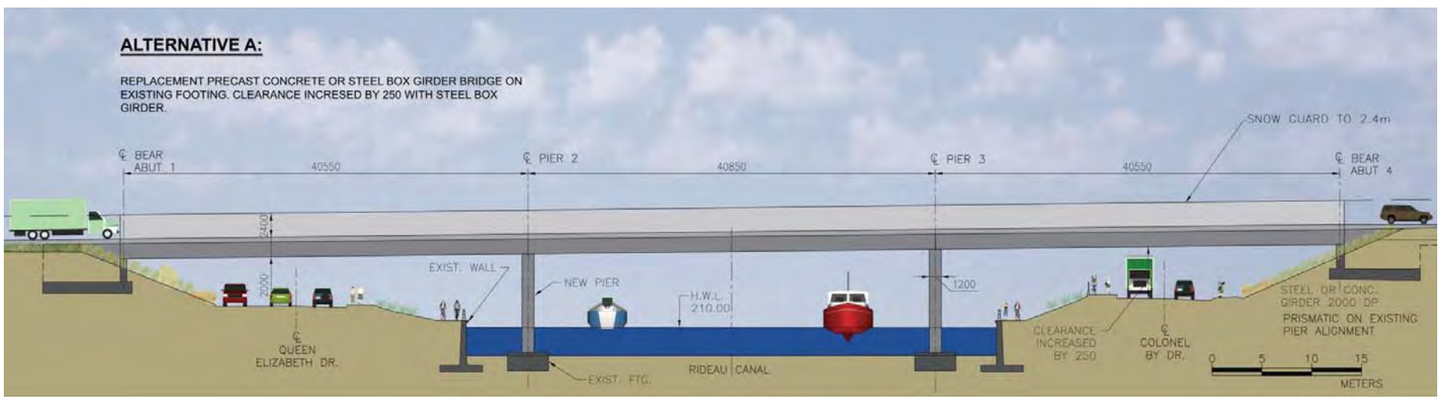

Figure 6: Rideau Canal Replacement Alternative A

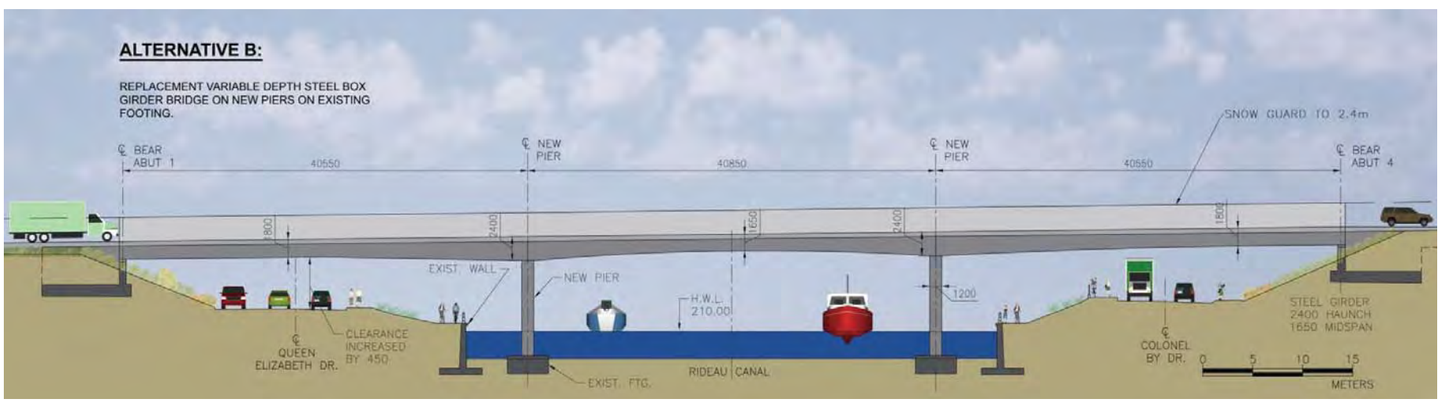

Figure 7: Rideau Canal Replacement Alternative B

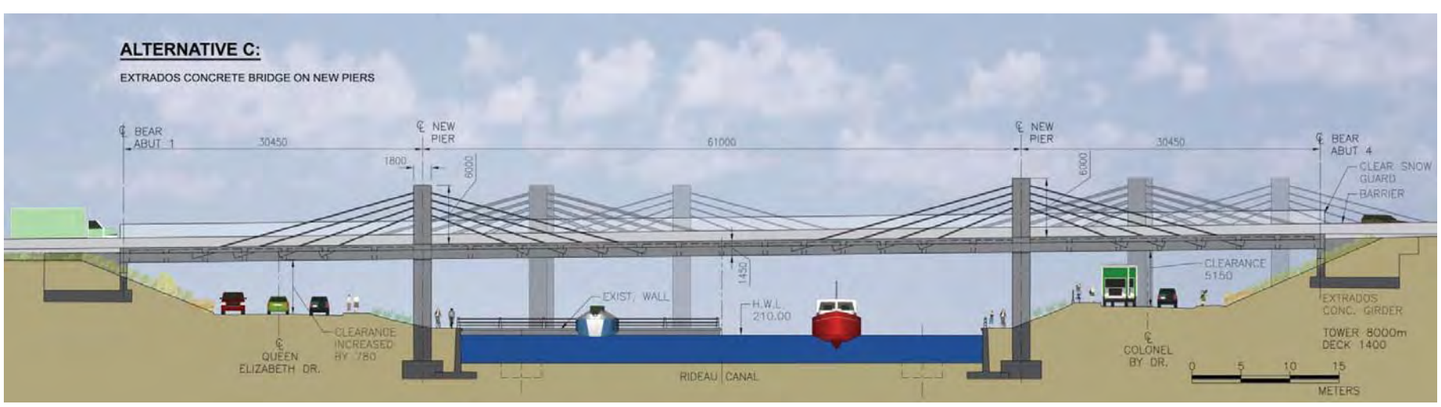

Figure 8: Rideau Canal Replacement Alternative C

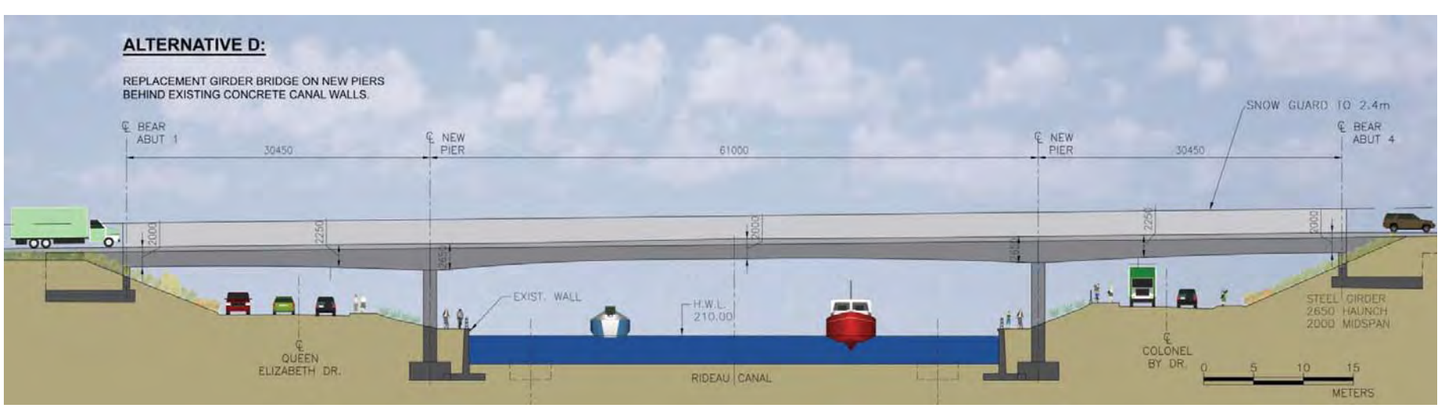

Figure 9: Rideau Canal Replacement Alternative D

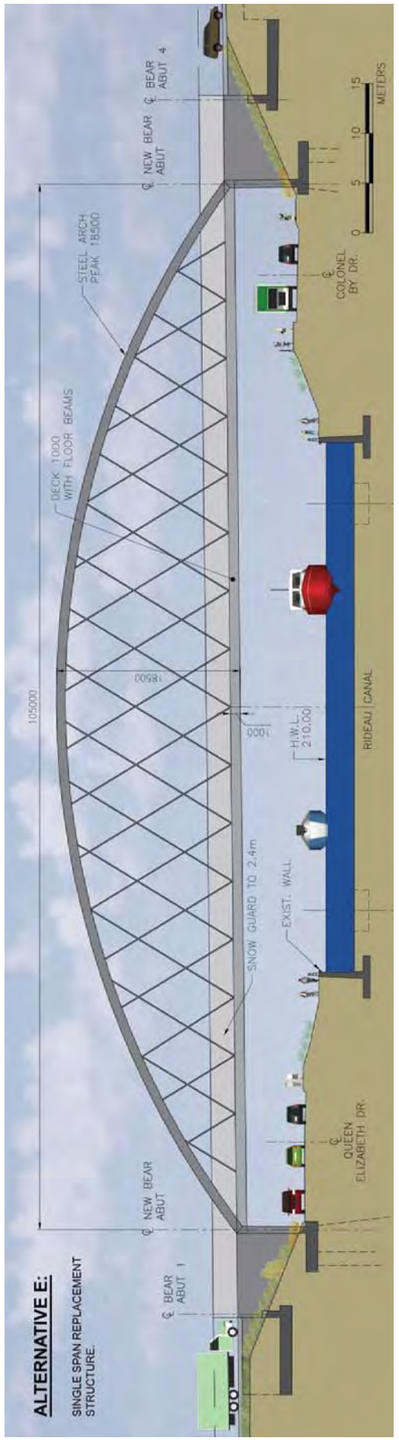

Figure 10: Rideau Canal Replacement Alternative E

6.2 Proposed Evaluation Process

For the evaluation of preliminary design alternatives, the study will utilize a formal quantitative evaluation methodology described as the Multi Attribute Trade-off System (MATS). The use of this multi-criteria decision analysis involves scoring each alternative on each criterion and then combining the scores using a system of weights to yield an overall ranking of each option.

The evaluation approach is based on the MATS methodology which focuses on the differences between the alternatives, addresses the complexity of the base data collected and provides a traceable decision-making process. In addition, the method allows sensitivity tests to be performed because of the matrix configuration of the assessment and the use of numerical scores to measure the impact of the alternatives. This approach is consistent with the MTO and MOECC practices for the complex evaluation of alternatives. Using the MATS methodology, overall scores are assigned to each alternative and the option with the highest score is selected as the technically preferred alternative. This approach allows a rigorous comparison of the trade-offs of alternatives and traceability in the decision-making process.

The steps shown below will be undertaken to arrive at an overall score for each alternative.

- Development of Evaluation Criteria (coarse screening a long list of criteria to develop a short list of criteria to carry forward for evaluation). These factors and sub-factors are used to measure the differences between the alternatives.
- Public review (PIC No. 1)
- Development of definitions and utility functions for each sub-factor carried forward. (Data must be collected for each alternative under each sub-factor. Measurements for each alternative, under each sub-factor, are conducted using topographic plans, field surveys, numerical modelling etc.)
- Weighting of Criteria (assigning weights to each Factor and Sub-factor based on their importance to each team member's discipline or area of expertise)
- Rating Alternatives (based on Average Weights)
- Selection of Technically Preferred Alternative – Highest Ranked Alternative
- Sensitivity testing
- Public review (PIC No. 2), and
- Recommendations and presentation of a Recommended Plan.

This systematic approach is consistent with MOECC practices for the evaluation of numerous and complex alternatives. It avoids many of the pitfalls associated with qualitative assessments by using an analytical approach that measures scores based on a mathematical relationship, i.e. the degree of subjectivity by the evaluation team is minimized. This traceable process allows the

evaluation team and the public an opportunity to assess trade-offs involved in the evaluation and use of this information in the decision making process. Sample evaluation criteria include:

1. Global Evaluation Factors: Traffic and Transportation; Natural Environment; Social and Cultural Environment; Economic Environment; Land Use and Property; and Cost.
2. Local Evaluation Criteria (under global evaluation factors): Maximum peak queue length on the Queensway; temporary property impacts (during construction); loss of fish habitat; noise; built heritage resource impacts; emergency response; loss of parking; and capital cost.

7.0 Proposed Work Program

The major elements of the technical work program include the following:

Task 1: Project Start-Up

Upon initiation of the project, the Study will establish membership and meeting dates, and determine the role of the MTAC and FAC.

Task 2: Draft and Final Study Design

The Study Design Report is a document that describes, at the outset of the study, the intended approach to complete the EA assignment. The Study Design Report will help establish the foundation for all of the remaining environmental planning and public consultation processes. This draft document will be posted on the Study website at the outset of the study and sent to external agencies as a draft for public review and comment. The Study Design Consultation Plan allows the early identification of the major issues and concerns, and in addition, recognizes areas of consensus or agreement. The Study Design Report will be finalized following the first PIC.

Task 3: Information Gathering and Generation of Alternatives

The third task involves the collection and organization of the data necessary for the remaining analysis, evaluation and design activities. Activities will include:

- Assembly and preliminary review of study materials;
- Collection of background reports;
- Obtain digital mapping, photographs and associated drawings;
- Undertake the existing natural/social environmental inventories and technical investigations;
- Collection of traffic data (turning movements, ATR counts and signal timing) for the freeway, municipal and federal roads in the study area;
- Detailed bridge condition surveys of the existing bridges which will include a review of existing reports and new assessments completed as part of the study;
- Structural condition evaluations; and
- Foundation investigations

Task 4: Need and Justification

The need and justification for the necessary structural remedial action plan for the bridges will rely on updated bridge condition surveys, inspections of the existing structures and structural evaluations to determine deficiencies for repair and/or structural replacement. An initial overview of the need and justification for the study is described in **Section 2.0**.

Task 5: Inventory of Natural, Social and Cultural Environments

Environmental Impact Study: Based on a review of existing background and field data collected and communications with review agencies such as Ministry of Natural Resources and Forests (MNRF), the Study will document potential environmental sensitivities and issues relating to the natural sciences (fisheries, terrestrial, avian) resources of the study area (including nesting birds and species at risk), impacts to land use/community activities and events/recreation, traffic delays (on Highway 417 and crossing streets) considering all modes of travel, business impacts, construction noise, dust, erosion/sediment control, archaeology, potential site contamination, vegetation removal, etc. Following the collection of background and field data, analyses will be carried out for the study area. Specialists will verify the applicability and appropriate level of detail for factor specific analyses during the site investigation and inventory stage, determine the significance, and assess the impacts. The results of the environmental inventory/assessment work will be relevant environmental sensitivities, constraints, opportunities, and deficiencies, documented in Factor Specific reports which will be summarized in an Existing Conditions Map as part of the Summary of Existing Environmental Conditions Report.

Natural Sciences: A field investigation of existing environmental conditions will supplement secondary sources of information received from various sources including the Ministry of Natural Resources and Forestry, Kemptville District. The study area is an urbanized location with no native areas remaining. The natural habitat review will include a reconnaissance screening of the terrestrial habitat and focus on the fisheries resources associated with the Rideau Canal. The natural science review of the study area will focus on areas of disturbance with regard to design alternatives and staging areas.

Field studies will be conducted during an appropriate season. Investigations will be consistent with the Environmental Reference for Highway Design (2009) and Environmental Standards and Practices (2006). Should terrestrial Species at Risk (SAR) be identified or encountered in the study areas, discussions will be held with the MNRF District office to develop mitigation measures and to review the need for a potential Endangered Species Act (ESA) authorization. Terrestrial environment field investigations will document any potential risk of impacting SAR and/or their potential habitat. All activities (including field investigations) will comply with the *Endangered Species Act* and the environmental impacts will be assessed, avoided, or mitigated, and documented.

Fisheries investigations will be undertaken as per the current MNRF/DFO/MTO Fish Protocol and will focus on the 120 m section of Rideau Canal within and immediately adjacent to the study area. A fish collection licence will be obtained from MNRF. Field investigations will focus on collection of fish habitat and water quality data sufficient to determine the potential impacts of highway improvements.

Planning and Land Use Factors: An inventory of existing land uses within the Study Area will be undertaken in order to establish the opportunities and constraints that exist as a result of the built and recreational environment. This will include secondary source documentation for commercial and residential development, industrial, recreational, institutional and utility corridor land uses. The inventory will also include consideration and identification of future land uses such as development, right-of-way requirements and future transportation facilities. Candidate properties, such as those north and south of the Queensway, will be considered for use as Temporary Staging areas where rapid replacement bridges may be constructed prior to being moved into place.

City / NCC Pedestrian and Cycling Plans and routes will be reviewed considering the potential project impacts to several key pedestrian routes as well as the City cycling routes on Metcalfe and the Rideau Canal pathways. Key transit routes will be identified and reviewed with OC Transpo for potential disruptions during construction.

Site Contamination: A Contamination Overview Study (COS) will be conducted in accordance with Section 3.6.1 of the Environmental Reference for Highway Design (ERD) (MTO, October 2006) and the Environmental Guide for Contaminated Property Identification and Management (MTO, October 2006), during the bridge condition survey focusing on the 4 bridge sites. The purpose of the COS is to provide a general overview of the study area to identify properties/areas with the potential for site contamination including those being investigated for staging areas.

Hazardous Materials Investigation: Study specialists will investigate to determine the extent and location of these hazardous materials for each structure. The investigation will include sampling of asbestos, arsenic and lead paint during the structural investigation of the bridge, and generation of an inventory of potential PCB-containing electrical equipment. Samples for asbestos and lead will be analyzed by a certified laboratory. One report will be produced summarizing the extent and location of the asbestos, lead, and potential PCB-containing electrical equipment. Separate summary reports for each structure will be prepared.

Archaeology: A Stage 1 Archaeological Assessment will be completed for this project and will be restricted to areas outside the right-of-way that are anticipated to be directly impacted by construction operations (staging areas for bridge farms) and those areas impacted to provide access to the work areas. The archaeological portion of the environmental work plan will follow the 2009 Draft Standards and Guidelines for Consultant Archaeologists (MTCS) which represent “best practices” for conducting archaeological consulting in Ontario. The Stage 1 Archaeological Assessment (MCL 2009: Section 1) focuses on conducting background research on these extra areas outside the right-of-way of the project study area. The archaeological site potential of these areas will be determined by reviewing the previous Stage 1 Archaeological Assessment Ottawa Queensway Study (GWP663-93-00) and by reviewing background archaeological data developed since this Stage 1 Archaeological Assessment. A Stage 1 Archaeological Assessment report will

be prepared which will describe the results of all background research and the property inspection fieldwork conducted, and will contain all necessary photographic and cartographic documentation (MCL 2009: Section 7). The report will provide recommendations for a Stage 2 Archaeological Assessment, if necessary.

Noise: This review will assess the existing noise conditions and condition of the existing barriers and previous commitments under the MTO's retrofit program, in accordance with MTO EDR requirements, with the goal of maintaining all previous commitments for noise abatement to achieve the acoustic requirements as set out in the MTO Environmental Guide for Noise. The existing noise conditions will be presented at the first PIC with the preliminary design for any new noise barriers being presented at the second PIC. The study will be conducted according to the MTO Environmental Guide for Noise 2006, as updated in 2013.

Landscape Composition: The Landscape Composition investigation will focus on the Rideau Canal Structure and the treatments on the four corners of each bridge for all 4 sites and will be conducted in accordance with Section 3.9 of the ERD. Site visits will occur both during growing and dormant tree conditions to assess the visual characteristics of the existing corridor and its environs. A photographic record will be produced. A site assessment will be conducted in order to assess the site context, character and surrounding influences – as well as potential impacts to vegetation and opportunities for mitigation. The Project Landscape Architect will work closely with the Project Architect in assessing potential Context Sensitive Design Solutions for the work and will lead the preparation of landscape concepts and final landscape preliminary plans.

Cultural Heritage: The 7 bridges under this preliminary design assignment were constructed prior to 1965. MTO bridges built between 1945 and 1965 have been screened for heritage significance with the information documented in the Heritage Bridges Identification and Assessment Guide, Ontario 1945 – 1965. None of the 7 structures are included on the Candidate Bridge List A, B or C. No additional heritage work is required for the 7 bridges under this assignment. Therefore, the focus of the cultural heritage analysis will be to characterize the heritage Rideau Canal for inclusion in the development of alternatives for this bridge. This input is described in the following section.

Context Sensitive Design: The bridge sites will be assessed for a Context Sensitive Design (CSD) approach and features that support the municipal, provincial and federal objectives for the National Capital Region and local communities and follow the direction of the Ministry's latest Queensway Corridor CSD Concepts.

The Rideau Canal waterway extends 202 km linking the Ottawa River to Lake Ontario. Highway 417 (the Queensway) crosses it near the northern end in downtown Ottawa. The Canal is honoured with a number of distinctions: a National Historic Site, a Canadian Heritage River, and inscription as a UNESCO World Heritage Site. Through these designations, the corridor that

encompasses the Rideau Canal has been recognized as a cultural landscape of some significance. The Rideau Corridor Landscape Strategy (RCLS), Landscape Character Assessment & Planning and Management Recommendations is the guiding document when proposals for change within the landscape are assessed for the degree of landscape sensitivity, under cultural, natural and visual character categories.

This document and several others will be referenced by the CSD Team in its evaluations of the bridge site and proposed new bridge design alternatives. This evaluation will form part of the project CSD Report. Alternatives will consider a multi span bridge (trails using an end span) and a single span structure.

Source Water Protection: The environmental team will undertake this assessment in accordance with the requirements of the Ministry's EDR and relevant guidelines. The issues of recharge/discharge areas within and immediately adjacent to the right-of-way will be reviewed as they pertain to the presence of any known wells, the City of Ottawa and MTO storm water drainage systems and outlet locations, City of Ottawa potable water distribution system and the system's source at Lemieux Island in the Ottawa River, upriver from Chaudière Bridge. The results of this assessment will be documented in a factor-specific report.

Task 6: Technical Investigations

BRIDGE ENGINEERING

The general scope of work for Bridge Engineering includes:

- Review all available bridge drawings and reports. Perform all site investigations to support the design process and acquire sufficient data to facilitate selection of the preferred strategy;
- Verify by visual inspection and sounding, the condition of all exposed accessible substructure surfaces for delamination and spalling. An updated detailed condition survey of the deck will also be conducted by the project team to verify the present condition. The inspection information will be used to determine the rehabilitation / replacement strategy to ensure the desired service life;
- Determine clearance and geometries are in compliance with the Canadian Highway Bridge Design Code (CHBDC) and the Geometric Design Standards for Ontario Highways and clearance requirements at the canal crossing;
- Prepare Structural Site Investigation Reports, documenting the findings incorporating input from previously prepared condition surveys;
- Produce a technical memorandum with technical recommendations on the replacement and rehabilitation strategies for input in the Assessment of Alternatives to the Undertaking; Participate in the evaluation of alternatives using the MATS methodology producing a Structural Evaluation

Report that will form part of the Evaluation Report for the EA, assessing every major component's structural capacities;

- Complete a Seismic Evaluation for the Rideau Canal Bridge structures;
- Produce a Structural Design Report, presenting the structural design considerations, criteria, constraints, methods of evaluating alternatives, analysis the alternatives including the project scope / cost / schedule risk and the selection of the recommended rehabilitation or replacement method;
- Detail the use of accelerated bridge construction/rehabilitation methods including staging areas, primary and secondary closure periods and schedule impacts;
- Develop a holding strategy (short term emergency repairs and monitoring program) for structures that require an interim strategy until construction can be undertaken in the 6-10 year timeframe;
- Develop Context Sensitive Design for the prominent Rideau Canal structures commensurate with their location in a world heritage site, and appropriate treatment of the Metcalfe, Elgin and Main structures;
- Prepare structural rehabilitation or replacement preliminary design package, including draft General Arrangement drawings for new bridge(s) or major rehabilitation and text and costing for inclusion in the Preliminary Design Report (PDR); and
- Identify any ancillary structures and the existing utilities that will be impacted by the work.

ELECTRICAL ENGINEERING

The electrical scope of work for this project will include:

- Obtain existing available documentation from MTO for the six intersections and for all existing illumination within the study limits.
- Carry out a detailed inventory assessment of existing MTO, Municipal, Private and Utility illumination and electrical systems, power supplies, counting stations etc., and summarize findings in report. Identify ownership and condition of the equipment.
- Carry out a photometric analysis of the existing lighting system and identify conformance with current Ministry standards and policies.
- Establish preferred electrical engineering alternatives for the civil improvements and highlight specifics for high mast vs. conventional lighting.
- Recommend appropriate alternatives and identify removals, potential conflicts and constraints.
- Review traffic detours, staging and geometric improvements and identify requirements for temporary illumination. Maintain existing illumination intensity at all stages.

FOUNDATION ENGINEERING

The preliminary foundation investigations and desktop studies will consist of the following:

- A site reconnaissance and desktop study for each site, including a review of available geological and subsurface conditions, a review of the existing foundations based on design and/or as-built drawings, a review of any existing Foundation Reports to assess the type and performance of the existing foundations, and a review of any MTO maintenance records or issues for the structures.
- Preliminary foundation investigation and design for the widening/rehabilitation and/or replacement of the Rideau Canal structures.
- Desktop studies will be completed for the widening/rehabilitation or possible replacement of the Metcalfe, Elgin and Main Street Bridges.
- A review of temporary construction staging areas for potential Rapid Bridge/Deck replacement.

HIGHWAY ENGINEERING

The highway engineering activities will consist of the following activities:

- Liaison with the NCC, DFO, Transport Canada, DFO, Heritage Canada and Parks Canada for operational issues with respect to the Rideau Canal for the construction activities of the bridge replacement and navigability.
- Liaison with the City of Ottawa on future projects and operations and NCC to incorporate relevant information from other planned projects in the corridor.
- Document the existing conditions along the Queensway.
- Generate operational, safety and staging alternatives for replacement of the 7 structures considering conventional and rapid removal, and accelerated construction methods.
- Evaluate staging alternatives for the structure replacements, widening and rehabilitation works.
- Coordinate the City of Ottawa and Multi-use pathway, bike lanes, or sidewalk improvements across the Queensway (to meet new accessibility guidelines of TAC, NCC and the City of Ottawa).
- Prepare a composite utility relocation plan which is based on meetings with utility companies to ensure acceptance and costing of all proposed utility relocations.

TRAFFIC ENGINEERING

The traffic analysis will complete traffic engineering reviews of temporary traffic levels of service and delays associated with alternative staging plans for rehabilitation or replacement alternatives. The analysis will assess lane reductions, ramp closures for conventional or rapid rehabilitation or replacement, and full Queensway closures for rapid replacement bridge projects.

Task 7: Assessment of Planning Alternatives to the Undertaking

The evaluation of the bridge alternatives will be completed in a two-step process. The initial step (see **Section 5.0**) is to consider alternatives to the undertaking, which include:

- The "Do Nothing" Alternative
- Rehabilitation of the bridge
- Replacement of the bridge

A preliminary recommendation for public and agency review and comment is that the "Do Nothing" alternative is not recommended to be carried forward for this study based on the age and deterioration of the existing structures (see **Section 2.0**). Both rehabilitation and replacement alternatives are recommended to be carried forward to be investigated for each bridge site.

Task 8: Development, Analysis and Evaluation of Preliminary Design Alternatives

The rehabilitation and replacement alternatives for the bridges will be generated through discussions with MTO, the MTAC and FAC, agencies and the general public during the finalizing of the Study Design. The list will be confirmed with the public as required as part of the EA process, including the "Do Nothing" option. The preliminary design alternatives include the following separate groups of alternatives:

1) Rehabilitation alternatives;
2) Replacement alternatives;
3) Traffic Operations (detours); and
4) Staging Areas.

Rigid Frame (Metcalfe, Elgin & Main) Rehabilitation Alternatives may include:

- Lane by lane or full deck i.e. one stage overlay
- Overlay material including low shrinkage and latex modified concretes
- Waterproofing materials including Methyl Methacrylate waterproofing
- Timing of waterproofing application

Rigid Frame Replacement Alternatives may include*:*

- Deck only replacement with rehabilitation of the abutment walls
- Full replacement on the existing footings
- Full replacement with increased or decreased span and new foundations
- Bridge farm staging area location alternatives (see **Figure 11** and **Figure 12**).

Rideau Canal Replacement bridge type alternatives may include*:*

- three span concrete or steel girder type structures on existing piers
- three span steel box girder or extrados concrete bridges with repositioned piers

- Single span basketweave or vertical hanger arch

Rideau Canal Replacement Methodologies may include:

- Lateral sliding requiring temporary piers in the canal
- No long term freeway detours or disruption beyond the construction zone which is suitable for all structure types indicated
- Section by section replacement in place
- Gantry assist of the demolition and reconstruction process, suitable for all girder type replacement options requiring multi-stage traffic management which is also suitable for all structure options (see **Figure 13**)

Rideau Canal Pier Location Alternatives may include:

- Maintaining the current location with rebuilt or reinforced piers
- Placement of new piers behind the existing canal walls and paths
- Reconstructing the canal walls on their original alignment and positioning piers behind the path in the widened parkland

Traffic Management Alternatives will consider:

- Staged sequential works with temporary lane reductions on the Queensway, as illustrated in **Figure 13**
- Rapid replacement projects with full closures on the Queensway. Conceptual Queensway full closures are illustrated in **Figure 14** and **Figure 15**



Figure 11: Potential Staging Areas for Metcalfe Street and Elgin Street Structures



Figure 12: Potential Staging Areas for Main Street Structures

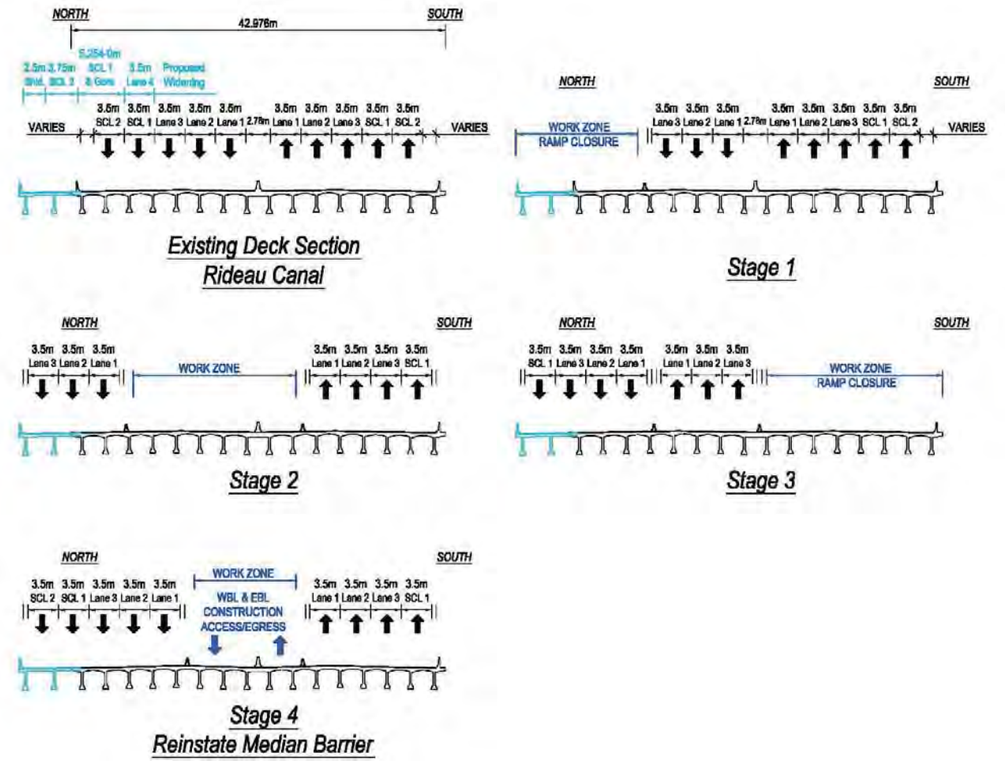

Figure 13: Staged Sequential Works with Temporary Lane Reductions

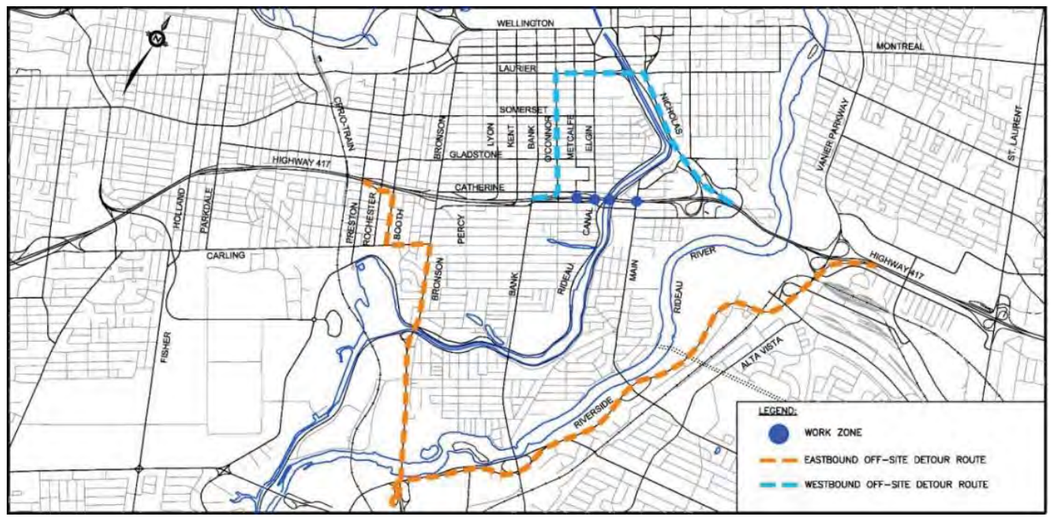

Figure 14: Concept Detour Alternatives for Full Queensway Closure (Weekend)

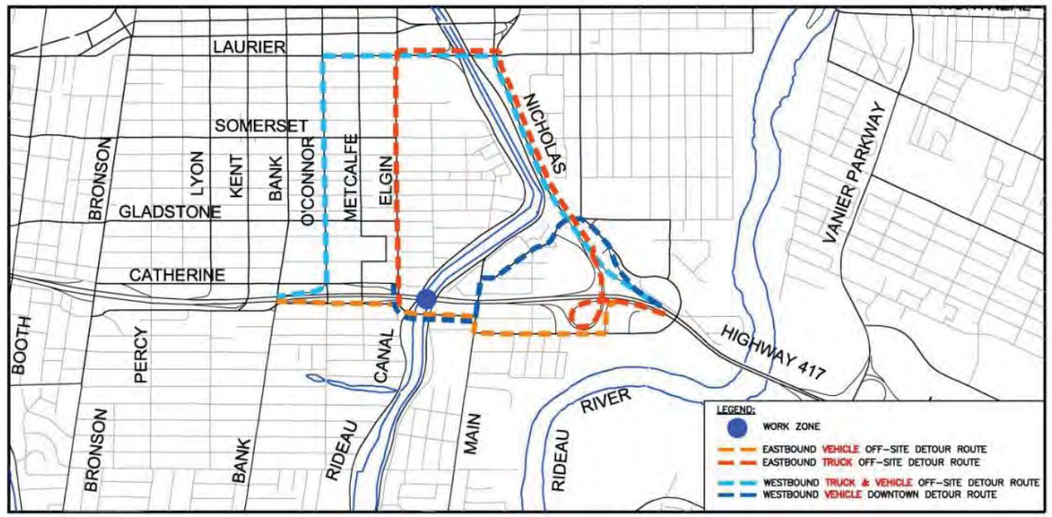

Figure 15: Concept Detour Alternatives for Metcalfe Street On-Ramp and Off-Ramp Closure

Task 9: Evaluation Process

For the evaluation of preliminary design alternatives, the systematic approach described in **Section 6.2** will be used to define a balanced Recommended Plan. This traceable process allows the evaluation team and the public an opportunity to assess trade-offs involved in the evaluation and use of this information in the decision making process.

Task 10: Public Consultation

PIC No. 1 will present:

- The draft Study Design Report;
- Need and justification;
- Seek information and comments from agencies and the public;
- Assessment of Planning alternatives;
- Environmental and engineering inventories;
- Coarse screening of alternatives;
- Coarse screening of preliminary design bridge and highway alternatives; and
- Evaluation criteria for rating and the selection of the TPA for each bridge.

PIC No. 2 will present the technical evaluation of alternatives and recommendation for a Technically Preferred Plan for each bridge site.

The use of a PIC at two stages of the study will encourage the public and agencies to comment on the process and final Recommended Plan for the study. Each PIC will include coloured graphics and text boards to describe the process and opportunities for the public to provide comment. In addition, we will hold an initial viewing and briefing of the materials for elected officials and external agencies before opening each meeting to the public.

Task 11: Preparation of the TESR

The preparation of the draft and final TESR will follow the format and content in accordance with the MTO Class Document. The TESR will document the study methodology, findings, public involvement and recommendations. Draft versions of all reports will be submitted to MTO and selected agencies based on their mandate and concerns for review prior to the preparation of the final document.

The public will be notified of the availability of the TESR for public review. Update letters/emails will be forwarded to individuals requesting direct contact through the study.

8.0 Documentation

The study will conclude with a TESR that will be presented to the public and agencies for final review. The TESR will follow the format and content in accordance with the MTO Class Document. The TESR will document the study methodology, findings, public involvement and recommendations. Draft versions of all reports will be submitted to MTO and selected agencies based on their mandate and concerns for review prior to the preparation of the final document.

9.0 Identification of Formal Environmental Approvals and Bylaw Exemptions

In consultation with the approving agencies, all necessary formal applicable environmental approvals and bylaw exemptions will be determined and (at least) agreement in principle obtained where possible. These approvals may include Federal work permits or authorizations for construction within regulated areas from Parks Canada under the *Heritage Canals Act*, Transport Canada under the *Navigable Waters Act*, Department of Fisheries and Oceans under the *Fisheries Act,* or the NCC. In addition, clearances will be required for: stormwater management/ Species at Risk from the Ministry of Natural Resources and Forestry (MNRF); archaeological and cultural heritage from the Ministry of Tourism, Culture and Sport (MTCS); and potentially a Permit to Take Water (PTTW) from MOECC.

The need for noise by-law exemptions may be identified by the City of Ottawa for any proposed construction activity that does not comply with existing by-laws.

The Canadian Environmental Assessment Act was repealed when the new *Canadian Environmental Assessment Act*, 2012 (CEAA 2012) came into force on July 6, 2012. Projects such as this one no longer require a CEAA Screening even if a former ‘federal EA trigger’ exists. However, projects will still be subject to relevant federal laws, regulations and standards as applicable and CEAA 2012 still requires that before federal authorities make any decision that would allow a project to proceed, they must determine whether a project is likely to cause significant adverse environmental effects. Therefore, the potential need for any federal approvals for the project will be determined and (at least) agreement in principle obtained during the preliminary design/EA study with the proponent initiating a self-assessment.

10.0 Proposed Project Schedule

A preliminary Project Schedule has been prepared and a summary is available for review as shown in **Table 1**. This schedule reflects the limitations of seasonal inventories beginning in summer 2017 with project start-up. The PIC meetings will be scheduled to avoid the Christmas and summer vacation periods.

Table 1: Proposed Preliminary Study Schedule Summary

Task	Date
Project Start-Up Meeting	April 2017
Study Design	April-May 2017
Information Gathering	April-July 2017
Study Commencement Notice	July 2017
Bridge Condition Survey	July 2017
Environmental Inventories: Natural Environment, Archaeology, Fisheries, Land Use, Business Impacts	June-August 2017
Technical Investigations: Traffic, Geotechnical	June-August 2017
Assessment of Alternatives to the Undertaking	August 2017
Public Information Centre (PIC) No. 1	Fall 2017
Development, Analysis and Evaluation of Design Alternatives	Winter 2017/2018
Selection of Technically Preferred Alternative	Winter 2017/2018
Public Information Centre (PIC) No. 2	Spring 2018
Refinements to Technically Preferred Alternative (if required)	Spring 2018
Draft Transportation Environmental Study Report	Summer 2018
Final TESR submission	Fall 2018
Public Review Period	Fall 2018
Preliminary Design Report	Winter 2018

Glossary of Terms

• **AADT**	Annual Average Daily Traffic – the average 24-hour, two-way traffic per day for the period from January 1st to December 31st.
• **ACPDR**	Advisory Committee on Planning, Design and Realty
• **Alignment**	The vertical and horizontal position of a road.
• **Alternative**	Well-defined and distinct course of action that fulfils a given set of requirements. The EA Act distinguishes between alternatives to the undertaking and alternative methods of carrying out the undertaking.
• **Alternative Planning Solutions**	Alternative ways of solving problems or meeting demand (Alternatives to the Undertaking).
• **Alternative Design Concepts**	Alternative ways of solving a documented transportation deficiency or taking advantage of an opportunity. (Alternative methods of carrying out the undertaking).
• **Alternative Project**	Alternative Planning Solution, see above.
• **Alternatives to the Undertaking**	Alternative ways of solving problems or meeting demand (Alternative Planning Solutions).
• **ANSI**	Area of Natural or Scientific Interest
• **Berm**	Earth landform used to screen areas.
• **Bridge Farm Staging Areas**	See Staging Areas definition
• **BMP**	Best management practice.
• **Bump-Up**	The act of requesting that an environmental assessment initiated as a class EA be required to follow the individual EA process. The change is a result of a decision by the proponent or by the Minister of Environment to require that an individual environmental assessment be conducted.

• **Bypass**	A form of realignment in which the route is intended to go around a particular feature or collection of features.
• **Canadian Environmental Assessment Act (CEAA)**	The CEAA applies to projects for which the federal government holds decision-making authority. It is legislation that identifies the responsibilities and procedures for the environmental assessment.
• **Class Environmental Assessment Document**	An individual environmental report documenting a planning process which is formally submitted under the EA Act. Once the Class EA document is approved, projects covered by the class can be implemented without having to seek further approvals under the EA Act provided the Class EA process is followed.
• **Class Environmental Assessment Process**	A planning process established for a group of projects in order to ensure compliance with the Environmental Assessment (EA) Act. The EA Act, in Section 13 makes provision for the establishment of Class Environmental Assessments.
• **Compensation**	The replacement of natural habitat lost through implementation of a project, where implementation techniques and other measures could not alleviate the effects.
• **Consortium**	A group of businesses or organizations allied to take on a project.
• **Corridor**	A band of variable width between two locations. In transportation studies a corridor is a defined area where a new or improved transportation facility might be located.
• **Criterion**	Explicit feature or consideration used for comparison of alternatives.
• **Cumulative Effects Assessment**	Cumulative Effects Assessment assesses the interaction and combination of the residual environmental effects of the project during its construction and operational phases on measures to prevent or lessen the predicted impacts with the same environmental effects from other past, present, and reasonably foreseeable future projects and activities.

• **Decibel (dB)**	A logarithmic unit of measure used for expressing level of sound.
• **dBA**	'A' weighted sound level; the human ear cannot hear the very high and the very low sound frequencies as well as the mid-frequencies of sound, and hence the predicted sound levels, measured in dBA, are a reasonable accurate approximation of sound levels heard by the human ear.
• **Detail Design**	The final stage in the design process in which the engineering and environmental components of preliminary design are refined and details concerning, for example, property, drainage, utility relocations and quantity estimate requirements are prepared, and contract documents and drawings are produced.
• **DFO**	Department of Fisheries and Oceans.
• **EA**	Environmental Assessment
• **EA Act**	Ontario Environmental Assessment Act (as amended by S.O. 1996 C.27), RSO 1980.
• **Environment**	• Air, land or water, • Plant and animal life, including human life, • The social, economic and cultural conditions that influence the life of humans or a community, • Any building structure, machine or other device or thing made by humans, • Any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or • Any part or combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario. •
• **Environmental Effect**	A change in the existing conditions of the environment which may have either beneficial (positive) or detrimental (negative) effects.

• **Environmentally Sensitive Areas (ESA's)**	Those areas identified by any agency or level of government which contain natural features, ecological functions or cultural, historical or visual amenities which are susceptible to disturbance from human activities and which warrant protection.
• **Equivalent Sound Level (Leq)**	The level of a continuous sound having the same energy as a fluctuating sound in a given time period. In this report Leq refers to 24-hour, 16 or 18-hour averages.
• **Evaluation**	The outcome of a process that appraises the advantages and disadvantages of alternatives.
• **Evaluation Process**	The process involving the identification of criteria, rating of predicted impacts, assignment of weights to criteria, and aggregation of weights, rates and criteria to produce an ordering of alternatives.
• **External Agencies**	Include Federal departments and agencies, Provincial ministries and agencies, conservation authorities, municipalities, Crown corporations or other agencies other than MTO.
• **General Arrangement**	Structural plan of the bridge and proposed works including elevations and cross-sectional views of the bridge.
• **FAC**	Federal Advisory Committee
• **Factor**	A category of sub-factors.
• **HADD**	Harmful Alternation, Disturbance or Destruction of fish habitat.
• **Harmonized EA Process**	Harmonized planning process for this project that will meet both the Provincial and Federal EA requirements.
• **Individual Environmental Assessment**	An environmental Assessment requiring the submission of a document for approval by the Minister, pursuant to the EA Act and which is neither exempt from the EA Act nor covered by a Class EA approval.

• **Mitigating Measure**	A measure that is incorporated into a project to reduce, eliminate or ameliorate detrimental environmental effects.
• **Mitigation**	Taking actions that either remove or alleviate to some degree the negative impacts associated with the implementation of alternatives.
• **MNRF**	Ministry of Natural Resources and Forestry.
• **MOECC**	Ministry of the Environment and Climate Change.
• **MTAC**	Municipal Technical Advisory Committee.
• **MTCS**	Ministry of Tourism, Culture and Sport.
• **MTO**	Ministry of Transportation Ontario.
• **MTO Class EA**	Class Environmental Assessment for Provincial Transportation Facilities
• **NCC**	National Capital Commission
• **Noise Attenuation**	A mitigation measure used to lessen the intensity of the noise level (dBA) where the noise level is increased in a noise sensitive area greater than 5 dBA 10 years after completion.
• **NSA**	Noise Sensitive Area is a noise sensitive land use, which has an outdoor living area associated with the residential unit.
• **OBMS**	Ontario Bridge Management System
• **OLA**	Outdoor Living Area is the part of an outdoor amenity area provided for the quiet enjoyment of the outdoor environment.
• **Planning Alternatives**	Planning alternatives are "alternative methods" under the EA Act. Identification of significant transportation engineering opportunities while protecting significant environmental features as much as possible.

• **Planning Solutions**	That part of the planning and design process where alternatives to the undertaking and alternative routes are identified and assessed. Also described as "Alternative Project" under the federal EA Act.
• **PIC**	Public Information Centre
• **Prime Agricultural Areas**	Prime agricultural areas as defined in municipal official plans and other government policy sources.
• **Project**	A specific undertaking planned and implemented in accordance with the Class EA including all those activities necessary to solve a specific problem.
• **Proponent**	A person or agency that carries or proposes to carry out an undertaking, or is the owner or person having charge, management, or control of an undertaking.
• **Public**	Includes the general public, interest groups, associates, community groups, and individuals, including property owners.
• **Realignment**	Replacement or upgrading of an existing roadway on a new or revised alignment.
• **Recommended Plan**	That part of the planning and design process, during which various alternative solutions are examined and evaluated including consideration of environmental effects and mitigation; the recommended design solution is then developed in sufficient detail to ensure that the horizontal and vertical controls are physically compatible with the proposed site, that the requirements of lands and rights-of-way are satisfactorily identified, and that the basic design criteria or features to be contained in the design, have been fully recognized and documented in sufficient graphic detail to ensure their feasibility.
• **Route Alternatives**	Location alternatives within a corridor.
• **SADT**	Summer Average Daily Traffic – the average 24-hour, two-way traffic for the period from July 1st to August 31st including weekends.
• **SAR**	Species at Risk.

• **Screening**	Process of eliminating alternatives from further consideration, which do not meet minimum conditions or categorical requirements.
• **Staging Areas**	Locations where entire bridges and/or bridge segments are constructed in advance of being moved by the self-propelled modular transporters to replace previously removed existing bridge segments. The staging areas will also be used to demolish the existing bridges/bridge segments moved out in advance of the new replacements being moved in.
• **Sub-factor**	A single criterion used for the evaluation. Each sub-factor is grouped under one of the factors.
• **TAC**	Technical Advisory Committee.
• **TESR**	Transportation Environmental Study Report. The final documentation for Group B project, defining the project, consultation process, preferred solution and mitigation measures.
• **TIMG**	Traffic Incident Management Group
• **Traceability**	Characteristics of an evaluation process which enables its development and implementation to be followed with ease.
• **Undertaking**	In keeping with the definition of the Environmental Assessment Act, a project or activity subject to an Environmental Assessment.

Appendix B

Summary of Environmental Conditions Report

Ottawa Queensway Downtown Bridges Preliminary Design and Environmental Assessment Study for Rehabilitation/Replacement GWP 4170-13-00 Summary of Environmental Conditions Report





REVISION 3
October 2022

BT Eng Project 17-010

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1.0 Introduction

BT Engineering Inc. (BTE) was retained by the Ministry of Transportation (MTO) to prepare a Summary of Environmental Conditions Report as part of the Class Environmental Assessment for Provincial Transportation Facilities (MTO Class EA) for the rehabilitation or replacement of seven (7) bridges at four (4) locations on the Ottawa Queensway (Highway 417) from Metcalfe Street to Main Street.

This Summary of Environmental Conditions Report (SECR), prepared in accordance with the MTO Environmental Reference for Highway Design (2009), provides information regarding the existing environmental conditions within the Broader Study Area (BSA) and Local Study Areas (LSA's). Environmental information used for the production of this report has been assembled from the review of secondary source information as well as from current field investigations conducted specifically for this project. The purpose of this Report is to summarize the significance of the environmental features found in the BSA and LSA's and to allow for the identification of potential impacts resulting from the bridge rehabilitations and /or replacements.

Due to the nature of the study, for certain environmental factors such as in **Section 5.1.3 Surface Water**, the existing environmental conditions are the same or very similar for all four (4) LSA's while for other environmental factors such as in **Section 5.3.1 Land Use,** the conditions are different for each LSA. For this reason, the sub-sections of this report have been expanded only for certain sections to cover each LSA individually, and for other sub-sections the conditions have been summarized for the BSA. This approach also applies to the Immediate Study Area (ISA) (including the Queensway Corridor) given the close proximity of the LSA's.

2.0 Study Area

The area under study is located in downtown Ottawa. The Study Area has been divided to allow for three levels of analysis. The BSA includes the geographic area of the City where temporary short term offsite detour routes are being considered for freeway closures. **Figure 1** illustrates the BSA. The ISA will focus on the Queensway Corridor Study Area generally within or adjacent to the MTO right-of-way that will include the 4 bridge site locations. The LSA's will focus on the bridges at each individual site location. The ISA and LSA's can be seen in **Figure 2**. Additional LSA's considered include potential staging areas for alternative construction staging sites, as shown in **Figure 3** and **Figure 4**.

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Queensway Downtown Bridges, Ministry of Transportation
Summary of Environmental Conditions Report
October 2022

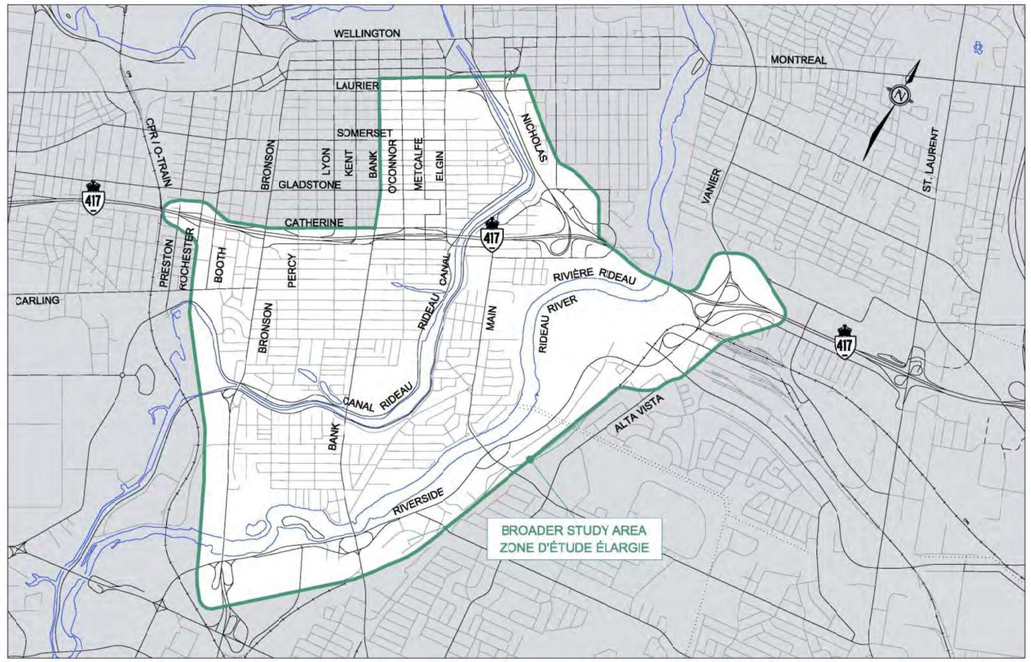

Figure 1: Broader Study Area

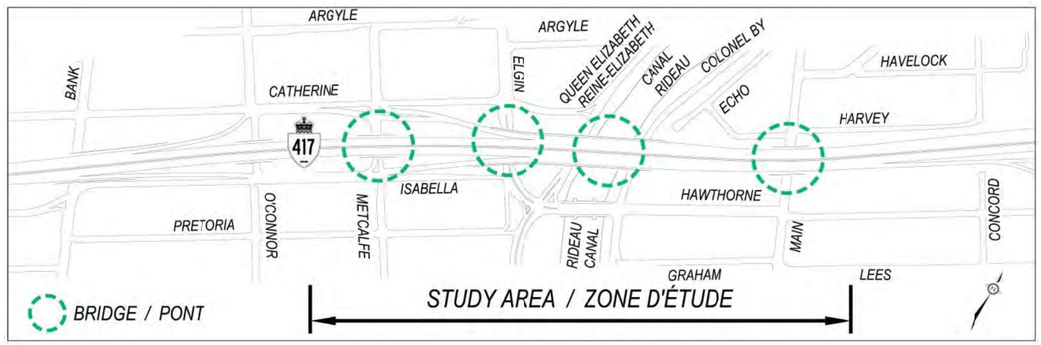

Figure 2: Study Area and Local Study Areas/Bridge Sites

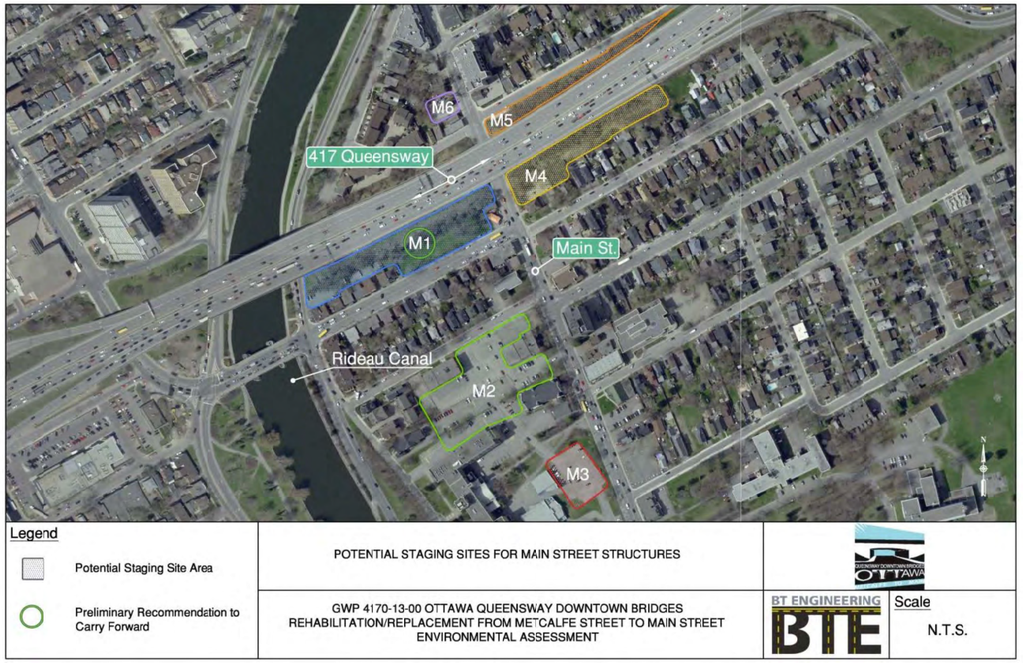

Figure 3: Potential Staging Sites for Main Street

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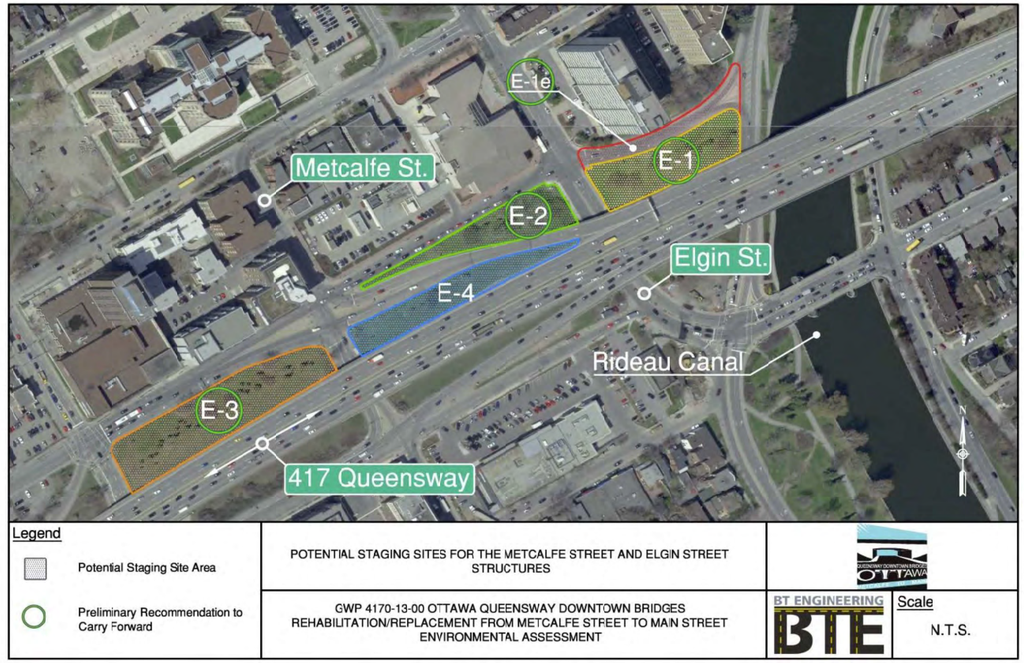

Figure 4: Potential Staging Sites for Metcalfe Street and Elgin Street

3.0 Stakeholder Correspondence

A consultation program has been undertaken for this project. Various stakeholders that may have an interest in the project, or that may have background information that could be pertinent to the project, were contacted at the initiation of the consultation program and on a continuing basis. See **Appendix A** for copies of selected stakeholder correspondence. Comments received are summarized below:

- Parks Canada has supplied information regarding water level elevations, canal wall restoration, Rideau Canal archaeology and bridge design.
- National Capital Commission has supplied information on parkways adjacent to the Rideau Canal.
- Rideau River Conservation Authority has advised that their jurisdiction does not apply to the Highway 417 crossing of the Canal.
- City of Ottawa has provided comments on their infrastructure crossing and adjacent to the Highway 417 right-of-way including the Metcalfe, Elgin and Main Street bridges. Information was also supplied regarding Ballantyne Park including future infrastructure and roadway redevelopment.
- OC Transpo provided information on transit routes and comments on planned detours and the impact on existing transit routes.

4.0 Planning Context

4.1 Ministry of Transportation Plans

The MTO has various plans, guides and policy documents as well as standards and specifications that guide the planning and implementation of provincial infrastructure projects. These include:

- Class Environmental Assessment for Provincial Transportation Facilities (2000)
- MTO - Environmental Reference for Highway Design (2009)
- MTO - Environmental Standards and Practices User Guide (2006)
- MTO - Geometric Design Standards for Ontario Highways
- MTO - Structural Manual

In addition, MTO's Southern Highways Program 2017 to 2021 provides an overview of projects currently underway or planned for implementation and includes both 'expansion' and 'rehabilitation' projects. The bridges currently under study are not included in MTO's 2017 to 2021 Program and, other than addressing any shorter-term needs, the construction of the recommended rehabilitations and/or replacements are expected to take place in the 2028 to 2032 timeframe.

Through Sustainability In-Sight, MTO's sustainability strategy (February 2011), and the more recent MTO Sustainability Implementation Plan (SIP, 2011), the Ministry has indicated that it is a priority to integrate the principle of sustainability into the Ministry's decision making, programs, policies and operations. The SIP also includes a goal to consistently apply a context sensitive approach in MTO's work.

4.2 National Capital Commission Plans

The National Capital Commission (NCC) is responsible for the planning and management of federal lands in the Capital Region with a purpose of enhancing the scenic beauty of the area with public works that encourage the enjoyment and appreciation of its cultural and natural heritage. The approved NCC Plan for Canada's Capital is based on 3 themes; an inclusive and meaningful capital, a picturesque and natural capital, and a thriving and connected capital. As part of implementing works that will enhance these themes, the NCC has created and maintains an extensive system of open space and parkland with multi-purpose trails that provide essential linkages between the capital precinct and the surrounding area. The Rideau Canal is a centrepiece of this trail network and accommodates ever increasing use of the canal lands for recreational activities in all seasons. The proposed undertaking of repairing or replacing the Queensway bridge at the Rideau Canal must recognize the important role that the abutting trails and linear parkland play in the daily life of the Capital and ensure that any disruptions or alterations to the canal-side trails are mitigated.

See **Section 0.1.3**, **Context Sensitive Design Report, Appendix B** for relevant NCC policies for context sensitive design.

4.3 Parks Canada Plans

The **Rideau Canal Historic Site Management Plan** of 2005 focuses on the Canal as a National Historic Site (NHS). This Management Plan lists the following values as being associated with the designated place:

- the engineering achievement of the construction of the Canal;
- its continuous seasonal operation since 1832;
- the survival and integrity of the Canal system with the majority of its original built resources intact;
- the continuity and integrity of the lock stations and the sense of a complete "system" that these stations convey; and
- the historic, ecological and visual associations with the shore-lands and communities along the waterway which contribute to the unique historical environment of the Canal.

The NHS Management Plan includes in its Appendix a Commemorative Integrity Statement that was approved in 2000, which is a summary of heritage attributes and values similar to a Statement of Cultural Heritage Value. This Plan outlines several general principles for the management of features found within the Study Area of the Queensway bridges project.

See **Section 0.1.3**, **Context Sensitive Design Section of 30% Update Report, Appendix B** for relevant Parks Canada Policies.

4.4 City of Ottawa Plans

A complete discussion of City of Ottawa Plans within the BSA, ISA and LSA's can be found in the Land Use Report, **Appendix C**. A summary of City of Ottawa Plans within the BSA and LSA's follows.

4.4.1 Official Plan

The Official Plan (OP) of the City of Ottawa has been prepared to better manage the growth and change that the City will experience over the next 20 years. The OP provides direction to several supporting plans that provide a greater level of detail on important issues than is practical in the Official Plan itself. These plans contain infrastructure program elements and strategies supportive of the policy directions contained in the OP.

The main supporting plans that have been or are being developed are:

- Transportation Master Plan – A comprehensive plan that sets out the City's approach to managing and meeting the demand for transportation facilities, including walking, cycling, transit and roads;
- Infrastructure Master Plan – An integrated planning and system management document which coordinates the City's efforts in meeting the demand for public water, wastewater and stormwater services; and
- Greenspace Master Plan – Characterizes and evaluates all components of greenspace in the City as a basis for a range of policies related to protection, acquisition and management.

Throughout the OP are references to studies and plans that will enhance existing land use policies. OP policies or land use schedules may be needed to implement any of these plans. There are 14 schedules for policies or schedules, as per the OP, as follow:

- Schedule A – Rural Policy Plan
- Schedule B – Urban Policy Plan
- Schedule C – Primary Urban Cycling Network
- Schedule D – Rapid Transit Network
- Schedule E – Urban Road Network

- Schedule F – Central Area/Inner City Road Network
- Schedule G – Rural Road Network
- Schedule H – Road Network – Select Villages
- Schedule I – Multi-Use Pathways and Scenic/Entry Routes – Urban
- Schedule J – Cycling, Multi-Use Pathways and Scenic/Entry Routes – Rural
- Schedule K – Environmental Constraints
- Schedule L1 – Natural Heritage System Overlay (East)
- Schedule L2 – Natural Heritage System Overlay (South)
- Schedule L3 – Natural Heritage System Overlay (West)

4.4.1.1 Land Use Designations

The lands within the BSA are designated as; General Urban Area, Central Area, Major Open Space, Mixed Use Centre, Urban Natural Features, Employment and Traditional Mainstreet by the City of Ottawa's OP Schedule B, Urban Policy Plan.

The following is a brief description of the land use designations as found in the OP; refer to the OP for full description and details on permitted uses and policies:

- **General Urban Area:** This designation permits all types and densities of housing, as well as employment, retail uses, service, industrial, cultural, leisure, greenspace, entertainment and institutional uses.
- **Central Area:** This area is recognized as the economic and cultural heart of the City and the symbolic heart of the nation. This designation establishes a vision and detailed policies for the desired future of the Central Area as the focus of government, tourism, business, retail, housing, major community facilities, entertainment and cultural activities.
- **Major Open Space:** This designation is to protect the larger open spaces in Ottawa that are to be generally available for public use and enjoyment. These areas include open space corridors along the Ottawa and Rideau Rivers and the Rideau Canal, parkway corridors and corridors reserved for rapid transit and major roads. Most Major Open Spaces are already in public ownership. The Rideau River and Canal are national historic sites. Major Open Spaces are a key component of the Greenspace Network, which contributes to the quality of life in neighbouring communities as well as to the overall integrity of the natural environment.
- **Mixed Use Centre:** These areas are strategically located with respect to the transportation system and accessible by transit, walking, cycling and automobile. The designation permits transit-supportive land uses, such as offices, secondary and post-secondary schools, hotels, hospitals, large institutional buildings, community recreation and leisure centres, daycare centres, retail uses, entertainment uses, services (such as restaurants), high- and medium-density residential uses and mixed-use development.
- **Urban Natural Features:** This designation is to preserve natural features that are currently managed for conservation or passive leisure uses. These features provide a valuable contribution to biodiversity and wildlife habitat in the urban area and are enjoyed by residents. Urban Natural Features are natural landscapes and may include woodlands, wetlands, watercourses and ravines. These features may occur on City, federal, provincial and privately-owned lands.

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- **Employment:** This designation provides for the concentration of at least 2,000 jobs at a range of densities. They are distributed throughout the urban area to support the potential to achieve a balance of housing and jobs. These areas must have access to designated truck routes.
- **Traditional Mainstreet:** These areas are planned as compact, mixed-use, pedestrian-oriented streets that provide for access by foot, cycle, transit and automobile.

4.4.1.2 Road Networks

The road network within the BSA is a mix of Provincial Highway, Federally owned roads, and Municipal owned roads (including Major Collector, Arterial and Collector roads) as per the City of Ottawa's OP, as shown **Figure 5** and **Figure 6**. The full Schedules can be found in the Land Use Report in **Appendix C**.

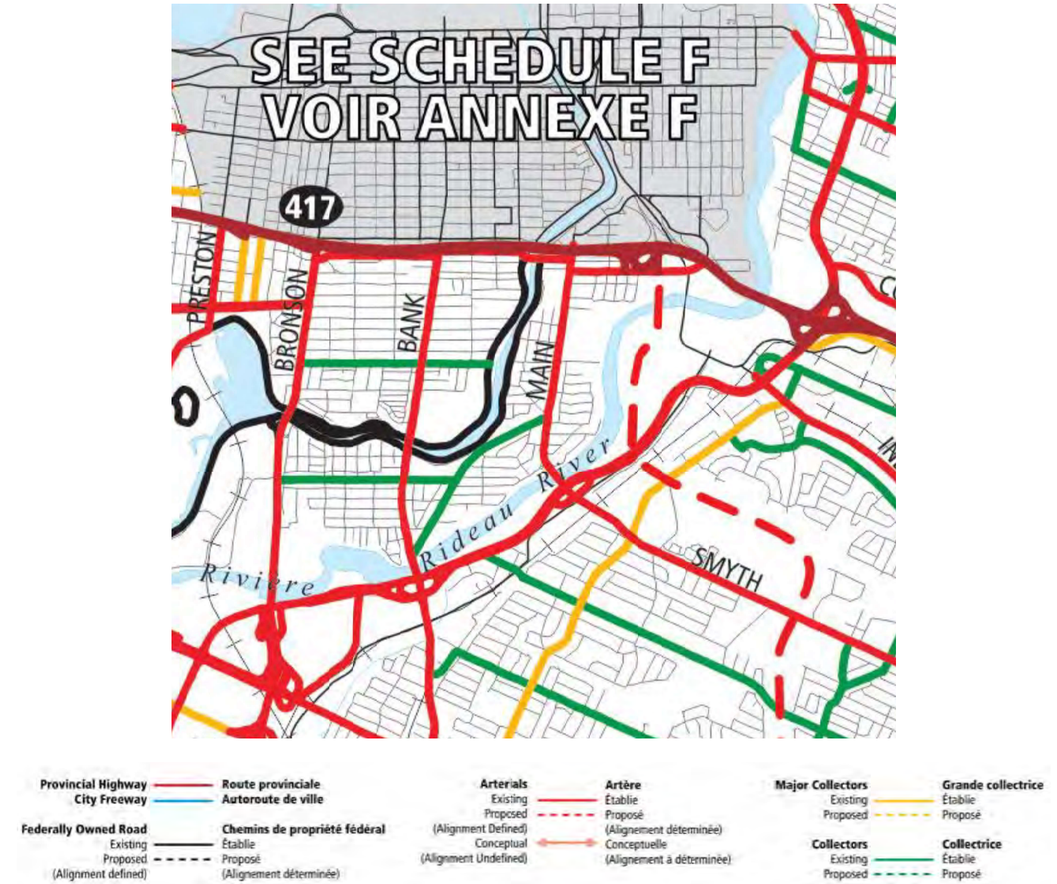

Figure 5: City of Ottawa Official Plan Schedule E: Urban Road Network in vicinity of BSA



Figure 6: City of Ottawa Official Plan Schedule F: Central Area/Inner City Road Network in vicinity of BSA

4.4.1.3 Environmental/Natural Features

The BSA is highly urbanized and does not contain significant environmental constraints within the OP. Based on OP Schedules K and L1, the only noted feature is the presence of floodplains and natural heritage features in the vicinity of the Rideau River and Dow's Lake, at the southern and eastern limits of the BSA. Note: no environmentally sensitive areas, areas of natural or scientific interest, provincially significant wetlands or wetland habitat were identified for the LSA's. The full Schedules can be found in the Land Use Report in **Appendix C**.

4.4.2 City Of Ottawa Design and Planning Guidelines

The City of Ottawa has numerous guidelines which have completed their public consultation phase and have been approved by City Council for implementation. They include:

- Building Better and Smarter Suburbs: Strategic Directions and Action Plan
- Complete Streets in Ottawa and Multi-Modal Level of Service (MMLOS) Guidelines
- Consolidated Design Guidelines for New Development Application Gateway Features
- Downtown Moves: Transforming Ottawa's Streets
- Environmental Noise Control Guidelines
- Gateway Design
- Johnston Road Concept Plan
- Outdoor Patio Design Guidelines
- Park and Pathway Development Manual
- Regional Road Corridor Design Guidelines
- Right-of-Way Lighting Policy
- Road Corridor Planning & Design Guidelines
- Rural Village Design Guidelines
- Transit-Oriented Development Guidelines
- Urban Design Guidelines for Development along Arterial Mainstreets
- Urban Design Guidelines for Development along Traditional Mainstreets
- Urban Design Guidelines for Drive-Through Facilities

- Urban Design Guidelines for Gas Stations
- Urban Design Guidelines for Greenfield Neighbourhoods
- Urban Design Guidelines for High-Rise Housing
- Urban Design Guidelines for Large-Format Retail
- Urban Design Guidelines for Low-rise Infill Housing

Several guidelines pertain to works within the Intermediate Study Area. Refer to the individual guidelines for full descriptions and details on policies.

4.4.3 City Of Ottawa Functional Redesign

City Council has approved the Functional Designs for Elgin Street (Laurier Avenue to Queen Elizabeth Driveway), Waverley Street (Elgin Street to Jack Purcell Lane) and Hawthorne Avenue (Pretoria Bridge to Main Street). The watermains and deep sewers under these streets are among the oldest in the city, dating back to the late 1800s. The need to replace this aging infrastructure has created a unique opportunity to assess the road surfaces and redesign them to meet the City of Ottawa's Traditional Mainstreet designation in the Official Plan, Complete Streets Policy and Accessibility Design Standards.

The redesign will include:

- Widening the sidewalks on Elgin Street and Hawthorne Avenue;
- A two-lane cross-section with turning lanes at select intersections on Elgin Street between Lisgar Street and Argyle Avenue;
- A westbound bicycle lane, two eastbound and one westbound vehicle lanes on Hawthorne Avenue between Colonel By Drive and Main Street;
- A posted speed limit of 30 km/h on Elgin Street between Lisgar Street and McLeod Streets;
- Traffic calming measures and flexible space for on-street parking, patios and seasonal uses on Elgin Street; and
- Six flexible on-street parking spaces, trees and seating areas on Waverley Street between Elgin Street and Jack Purcell Lane.

The City plans to begin working on the detailed designs of the roads, sewers and watermains, with construction planned to begin in 2019. The City will work to provide additional temporary public parking within close vicinity of Elgin Street during reconstruction.

4.4.4 City Of Ottawa Site Plan Control Area

The community of Sandy Hill is designated as a Special Site Plan Control Area. The site plan control bylaw designates Sandy Hill as a Special Site Plan Control Area. This bylaw applies to all new residential development in Sandy Hill but is limited to a review of the design and elevations, the location and layout of on-site parking, landscaping, grading and drainage, and waste management.

4.4.5 City Of Ottawa Design Priority Areas

Development proposals located within the Design Priority Areas (DPA's) are subject to the Ottawa's Urban Design Review Panel process. Ottawa's Urban Design Review Panel is an independent advisory panel of volunteer

professionals who provide an objective peer review of both capital and private sector development projects throughout the City's DPA's. The Panel is an important addition to the City's formal design review process and is intended to enhance the City's capabilities in achieving architectural and urban design excellence.

DPA's within the BSA include areas as detailed below:

- Downtown Precincts as defined by the Downtown Ottawa Urban Design Strategy (DOUDS) (see **Section 4.4.6**);
- Traditional and Arterial Mainstreets as identified on Schedule B of the OP;
- Mixed Use Centres as identified on Schedule B of the OP; and
- Other areas with special design needs such as the main streets within Villages designated on Schedule 'A' of the OP, Village core areas identified in Volume 2C of the OP, community core areas identified in community design plans or secondary plans approved by City Council.

The Panel will provide urban design advice and input on the following; with some exceptions (see City of Ottawa application process for details):

- Zoning By-law applications proposed within DPA's where there is a request for a change in density or height.
- Site Plan Control applications proposed within DPA's.
- Public capital projects occurring in DPA's such as new buildings, major renovations to public buildings, major infrastructure projects and streetscaping projects.

Note: Projects in DPA's that require design approval from the Ottawa Built Heritage Advisory Committee (OBHAC) or NCC will be subject to Panel Design Review; however, Panel recommendations will be forwarded to the applicable organizational body for information and final design approval.

4.4.6 Downtown Ottawa Urban Design Strategy

The Downtown Ottawa Urban Design Strategy (DOUDS) 20/20 is built around four complementary approaches. Each approach contains a bundle of projects to address different urban issues at different geographic scales.

Each approach contributes to the realization of an improved Downtown Ottawa. This structure has been created to ensure that there is a logical sequence in the progression of the design guidance from large downtown-wide initiatives to smaller-scale targeted projects. The approaches identified include Area-Wide Strategies appropriate for the entire downtown area, Precinct Strategies that address the general conditions and larger issues within each precinct, and Targeted Strategies that focus on very specific design issues within each precinct. An NCC-led approach to downtown improvements has also been included.

In the vicinity of the LSA's, DOUDS Strategy No. 37: Metcalfe Gateway and Canadian Museum of Nature Block Restoration applies. This approach Strategy identifies seven targeted actions:

- Restore the urban grid and block structure to allow for an expanded park. This can be achieved through the elimination of the Metcalfe Street continuation between McLeod Street and Argyle Avenue.

- Re-landscape the park to bring it up to a significantly higher standard.
- Special treatment at the intersection of McLeod and Metcalfe.
- Convert Metcalfe and O'Connor Streets to two-way.
- Reconstruct Metcalfe Street as a Civic Boulevard for Ottawa.
- Consider a reconfigured Highway 417/Metcalfe/O'Connor ramp system to realign and/or consolidate access ramps and bring them closer to Highway 417.
- Improve the existing road network access system from Highway 417 and Elgin Street to the Queen Elizabeth Driveway.

4.4.7 City Of Ottawa Community Design Plans

There are two Community Design Plans (CDP's) which include LSA's (local bridge sites and/or potential staging areas).

4.4.7.1 Centretown Community Design Plan

The Centretown CDP and accompanying Secondary Plan were completed on May 8, 2013. They include discussion of streetscape design, pedestrian, cycling and transit priorities/strategies, as well as parking. The CDP addresses many land use, design and implementation strategies. Some of the elements of the Centretown CDP and Secondary Plan that may be relevant to the current study include:

- Proposed exclusive bus lanes and busways, and to encourage research into other methods and modes of transit which will increase use of the public system and decrease reliance on the private automobile.
- Proposed design and development of a safe and attractive system of pedestrian and bicycle paths, including Metcalfe Street, designed to ensure linkages into existing networks.
- Potential conversion of Metcalfe Street from one-way north-south to two-way traffic, considering the impacts on the existing Queensway ramping system and changes to the Queensway corridor proposed by the Ministry of Transportation as well as the priorities identified by the National Capital Commission Core Area Master Plan.
- Proposed definition of Metcalfe Street as a major civic boulevard and capital gateway and reinvent as a green boulevard that links the civic realm with the capital realm.
- Proposed streetscape, landscape and public realm improvements on Metcalfe Street for any road and infrastructure renewal program, including cycling strategies and the evolution of Metcalfe Street into a Civic Boulevard.
- Proposed street beautification and streetscaping for Elgin Street and Metcalfe Street.
- Potential streetscaping along Catherine Street, requiring significant tree planting as well as the relocation and/or camouflaging of surface parking lots.
- Proposed Metcalfe Gateway and Canadian Museum of Nature Block Restoration including: elimination of the Metcalfe Street continuation between McLeod Street and Argyle Avenue to create a single expanded park space; re-landscaping the park; create a public gathering space at the front entrance to the museum; and, reconstruction of Metcalfe Street as a civic boulevard.

4.4.7.2 Old Ottawa East Community Design Plan

The Old Ottawa East CDP and accompanying Secondary Plan were completed on August 25, 2011. They include discussion of urban design strategy, streetscape design, pedestrian and cycling routes, sewer/water/storm capacity and management and park and open space planning. The CDP addresses many land use, design and implementation strategies. Some of the elements of the Old Ottawa East CDP and Secondary Plan that pertain to the current study include:

- Proposed for Main Street north of the Queensway: Rationalize the width of travelled lanes in the roadway and transfer any excess to the sidewalks when the City undertakes reconstruction of Main Street in order to provide wider and more attractive sidewalks and to encourage pedestrian traffic along Main Street and Hawthorne Street.
- Proposed for Main Street south of Highway 417 to Springhurst and Immaculata High School: Adapt and reuse the existing school buildings and infill with built form compatible with the contiguous area in the redevelopment of the Ottawa Catholic School Board properties located at 88 Main Street and 20 Graham Street.
- Proposed streetscape improvements, to encourage pedestrian use, that have a traffic function include: widen sidewalks on Main Street; permit parking in the "non-peak" direction on Main Street during peak hours; install angle parking on Harvey Street just east of Main Street; and consider options for the fourth lane should Main Street be narrowed from 4 to 3 lanes.
- Proposed continuing on-street bicycle routes sharing the lane with vehicles. Lane widths for the travelled roadway to be designed to accommodate bicycles at the time of road reconstruction.
- Priority for pedestrian linkages will be given to connect to transit stations and bus stops.
- Potential footbridge over the Rideau Canal as set out in the Cycling and Pedestrian Plans.
- Potential to develop Ballantyne Park for leisure use and as an ornamental landmark.
- Priority to integrate green space and ensure connectivity by: integrate existing trees in the development to the extent possible; and establish east-west pedestrian/cycle paths between Main Street and the Rideau River.

4.5 Previous Studies

Numerous other provincial, municipal and other federal projects and studies have been undertaken within the limits of the current study. The MTO *Highway 417 (Ottawa Queensway) - from Highway 416 Easterly to Anderson Road - Preliminary Design Study and Environmental Assessment - GWP 663-93-00 - Transportation Environmental Study Report (TESR)* completed in January 2007 is of particular relevance to the current study.

The TESR examined the highway mainline (i.e. eastbound and westbound through lanes), as well as all interchanges and crossing streets within the interchange limits and provided a recommended plan to 2021. For the Immediate Study Area this included:

- Minor widening on the north side just west of the Metcalfe Street off-ramp.
- Widening of the Metcalfe Street bridge on the north side, which will require a slight lowering of the profile on Metcalfe Street.
- Widening one lane per direction east of Metcalfe Street.

- Widening of the Elgin Street bridge on the north side.
- Widening of the Rideau Canal bridge on the north side.
- Incorporate retaining walls on the south side between Colonel Drive and Main Street and on the north side from Concord Street North to the Rideau Canal.
- Widen Main Street on both sides, which will require lowering Main Street on the north side.
- Retain the existing basic horizontal and vertical Highway 417 mainline geometry throughout.
- Revise/enhance drainage system to accommodate proposed widening.
- Rehabilitate pavement, bridges, and the illumination system as required.
- Upgrade noise barriers to current standards.
- Replace / enhance landscaping.

The TESR also notes that during the planning horizon of this study (2021), all of the existing bridges will require some form of rehabilitation to maintain their functionality and that typically these bridge rehabilitations will be included with other adjacent work on the mainline or interchanges in order to minimize the overall impact to the public. Finally, the TESR served as the Queensway planning document that facilitated the division of the Queensway into a series of separate Preliminary Design and Environmental Assessment Studies, each with separate TESRs, such as this Study.

5.0 Existing Environmental Conditions

5.1 Natural Environment

5.1.1 Physiography and Topography

The physiography in the Study Area is reportedly limestone plain, drumlinized till plain to the southeast and clay plain to the southwest (Chapman and Putnam, 1984).

The bridge sites are located at an elevation of approximately 70-72 metres above sea level (masl), with an immediate slope to approximately 65 masl on either bank of the Rideau Canal. The Study Area has a gradual slope to the southeast.

See **Contamination Overview Study Report, Appendix D**, Section 2.0, Study Area Description.

5.1.2 Geology

Surficial geology in the Study Area is reportedly glaciomarine and marine deposits from the Pleistocene series of the Quaternary system consisting of silt and clay, basin and quiet water deposits. To the south and east in the vicinity of the canal and river are recent fluvial deposits of the Quaternary system consisting of gravel, sand, silt and clay deposited on modern flood plains. To the west toward Bank Street and east of the Rideau River, surficial geology consists of undifferentiated till, predominantly sandy silt to silt matrix, commonly rich in clasts, and often high in total matrix carbonate content.

Bedrock geology in the Study Area is Paleozoic from the Upper Ordovician (to the east) and Middle Ordovician (moving west to Bank Street) periods, reportedly consisting of shale, limestone, dolostone and siltstone/ sandstone/ arkose.

See **Appendix D**, Section 2.0, Study Area Description of the COS report for a detailed description of the geology.

5.1.3 Surface Water

Surface water flows through the municipal drainage system (i.e. ditches, culverts and sewers). Regionally, surface water flows through the municipal drainage system to discharge at the nearest water body (i.e. Patterson Creek, the Rideau Canal or Rideau River).

See **Appendix D**, Section 2.0 Study Area Description of the COS report for a detailed description of the surface water.

5.1.4 Groundwater

The Study Area is located in a highly urbanized downtown area which is serviced by the City of Ottawa municipal water supply (supply source: Ottawa River- Lemieux Island - well upstream of both the Rideau Canal and River discharge into the Ottawa River). Domestic use of private potable water supply wells is not anticipated. Local groundwater flow in the Study Area is expected to flow towards the nearest water body (i.e. Patterson Creek, the Rideau Canal or Rideau River). Regionally groundwater flow is inferred to be in the south easterly direction toward the Rideau River.

See **Appendix D**, Section 2.0 Study Area Description of the COS report for a detailed description of the groundwater.

5.1.5 Source Water

The Source Water factor was considered for all bridge site LSA's. See **Appendix E** for the Source Water Protection – Source Protection Plan Memorandum.

Review of the Source Protection Plan for the Mississippi-Rideau Source Protection Region, effective January 1, 2015, indicates that the Study Area is within the Mississippi–Rideau Source Protection Region. However, the Study Area is not within an area of Ottawa River Intake Protection Zone. No Wellhead Protection Areas or Intake Protection Zones, collectively referred to as Drinking Water Protection Zones, exist for the Study Area. Therefore, no Source Protection policies apply and no risk management plan is required under the Mississippi-Rideau Source Protection Region Source Water Protection Plan.

It is noted that even though the Study Area is not within an area of Source Water Protection Zones, bridge rehabilitation and/or replacement will need to implement appropriate protection measures as per applicable legislation.

5.1.6 Fish and Fish Habitat

The Fish and Fish Habitat factor was considered to be applicable to the Rideau Canal watercourses for the Rideau Canal LSA. See **Appendix F** for the Fish and Fish Habitat Existing Conditions Report.

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The Rideau Canal is a concrete lined, 30 m wide, 3+ m deep channel that runs through the City's downtown core. Approximately five kilometres upstream it connects directly with the Rideau River but has a separate outlet to the Ottawa River less than one kilometre downstream. The Canal water level is drawn down to an approximate depth of 1.5 m. each fall for the winter ice skating season.

The detailed fish habitat assessment included water chemistry and habitat mapping at two stations. The Canal has a consistent width of approximately 30 m through the reach and two sets of six 1m square concrete piers are located approximately 5 m from the east and west Canal walls. Bike paths run directly along each side of the Canal and there is little or no associated riparian vegetation. During the June 17, 2017 reconnaissance visit, there was no noticeable flow in the Canal, the water had a greenish-brown tint and was quite turbid. The water depth at the west wall was measured at 2.4 m and is assumed to be consistent through the cross section. Aquatic vegetation was beginning to appear on the surface together with filamentous algae; particularly in the vicinity of the Hawthorne Street Bridge located only a few metres upstream.

During the October 22, 2017 detailed field investigation, a suite of water quality tests was conducted at each fish station and results for each measured parameter were well within expected and acceptable ranges.

Background fish species information consisted of Ministry of Natural Resources and Forestry (MNRF) generated data on the Rideau River as well as Parks Canada inventory on fish considered to be at risk in the Rideau Canal system, undertaken by Carlton University and reported in 2009. The Parks Canada study sampling sites were two and five kilometres upstream of the Queensway bridge.

At the two sampling stations, an electrofisher resulted in a total capture of 39 fish, comprising nine species of forage and sport fish, which were also identified in the Carleton University Species at Risk investigation.

The species included Pumpkinseed, Blue Gill, Smallmouth Bass, Rock Bass, Yellow Perch, Johnny Darter, Brown Bullhead, Common Carp and White Sucker. No species are listed under the *Species at Risk Act* (SARA) or *Endangered Species Act* (ESA). However, the ESA lists the Pugnose Shiner, Brindle Shiner, River Redhorse and American Eel in the Ottawa area, with the Carleton University study identifying the River Redhorse in the Canal but located significantly upstream in the Black Rapids Lock to Long Island reach.

The proposed bridge replacement alternatives require the placement of fill in the Canal to create work platforms and to receive the demolished bridge followed by removal of the debris and fill. Subject to Parks Canada navigation requirements, there is the possibility of fishery habitat improvement through the selective retention of the fill in the Canal. This work in the Canal water will need to comply with the MNRF identified January 1 to June 30 restriction on no in-water activities. In addition, contaminated sediments have been identified as being present in the Canal. The Detail Design contract preparation and contract award stages will be required to address these two constraints and schedule work accordingly.

5.1.7 Terrestrial Environment

The Terrestrial Environment review was undertaken for the Queensway right-of- way, the 4 bridge sites and the recommended staging areas for each rapid bridge replacement. See **Appendix G1** for the Terrestrial Environmental Existing Conditions Report.

Inventories were undertaken in order to assess the structure and composition of the existing terrestrial environment, within the Queensway right-of-way and adjacent potential staging areas (for rapid bridge replacement) for each bridge location, and record observations of flora and fauna species encountered.

The Study Area was inspected during three site visits (May 25, June 17 and October 22, 2017) to identify natural heritage features that may be affected by the proposed rehabilitation or replacement of bridges at Metcalfe Street, Elgin Street, the Rideau Canal and Main Street. An additional site visit was completed on September 27, 2022, to inventory trees with the potential to be impacted north of the existing Queensway crossing over the Rideau Canal. The supplemental memo is in **Appendix G2**.

The surrounding lands are fully developed as a downtown urban area. There are no nearby identified environmentally sensitive areas or significant wetlands. Scattered tree groupings and neglected lot fringes offer some "natural" area. The Nicholas Street woodlot offers the largest undisturbed area. The majority of staging areas have been identified under Ontario's Ecological Land Classification System as Mineral Cultural Meadow (CUM1). Invasive species have moved into undisturbed corners and these pockets are classified as Mineral Cultural Thicket (CUT1). The Nicholas Street interchange woodlot at the Nicholas Street interchange is classified as a Dry, Fresh White Birch-Poplar-Conifer Mixed Forest Ecosite (FOM5).

Proposed staging areas for the rigid frame structures (Metcalfe Street, Elgin Street, Main Street Bridges), staging sites E-1, E-2, E-3 and M1, are mainly manicured Kentucky Bluegrass with occasional landscape tree and shrub plantings. There are no natural values evident and therefore a very low potential to sustain native features with the exception of several large, healthy Sugar Maple trees at the west corner of Ballantyne Park. Scrubby trees along the back of the Park on the highway embankment slope could potentially have some (urban) wildlife value.

Rideau Canal bridge staging areas have been identified at Ballantyne Park and the Nicholas Street woodlot.

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Table 1: Terrestrial Habitat Existing Conditions Summary at the Queensway Bridges

Staging Area UTM Coordinates (Zone 18)	Site Description	Proposed Work
E1- North side of ROW between Elgin Street and Queen Elizabeth Driveway E 446431 N 5028979	Rectangular area totally transformed from a natural condition. The site is on fill forming the highway embankment slope on the north side of the Queensway, adjacent to Catherine Street and the Rideau Canal. Lilac shrubs, Red Oak, Red Pine, apple and spruce plantings are concentrated in a grouping closer to the Rideau Canal.	Preparations for staging sites will include total removal of vegetation, and installation of roadway protection to permit temporary excavation and site levelling. The jack-and-slide method will require complete levelling of Staging Areas E1 and E2 and utilization of the entire Ballantyne Park. It may also be necessary to remove trees along the Rideau Canal north of the Queensway bridges and temporarily fill in portions of the Rideau Canal with rock/earth fill, after the annual October draw-down period.
E2 - North side of ROW between Metcalfe Street and Elgin Street E 446324 N 5028938	This triangular area on the north side of the Queensway has been totally transformed from a natural condition, dominated by a ground cover of manicured grass and landscape plantings (pine, spruce, apple, and oak). Manitoba Maple has become established. Area E2 has no natural environment features of significance and exhibits no potential to support any.	
E3 - North side of ROW between O'Connor Street and Metcalfe Street E 446133 N 5028818	Rectangular area totally transformed from a natural condition. The site is on fill forming the highway embankment slope. Vegetation is open grass with scattered Red Oak, Red Pine, White and Blue spruce, none of notable size. Manitoba Maple and Staghorn Sumac occupy neglected areas. A mature Flowering Crab appears to be a survivor of the former railway corridor. There are no natural values evident and therefore a very low potential to sustain native features.	
M1 - Ballantyne Park east of the Canal on the south side of the Queensway fronting on Hawthorne Avenue E 446700	Site consists of manicured grass back to the highway shoulder with several large sugar maple trees at the southwest corner. Several maples along the road are diseased. A cluster of non-native, mature and aesthetically valuable Japanese Lilac trees are located in the central park. A variety of scrubby trees along the back of the Park on the highway embankment slope (Red Pine, White Spruce, Norway Spruce, Norway Maple) are mixed with Manitoba Maple and immature Black Walnuts at a parking lot. This location could	

Staging Area UTM Coordinates (Zone 18)	Site Description	Proposed Work
N 5029022	potentially have some (urban) wildlife value. There are some significant specimen trees.	
M4 – North of Old Town Hall, east of Main Street E 446774 N 5029079	This vacant lot consists of a sparsely wooded area and scrubby understory. Trees appear generally unhealthy and are located primarily on the perimeter of the site to the north, east, and west. Manitoba Maple, Norway Maple, and Green Ash (*Fraxinus pennsyvanica*) dominate, while the understory vegetative community is composed of Goldenrod (*Solidago sp.*) and Riverbank Grape (*Vitis riparia*). Grasses and weedy growth within the ROW run parallel to Main Street. Although the trees offer the potential for bat cavities (none observed), there are no natural values evident and therefore a very low potential to sustain native features.	
Nicholas Street Interchange - Woodlot in Northwest Quadrant E 447027 N 5029463	There is an extensive grassed area in the interchange containing a large woodlot planted by MTO approximately 50 years ago. Another adjacent and large band of woody vegetation is next to a condominium and connected to the woodlot. Aspen poplars have surpassed most other planted species in growth rate; however, numerous specimens of Sugar Maple, Green Ash, White Birch, Basswood and willow also occur. Numerous invasive trees and shrubs have become established along the woodlot edge including Tartarian Honeysuckle, Manitoba Maple, Black Walnut, Staghorn Sumac and Dog-Strangling Vine. In order to utilize the site for rapid replacement it may be necessary to remove a portion or all of the woodlot.	The northwest quadrant has been identified as an assembly and demolition area. The existing Rideau Canal bridges would be removed and transported to this staging area, along the Queensway, for demolition and new bridges assembled for transport to the canal for placement.

5.1.8 Discussion

Following a preliminary review of the Study Area location, MNRF has identified the Rideau River and Canal as the key natural resource values in the general subject area. MNRF did not have any specific information available for any of the proposed staging areas or the Nicholas Street woodlot, nor did they identify any nearby environmentally sensitive areas or significant wetlands. None were noted under the City of Ottawa's Official Plan (2003). Three Earth Science Areas of Natural and/or Scientific Interest (ANSIs) are in the general vicinity 2 km to the east and south, well outside the Study Area.

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Scattered tree groupings of variable size, treed sections of Ballantyne Park and several neglected parking lot fringes offer some semblance of "natural" area in the urban core. The woodlot in the northwest quadrant of the Nicholas Street interchange just beyond the eastern end of the Study Area appears to be 40 to 50 years of age and offers the largest undisturbed stand of woody vegetation in the Study Area. It appears to have been planted following highway construction in the 1970s and has been expanding in size since then. The woodlot is not present on a 1969 aerial photograph.

Vegetation Communities

Plant communities in staging areas E1, E2, E3 and M1 are by-and-large considered Mineral Cultural Meadow (CUM1) Eco sites, reflecting the urban nature of the sites with occasional landscape plantings. Several smaller, undisturbed corners have been invaded by aggressive species including Staghorn sumac and black walnut and could be classified more accurately as Mineral Cultural Thicket (CUT1). The vacant wooded lot comprising Staging Area M4 would appear to meet the definition of Cultural Woodland (CUW). The large woodlot at the Nicholas Street interchange, however, would appear to fit the Dry, Fresh White Birch-Poplar-Conifer Mixed Forest (FOM5) Ecosite definition, as a young early succession forest following disturbance (planting).

Although several tree specimens are approaching 45 cm+ in DBH and are in fair to good condition within the Study Area (Nicholas Street woodlot, north of the Queensway along the Rideau Canal, in front of buildings on Queen Elizabeth Driveway and Colonel By Drive and the specimen red oak in the northeast quadrant of the Rideau Canal bridges), none would qualify for City of Ottawa's Honour Role Trees (= or >50 cm DBH).

Avifauna

The Study Area provides a highly disturbed and urbanized mix of habitat for bird species. Few native birds were seen utilizing the sites during any of the site visits. One Black-Capped Chickadee (*Poecile atricapillus*) was observed in Ballantyne Park (coming in from the adjacent residential area) and an American Goldfinch (*Spinus tristis*) perched momentarily in a Manitoba maple along the north right-of-way. No doubt the occasional Starling (*Sturnus vulgaris*), American Robin (*Turdus migratorius*) or Red-Winged Blackbird (*Agelaius phoeniceus*) nests in the tangle along the highway here, as they do commonly everywhere, but none were evident. Nesting birds are not an issue at any of the sites; however, if trees need to be cut down during nesting season (April 1 through August 31) at whatever sites are to be impacted, it will be necessary to do a 'just before' survey for nesting native migratory birds. The conclusion is that there is neither faunal significance – nor potential for significant terrestrial species - for any of the highly disturbed sites, with the possible exception of the Nicholas Street woodlot.

The undersides of all bridges at Main Street, Metcalfe Street, Elgin Street and the Rideau Canal were inspected on June 17, 2017 for the possible presence of Barn Swallow (*Hirundo rustica*) nests. The under-surfaces are smooth concrete, which appears to have made it impossible to attach nests. No nests were observed. The pier caps of the Rideau Canal bridges have suitable horizontal and vertical surfaces available for nests; however, no nests were observed. A Rock Pigeon (*Columba livia*) and Starling were observed, perched momentarily on the west pier cap, during the inspection.

Of the identified avian SAR for the Study Area, one or more of the bats, Chimney Swifts and Peregrine Falcons could possibly be resident. None of the aforementioned were observed on any of the field visits.

Species at Risk (SAR)

The Natural Heritage Information Centre (NHIC) and internal records at the MNRF have indicated that there is a potential for the following threatened (THR) or endangered (END) terrestrial species to be present in the Study Area.

- Barn Swallow (THR)
- Butternut (END)
- Chimney Swift (THR)
- Eastern Small-Footed Myotis (END)
- Northern Long-Eared Bat (END)
- Tricoloured Bat (END)

These Species at Risk (SAR) are identified as native plants or animals in danger of extinction and are either protected by the federal *Species at Risk Act* (SARA, 2002) or the Provincial *Endangered Species Act* (ESA, 2007).

Two Special Concern (SC) species have been documented to occur either on the site or nearby. Although not protected under the ESA, 2007, they are protected under the *Fish and Wildlife Conservation Act* and/or *Migratory Birds Convention Act*.

- Peregrine Falcon (SC)
- Snapping Turtle (SC)

MNRF has indicated that breeding birds may be present on site. The *Migratory Birds Convention Act* and the ESA may be triggered if these birds are affected. Negative impacts may be avoided by clearing vegetation, outside of the breeding bird season (April 1 – August 31), or by surveys conducted by a qualified professional, to ensure no breeding birds are present before clearing of vegetation.

They also identify that no work should occur in turtle overwintering habitat from October 16th – March 15th, in order to protect hibernating turtles. Turtles can be found travelling on land during the active season (April 1st – October 30th). If the proposed works are to occur during these times, the MNRF recommends fencing off the site, prior to work being undertaken and prior to the nesting period (April 1), in order to prevent turtles from accessing the site. The Terrestrial Environmental Existing Conditions Report**, Appendix G1, Table 1,** outlines the SAR that could possibly be present in the Study Area.

MNRF suggests in their correspondence that cumulative effects of infrastructure development projects be given due consideration, including evaluation of past, present and possible future impacts of transportation improvements on surrounding areas.

Tree/Woodlot/Wildlife Significance

A surprising amount of woody vegetation and particularly small areas of semi-natural vegetation occur throughout the Study Area in isolated, often neglected locations. None of these areas would be considered significant on their individual merits. The exception, however, would be the Nicholas Street woodlot, which, due to its size (just under 1 hectare) and proximity to the downtown core, could identify this 'large' tract as significant, certainly within this study's context.

There are no nearby identified environmentally sensitive areas, ANSIs or significant wetlands noted by MNRF or under the City of Ottawa's Official Plan. With the exception of the Nicholas Street woodlot, the Study Area provides a highly disturbed and urbanized mix of habitat for bird and mammal species. Nesting birds are not an issue at any of the bridges (Barn Swallows). Aside from the larger tree specimens closer to the Rideau Canal on the north side of Highway 417, there are no natural values or features evident, at any of the proposed staging areas near the canal, and therefore there is a very low potential to sustain native features and significant natural environment values. The scrubby trees along the back of the Park are one of the few locations in the immediate vicinity of the bridges that could potentially have some urban wildlife value. Retention/protection of several specimen trees scattered through the Study Area would be preferred.

The woodlot in the northwest quadrant of the Nicholas Street interchange in the eastern end of the Study Area offer the largest undisturbed stands of woody vegetation and could be considered as significant. None of the individual trees are exceptional. Wildlife habitat opportunities for small mammals and songbirds, tolerant of the urban environment, are very good considering the area's isolated location away from human interference. Several of the bat species may utilize the area, given the perching opportunities in the woody vegetation.

Preparations for staging sites that are under consideration for Elgin Street, Metcalfe Street and Main Street bridge replacements (E1, E2, E3, M1 and M4) will essentially include total removal of vegetation, followed by roadway protection to permit temporary excavation and levelling of the site. Several Queensway Rideau Canal bridge replacement construction alternatives have been reviewed and recommended for further consideration. They may require the full utilization/levelling of Staging Areas E1, E2, M1 and M2, as well as tree removals to the north of the Rideau Canal bridges. In order to prepare the site for demolition and bridge replacement, temporary filling of the canal with rock/earth fill may be necessary. In order to assemble replacement bridges at the Nicholas Street interchange it may be necessary to clear a portion or perhaps all of the existing woodlot coverage in the northeast quadrant.

A figure that identifies potential vegetation disturbance areas, particularly if rapid removal techniques are employed for the canal bridge replacements, can be found in Terrestrial Environmental Existing Conditions Report, **Appendix G1**.

5.2 Cultural Environment

5.2.1 Archaeological Resources

The Archaeological Assessment has been undertaken in two components. The first component was the assessment of the entire Local Study Area (LSA) constituting the Queensway right-of-way; see **Appendix H1** for the Stage 1 Archaeological Assessment Report**.** The second component was the marine archaeological assessment of the previous railway swing bridges located in the Canal, under the current Rideau Canal Bridge; see **Appendix H2** for the Underwater Archaeological Assessment**.**

Right-of-Way Archaeological Assessment

The Stage I Archaeological Assessment found that the entire MTO Queensway EA Archaeological Project Area within the Queensway right-of-way, including proposed staging sites E-1, E-1e, E-2, E-3, E-4, M1, M4 and M5, has been

subject to extensive and deep land alterations that have severely damaged the integrity of any potential archaeological resources, and therefore does not require further archaeological assessment.

The Stage I Archaeological Assessment recommended that should the proposed staging areas not be found appropriate and previously rejected staging areas M2, M3 and M6 be selected and as such subjected to ground disturbing activities during this project, additional archaeological work (Stage 2 Property Survey) will be required. This assessment must be undertaken by an archaeologist licensed in the Province of Ontario. Based on the existing landscape conditions, the Stage 2 Assessment of these areas will require the excavation of mechanical trenches (1 m x 4 m) using a backhoe or equivalent heavy machinery.

Marine Archaeology in the Canal in the Vicinity of Queensway Bridge

Parks Canada reported a total of three railway bridges have been erected over time at the site. The first was the early railway swing bridge built in 1882 by the Canadian Atlantic Railway (CAR). This bridge was replaced in 1912 with a similar bridge built by the Grand Trunk Railway (GTR). The current bridge spanning the Rideau Canal in this location was built in by MTO in 1965.

Parks Canada requested a Marine Archaeology Assessment of these previous railway bridges in the Canal based on no remaining evidence above the canal water level, coupled with the proposed Canal bed disturbance caused by new bridge construction and rapid bridge deck removal (demolition of the concrete and dropping the debris into the Canal and subsequent removal from the Canal).

Background research provided additional information regarding the construction of the swing bridges, and of an accident in the Rideau Canal at this location. The background research was complemented by a field visit where photographs of the Rideau Canal section were taken in an effort to determine if there were any visible signs of the former swing bridges. There was no tangible evidence of any of the former swing bridges on the Canal walls, or in the Canal (at draw-down water level) in the main section or the adjacent upper and lower reaches. No in-Canal work was conducted due to the level of contamination present in the sediments. See **Appendix H2** for the report**.**

Based on the background research, and the current condition of the canal, the following recommendations have been made:

1. There is no requirement for further archaeological assessment of the Study Area, including the adjacent upper and lower reaches on either side of the Queensway bridge.
2. If bridge replacement is approved by Parks Canada, and any archaeological resources are located during the construction phases, all work is to be halted and Parks Canada immediately notified. Based on their investigation of the "discovered" archaeological features/material, Parks Canada will recommend next steps to the proponent.

5.2.2 Built Heritage and Cultural Heritage Resources

The Cultural Heritage Assessment focuses on the context of the bridges and the potential staging areas for construction within a defined Study Area, specifically identifying and evaluating the built and cultural heritage landscape features. See Context Sensitive Design Section of 30% Update Report, **Appendix B.**

The Study Area contains a variety of built and cultural landscape resources that have been added over time as the changes from canal to railway to roads and trails have occurred in the transportation systems that connect the district with the community outside the Study Area.

Noted is the Rideau Canal which was designated a World Heritage Site (WHS) in 1996 and its Management Plan was updated and approved in 2005. The Rideau Canal WHS lands are owned by the Government of Canada and administered by Parks Canada. The World Heritage Site designation is based on the Outstanding Universal Value of the Canal, a rare example of a 202 km long slack water canal, built in the early 1800s and still in operation. The Canal has also been designated nationally. In addition to the WHS Management Plan there is also a 2005 Management Plan for the Rideau Canal National Historic Site (NHS). The NHS Management Plan describes the designated place as consisting of the lands and waters under the jurisdiction of Parks Canada including the bed of the Rideau Canal to the high-water mark between the Ottawa River and the harbour in Kingston. All work on the canal components is to follow best practices in the field of heritage conservation and the Standards and Guidelines for the Conservation of Historic Places in Canada (Parks Canada, 2nd Edition).

5.2.3 Scenic Entry Routes and Significant Views

The NCC advised at the initial Federal Advisory Committee meeting that Metcalfe Street was considered by the NCC as the "Gateway" entrance to Parliament Hill.

The City of Ottawa OP Schedule I – Multi-Use Pathways and Scenic/Entry Routes – Urban, indicates three (3) scenic entry routes within the BSA, those being the Queensway, Queen Elizabeth Drive and Colonel By Drive. According to the OP, scenic entry routes link major tourist, recreation, heritage and natural environment destinations in and beyond Ottawa.

5.3 Socio-Economic Environment

5.3.1 Land Use

A complete discussion of Land Use within the BSA, ISA and LSA's can be found in the **Land Use Report, Appendix C**. A summary of land uses within the BSA and LSA's follows.

5.3.1.1 City Of Ottawa Land Use Zoning

The following is a brief description of the land use zoning in the vicinity of the LSA's as found in the City of Ottawa Zoning By-law; refer to the City of Ottawa Zoning By-law for full description and details on permitted uses and provisions:

- **Residential (R):** The residential zones include R1- Residential First Density (detached dwellings), R2- Residential Second Density (two-unit dwellings), R3- Residential Third Density (townhouse dwellings), R4- Residential Fourth Density (low rise apartments), R5- Residential Fifth Density (mid/high-rise apartments) and RM- Mobile Home. These zones are all considerer residential for this study.
- **Institutional (I1):** The purpose of the I1- Minor Institutional Zone is to permit a range of community uses, institutional accommodation and emergency service uses to locate in areas designated as General Urban Area or Central Area in the Official Plan, and minimize the impact of these minor institutional uses located

in close proximity to residential uses by ensuring that the such uses are of a scale and intensity that is compatible with neighbourhood character.

- **Open Space (O):** The purpose of the O1- Parks and Open Space Zone is to permit parks, open space and related and compatible uses to locate in areas designated as General Urban Area, General Rural Area, Major Open Space, Mixed Use Centre, Village, Greenbelt Rural and Central Area as well as in Major Recreational Pathway areas and along River Corridors as identified in the Official Plan, and ensure that the range of permitted uses and applicable regulations is in keeping with the low scale, low intensity open space nature of these lands.
- **Leisure (L):** The leisure zones include L1- Community Leisure (urban local facilities), L2- Major Leisure Facility (urban City-wide facilities) and L3- Central Experimental Farm Zones. The purpose of the L1- Community Leisure Facility Zone is to: permit recreational uses that meet the needs of the surrounding community to be located on land designated as General Urban Area, Major Open Space, Mixed Use Centre and Central Area in the Official Plan; and impose regulations which ensure that the scale and intensity of these uses is compatible with any adjacent residential uses. The purpose of the L2- Major Leisure Facility Zone is to: accommodate major, urban City-wide sports, recreational and cultural facilities addressed under the Major Urban Facilities policies of the Official Plan; permit a broad range and intensity of leisure, recreational, cultural and related uses; and allow a moderate density and scale of development.
- **General Mixed (GM):** The purpose of the GM – General Mixed-Use Zone is to: allow residential, commercial and institutional uses, or mixed use development in the General Urban Area and in the Upper Town, Lowertown and Sandy Hill West Character Areas of the Central Area designations of the Official Plan; limit commercial uses to individual occupancies or in groupings in well-defined areas such that they do not affect the development of the designated Traditional and Arterial Mainstreets as viable mixed-use areas; permit uses that are often large and serve or draw from broader areas than the surrounding community and which may generate traffic, noise or other impacts provided the anticipated impacts are adequately mitigated or otherwise addressed; and impose development standards that will ensure that the uses are compatible and complement surrounding land uses.
- **Local Commercial (LC):** The purpose of the LC– Local Commercial Zone is to: allow a variety of small, locally-oriented convenience and service uses as well as residential uses in the General Urban Areas and in the Residential Character Areas of the Central Area designations of the Official Plan; restrict the non-residential uses to individual occupancies or in groupings as part of a small plaza that would meet the needs of the surrounding residential areas; provide an opportunity to accommodate residential or mixed uses development; and impose development standards that will ensure that the size and scale of development are consistent with that of the surrounding residential area.
- **Traditional Mainstreet (TM):** The purpose the TM– Traditional Mainstreet Zone is to: accommodate a broad range of uses including retail, service commercial, office, residential and institutional uses, including mixed-use buildings but excluding auto-related uses, in areas designated Traditional Mainstreet in the Official Plan; foster and promote compact, mixed-use, pedestrian-oriented development that provides for access by foot, cycle, transit and automobile; recognize the function of Business Improvement Areas as primary business or shopping areas; and impose development standards that will ensure that street continuity, scale and character is maintained, and ensure that the uses are compatible and complement surrounding land uses.

In addition to the provisions of the underlying zone, the following is a brief description of the overlays for land use zoning in the vicinity of the LSA's as found in the City of Ottawa Zoning By-law; refer to the City of Ottawa Zoning By-law for full description and details on permitted uses and provisions:

- **Heritage:** The heritage overlay applies to land uses in order to encourage the retention of existing heritage buildings by offering zoning incentives to reuse the buildings, and to limit the size and location of additions to preserve the heritage character of the original building. General provisions include: where a building in an area to which a heritage overlay applies is removed or destroyed it must be rebuilt with the same character and at the same scale, massing, volume, floor area and in the same location as existed prior to its removal or destruction.
- **Mature Neighbourhoods:** The mature neighbourhoods overlay applies to all residential uses other than mid-rise and high-rise apartment building, in all zones where the proposed dwelling type is permitted but does not apply to non-residential development. In the Mature Neighbourhoods, "Your street gives you your rules". In addition to the regular zoning that applies to a residential property, certain rules are based on the streetscape. To determine zoning requirements and permissions, a Streetscape Character Analysis is required. An innovative way of thinking about what really matters in mature neighbourhoods, the planning focus is on the similarities between the many lots along the street and on methods to emphasize and reinforce those key attributes that give the street its sought-after look.

5.3.1.2 BSA Existing Land Use

Land uses found to apply within the BSA are described in the following sections.

5.3.1.2.1 Residential

There are many residential areas within the BSA. Neighbourhoods within the BSA are defined by the community associations or historical delineations, the main neighbourhoods (and their representative associations) are:

- Action Sandy Hill/Action Cote-de-Sable
- Lowertown Community Association
- Centretown Citizens' Community Association
- Dalhousie Community Association
- Dow's Lake Residents' Association
- Glebe Annex Community Association
- Glebe Community Association
- (Old) Ottawa East Community Association
- Old Ottawa South Community Association
- Rideau River Residence Association

Municipal wards are defined by the City of Ottawa political boundaries. There are three (3) main municipal wards within the BSA:

- Ward 12 – Rideau-Vanier
- Ward 14 – Somerset

- Ward 17 – Capital

The eastern/southern limits of the BSA also encroach onto to adjacent wards of: Ward 13 – Rideau-Rockcliffe and Ward 18 – Alta Vista.

5.3.1.2.2 Commercial and Tourism

There are many commercial and tourism areas throughout the BSA. Commercial areas are generally concentrated in lands designated general urban area, central area, mixed use centre, and traditional mainstreet. Some facilities of importance include:

- Ottawa City Hall at 110 Laurier Avenue West
- Lansdowne Park at 945 Bank Street

Tourism areas are found throughout the BSA; downtown Ottawa is a tourism destination for the National Capital. The Rideau Canal, Rideau River and Dow's Lake are all tourist attractions. The Canadian Museum of Nature and Billing's Estate National Historic Site are within the BSA and numerous other museums and national historic sites are present north of the BSA in the vicinity of Parliament Hill.

Vibrant commercial and tourism areas are promoted by local business improvement areas (BIA's) as recognized by the City of Ottawa. There are six (6) BIA's within the BSA:

- Downtown Rideau BIA
- Bank Street BIA
- Preston Street BIA
- Somerset Street Chinatown BIA
- Somerset Village BIA
- Glebe BIA

5.3.1.2.3 Community, Institutional and Leisure

Community, institutional and leisure land uses may include such facilities as: schools, places of worship, community centres, libraries and recreation facilities, as provided in **Table 1**.

Table 1: Community, Institutional and Leisure Facilities:

Facility	Name and Location
Schools	• Adult High School, 300 Rochester Street • Astolot Education Centre, 1159 Bank Street • Corpus Christi School, 798 Lyon Street • Ecole Lycee Claudel, 1633 Riverside Drive • Elgin Street Public School, 310 Elgin Street • First Avenue Public School, 73 First Avenue • Glebe Collegiate Institute, 212 Glebe Avenue • Glebe Montessori School, 269 First Avenue • Hopewell Avenue Public School, 17 Hopewell Avenue

Facility	Name and Location
	• Immaculata High School, 140 Main Street • Lady Evelyn Alternative School, 63 Evelyn Avenue • Lisgar Collegiate Institute, 29 Lisgar Street • Mutchmor Public School, 185 Fifth Avenue • Ottawa Montessori School, 945 Bank Street • Saint Paul University, 223 Main Street • St Nicholas Adult High School, 88 Main Street • University of Ottawa, 75 Laurier Avenue East • Viscount Alexander Public School, 55 Mann Avenue • Westboro Academy, 100 Brewer Way
Places of Worship	• All Nations Church - Central Ottawa, Church, 119 Osgoode Street • Calvary Baptist Church, Baptist Church, 107 Main Street • Calvary Fellowship of Ottawa, Church, 315 Lisgar Street • Canadian Martyrs Parish, Catholic Church, 100 Main Street • Centretown United Church, Christian Church, 507 Bank Street • Christian Science, Church, 141 Laurier Avenue West • Christian Science, Church, 288 Metcalfe Street • Church Council On Justice and Corrections, Religious Organization, 223 Main Street • Church of the Ascension, Religious Institution, 253 Echo Drive • Church of the Blessed Sacrament, Catholic Church, 194 Fourth Avenue • Diocese Anglican D'Ottawa, Religious Organization, 154 Somerset Street West • Dominion-Chalmers United Church, Church, 355 Cooper Street • Ecclesiax, Church, 2 Monk Street • Eglise Unie St-Marc, Church, 142 Lewis Street • First Baptist Church, Baptist Church, 140 Laurier Avenue West • First Church of Christ, Scientist, Christian Church, 288 Metcalfe Street • Fourth Avenue Baptist Church, Baptist Church, 109A Fourth Avenue • Grace City Church Ottawa, Church, 380 Elgin Street • Holy Korean Martyrs, Religious Organization, 254 Argyle Avenue • Iblates of Mary Immaculate, Church, 100 Main Street • Immaculate Heart of Mary Roman Catholic Church, 1758 Alta Vista Drive • Knox Presbyterian Church, Presbyterian Church, 120 Lisgar Street • Metropolitan Andrey Sheptytsky Institute of Eastern Christian Studies, St. Paul University, 223 Main Street • Mountain of Fire and Miracles Ministries Ottawa, Place of Worship, 202 Terminal Avenue • My Church, Church, 425 Marché Way • New Covenant Apostolic Church, Apostolic Church, 174 First Avenue • Ottawa Chinese Bible Church, Evangelical Church, 31 Graham Avenue • Ottawa Chinese United Church, Church, 600 Bank Street • Peace Latvian Ev Lutheran Church, Church, 83 Main Street • Sacré-Coeur, Catholic Church, 591 Cumberland Street • Sagrada Familia Parish/ Holy Family Parish, Catholic Church, 152 Glenora Street • Saint Margaret Mary Parish, Catholic Church, 7 Fairbairn Street

Facility	Name and Location
	• Southminster United Church, Church, 15 Aylmer Avenue • St James United Church, United Church of Canada, 650 Lyon Street South • St John the Evangelist Anglican Church, Anglican Church, 154 Somerset Street West • St Matthew's Anglican Church, Anglican Church, 217 First Avenue • St. Giles Presbyterian Church, Christian Church, 174 Bank Street • St. Joseph's Church, Catholic Church, 174 Wilbrod Street • St. Peter & St Paul's Church (Anglican), Anglican Church, 152 Metcalfe Street • St. Theresa's Catholic Church, Catholic Church, 95 Somerset Street West • Sunnyside Wesleyan Church, Wesleyan Church, 58 Grosvenor Avenue • The Journey, Christian Church, 15 Aylmer Avenue • The Meeting House Ottawa, Church, 325 Marché Way • Trinity Anglican Church, Anglican Church, 1230 Bank Street • Union City Church, Church, 2 Monk Street
Community Centres	• Ottawa South Community Centre, 260 Sunnyside Avenue • Ottawa East Community Centre, 61 Main Street • Sandy Hill Community Centre, 250 Somerset Street • St Luke's Community Centre: Bethell Fieldhouse, 166 Frank Street • Jack Purcell Community Centre, 320 Jack Purcell Lane • Glebe Community Centre, 175 Third Avenue
Libraries	• Ottawa Public Library, Sunnyside Branch, 1049 Bank Street
Recreation Facilities (Swimming pools, parks, skating rinks, tennis courts, sports fields, etc.)	• Ballantyne Park, 31 Hawthorne Avenue • Bellwood Parkette, 100 Bellwood Avenue • Brantwood Park, 39 Onslow Crescent • Brewer Park, 100 Brewer Way • Brighton Beach Park, 30 Brighton Avenue • Brown's Inlet Park, 65 Craig Street • Capital Park, 10 Ela Street • Cancer Survivors Park, 1480 Alta Vista Drive • Chamberlain Park, 80 Chamberlain Avenue • Central Park, 19 Clemow Avenue • Dale Park, 1590 Alta Vista Drive • Dalhousie South Park, 343 Bell Street South • Exploration Garden, 661 Bank Street • Fifth Avenue Parkette, 183 Forth Avenue • Glebe Memorial Park, 75 Glendale Avenue • John Murphy Park, 120 Rodney Crescent • Lansdowne Park Complex, 945 Bank Street • Lansdowne Park, 450 Queen Elizabeth Drive • Linda Thom Park, 1324 Bank Street • Lionel Britton Park, 19 Fifth Avenue • Marion Dewar Plaza, 110 Laurier Avenue West • Minto Park, 315 Elgin Street • Osborne Park, 21 Osborne Street • Patterson's Creek Park, 524 O'Connor Street

Facility	Name and Location
	• Percy Taverner Park, 130 Woodbine Place • Raymond Chabot Grant Thornton Park, 300 Coventry Road • Rideau River Islands, 2308 Riverside Drive • Rideau River Trail, 166 Lees Avenue • Robert F. Legget Park, 321 Main Street • Sandy Hill Arena, 60 Mann Avenue • Sandy Hill Park, 250 Somerset Street • Senator Eugene Forsey Park, 964 Bronson Avenue • Sylvia Holden Park, 641 O'Connor Street • Springhurst Park, 24 Brunswick Street • St. Germain Park, 86 Templeton Street • St James Tennis Courts, 690 Lyon Street South • Jack Purcell Park, 320 Jack Purcell Lane • St. Luke's Park, 166 Frank Street • Windsor Park Ottawa, 1B Windsor Avenue

5.3.1.2.4 Emergency Services

Emergency service facilities include emergency medical services (EMS) stations, fire stations, hospitals, police centres and polices stations. The emergency service facilities within the BSA include:

- EMS, 103 Catherine Street
- Fire Station 12 – Glebe, 10 Fifth Avenue
- Fire Station 56 – Overbrook, 275 Coventry Road
- Ottawa Hospital – Riverside Campus, 1919 Riverside Drive
- Police Provincial Court Office, 161 Elgin Street
- Police Centre Centretown Community, 110 Laurier Avenue West
- Police Central Headquarters, 474 Elgin Street

5.3.1.3 Land Uses in the Local Study Areas (LSA)

5.3.1.3.1 Metcalfe Street Bridge LSA Specific Land Uses

City of Ottawa zoning and land use are shown in **Figure 7** and described below.

North of the Queensway, the land is zoned general mixed, leisure and institutional. Within the general mixed zone to the northeast are residences and commercial office buildings (subject to the heritage overlay), and to the northwest are multi-story buildings with mixed residential/commercial use (subject to the heritage overlay), including an EMS station. Within the leisure zone to the north/northwest is a YMCA and the Canadian Museum of Nature (subject to the heritage overlay). Within the institutional zone to the northeast is the Ottawa Police Central Headquarters.

South of the Queensway, the land is zoned general mixed and residential. Within the general mixed zone to the southeast are commercial buildings including a Loblaws, LCBO and TD Canada Trust Bank, and to the southwest are

condos, a retirement residence and commercial use including an automotive service station and restaurants. Within the residential zones to the southwest are detached houses.



Figure 7: Land Use in vicinity of Metcalfe Street Bridge LSA

5.3.1.3.2 Elgin Street Bridge LSA Specific Land Uses

City of Ottawa zoning and land use are shown in **Figure 8** and described below.

North of the Queensway, the land is zoned general mixed, institutional, leisure, open space and residential. Within the general mixed zone to the northwest are residences and office buildings. Within the institutional zone to the northwest is the Ottawa Police Central Headquarters. Within the residential zones to the northeast are detached residences and apartment buildings. Within the leisure and open space zones to the north/northeast is open space/park with pathways.

South of the Queensway, the land is zoned general mixed and open space. Within the general mixed zone to the southwest are commercial buildings including a Loblaws, LCBO and TD Canada Trust Bank. Within the open space zone to the southeast is open space/park with pathways.



Figure 8: Land Use in vicinity of Elgin Street Bridge LSA

5.3.1.3.3 Rideau Canal Bridge LSA Specific Land Uses

City of Ottawa zoning and land use are shown in **Figure 9** and described below.

North of the Queensway, the land is zoned leisure, open space and residential. Within the residential zones to the northeast are row housing and condo/apartment buildings. Within the residential zones to the northwest are detached residences and apartment buildings. Within the leisure and open space zones to the northeast/northwest is open space/park with pathways.

South of the Queensway, the land is zoned open space, general mixed and traditional mainstreet. Within the general mixed zone to the southeast the land is vacant. Within the traditional mainstreet zone to the southeast is vacant land adjacent to the highway as well as mixed retail, commercial, office and residential properties, including Royal Oak restaurant, bicycle shop, travel agency and dental office. Within the open space zone to the southeast/southwest is open space/park with pathways.

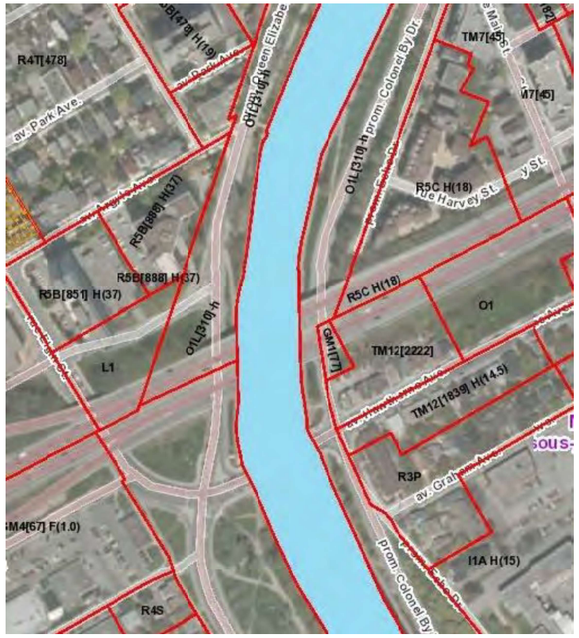


Figure 9: Land Use in vicinity of Rideau Canal Bridge LSA

5.3.1.3.4 Main Street Bridge LSA Specific Land Uses

City of Ottawa zoning and land use are shown in **Figure 10** and described below.

North of the Queensway, the land is zoned residential and traditional mainstreet. Within the residential zones to the northeast are detached/semi-detached residences. Within the residential zones to the northwest are row housing and condo/apartment buildings. Within traditional mainstreet zone to the north are mixed retail and residential properties, including a furniture store, detached residences and condos.

South of the Queensway, the land is zoned open space, leisure, traditional mainstreet and residential. Within the open space zone to the southwest is Ballantyne Park. Within the traditional mainstreet zone to the southeast is vacant land adjacent to the highway as well as mixed retail, commercial and community properties including construction office, Scotiabank, fitness studio, hair cutters, restaurants, bicycle shop, nail salon, Ottawa Chinese Bible Church and Peace Latvian Ev Lutheran Church. Within the leisure zone to the southeast is the Old Town Hall and community centre (subject to the heritage overlay). Within the residential zone to the southeast is vacant land adjacent to the highway as well as detached/semi-detached residences.



Figure 10: Land Use in vicinity of Main Street Bridge LSA

5.3.1.3.5 Metcalfe and Elgin Streets Potential Staging Areas Specific Land Uses

The specific land uses at, and adjacent to, each potential staging area are shown in **Figure 11** and described as follows:

- **Staging Area E-1 (E-1e):** The land within the staging area is zoned leisure and open space, and is currently vacant as well as a portion of Catherine Street. The potential staging area is bordered by residential zoned apartment buildings to the north, Queen Elizabeth Drive and open space zoned park with pathways to the east, Queensway to the south and Elgin Street and institutional zoned vacant land/Ottawa Police Central Headquarters to the west.
- **Staging Area E-2:** The land within the staging area is zoned institutional and is currently vacant. The potential staging area is bordered by Catherine Street and institutional zoned vacant land/Ottawa Police Central Headquarters to the north, Elgin Street and leisure/open space zoned vacant land to the east, Queensway/vacant land to the south and Metcalfe Street and general mixed zoned vacant land/multi-story buildings with mixed residential/commercial use, including an EMS station, to the west.
- **Staging Area E-3:** The land within the staging area is zoned general mixed and is currently vacant. The potential staging area is bordered by general mixed and leisure zoned YMCA and multi-story buildings with mixed residential/commercial use, including an EMS station, Metcalfe Street, vacant land and a highway off-ramp to the east, Queensway to the south and Elgin Street and general mixed zoned parking lots to the west.
- **Staging Area E-4:** The land within the staging area is zoned institutional and is currently vacant. The potential staging area is bordered by institutional zoned vacant land, Catherine Street and the Ottawa Police Central Headquarters to the north, Elgin Street and leisure/open space zoned vacant land to the east,

Queensway to the south and Metcalfe Street and general mixed zoned vacant land/multi-story buildings with mixed residential/commercial use, including an EMS station, to the west.

Metcalfe Street

Three Staging Areas, **E-1, E-1e, E-2 and E-3**, are recommended to be carried forward as feasible staging areas and are shown by a circle around each site number in **Figure 11.**

Rideau Canal Bridge

Two Staging Areas, **E-1** and **E-1e**, are recommended to be carried forward as feasible staging areas on the west side of the Canal and shown by a circle around two of the three site numbers in **Figure 13**.

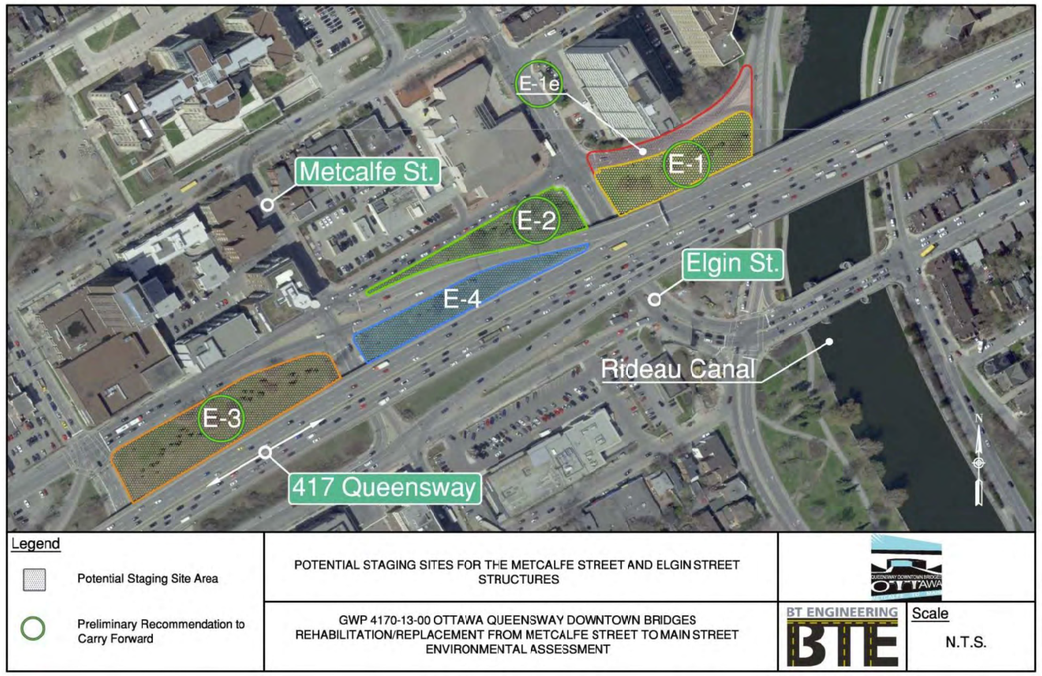


Figure 11: Potential Staging Sites for the Metcalfe Street and Elgin Street Bridges

GWP 4170-13-00
Queensway Downtown Bridges, Ministry of Transportation
Summary of Environmental Conditions Report
October 2022

5.3.1.3.6 Main Street and Rideau Canal Bridges Potential Staging Areas Specific Land Uses

The specific land uses at, and adjacent to, each potential staging area are shown in **Figure 12** and described as follows:

- **Staging Area M-1:** The land within the staging area is zoned general mixed, traditional mainstreet and open space, and is currently vacant and Ballantyne Park. The potential staging area is bordered by Queensway to the north, Main Street and traditional mainstreet/leisure zoned vacant land, construction office, restaurant, and Old Town Hall and community centre to the east, Hawthorne Avenue and traditional mainstreet zoned mixed retail, commercial, office and residential properties to the south and Colonel By Drive and open space zoned park with pathways to the west.
- **Staging Area M-2:** The land within the staging area is zoned institutional and is currently paved parking lots at 20 Graham Avenue, 88 Main Street, 100 Main Street and a portion of 140 Main Street. The potential staging area is bordered by Graham Avenue and institutional and residential zoned residences, St. Nicholas Adult High School Central Campus and the Ottawa Chinese Bible Church to the north, Main Street and traditional mainstreet/residential zoned mixed residential/retail and the Peace Latvian Ev Lutheran Church to the east, institutional zoned Canadian Martyrs Catholic Church and Immaculata High School to the south and institutional/residential zoned Church of the Ascension and residences to the west.
- **Staging Area M-3:** The land within the staging area is zoned institutional and is currently paved parking lots on a portion of 140 Main Street. The potential staging area is bordered by institutional zoned Canadian Martyrs Catholic Church and Immaculata High School property to the north, Main Street and traditional mainstreet zoned mixed residential/commercial, automotive service centre and the Calvary Baptist Church to the east, institutional zoned Canadian Martyrs Catholic Church and Immaculata High School athletic field to the south and institutional zoned Immaculata High School buildings to the west.
- **Staging Area M-4:** The land within the staging area is zoned residential and is currently vacant. The potential staging area is bordered by Queensway to the north, residential zoned residences to the east and south and Main Street and traditional mainstreet/open space zoned, vacant land, construction office, and restaurant to the west.
- **Staging Area M-5:** The land within the staging area is zoned residential and traditional mainstreet and is currently vacant. The potential staging area is bordered by Harvey Street and residential zoned residential to the north and east, Queensway to the south and Main Street and traditional mainstreet zoned vacant land/mixed retail and residential properties to the west.
- **Staging Area M-6:** The land within the staging area is zoned traditional mainstreet and is currently the parking areas from 40 to 48 Main Street and the detached residence at 44 Main Street. The potential staging area is bordered by traditional mainstreet zoned residences/condos to the north, Main Street and traditional mainstreet zoned mixed retail and residential properties to the east, traditional mainstreet zoned residential/commercial to the south and residential zoned detached/semi-detached residences to the west.

Main Street

Two Staging Areas, **M-1**and **M-4,** are recommended to be carried forward as feasible staging areas and are shown by a circle around the two site numbers in **Figure 12.**

Rideau Canal Bridge

One construction area is recommended for the Rideau Canal Bridge Technically Preferred Alternative: Jack and Slide from the Sides. Staging areas E-1/E-1e and M-1 are required as part of the bridge construction laydown areas, as shown in **Figure 13**. The Rideau Canal Bridge will be built over the Rideau Canal, with temporary piers and abutments on the side of the Rideau Canal, with the area reinstated following the jack and slide weekend.

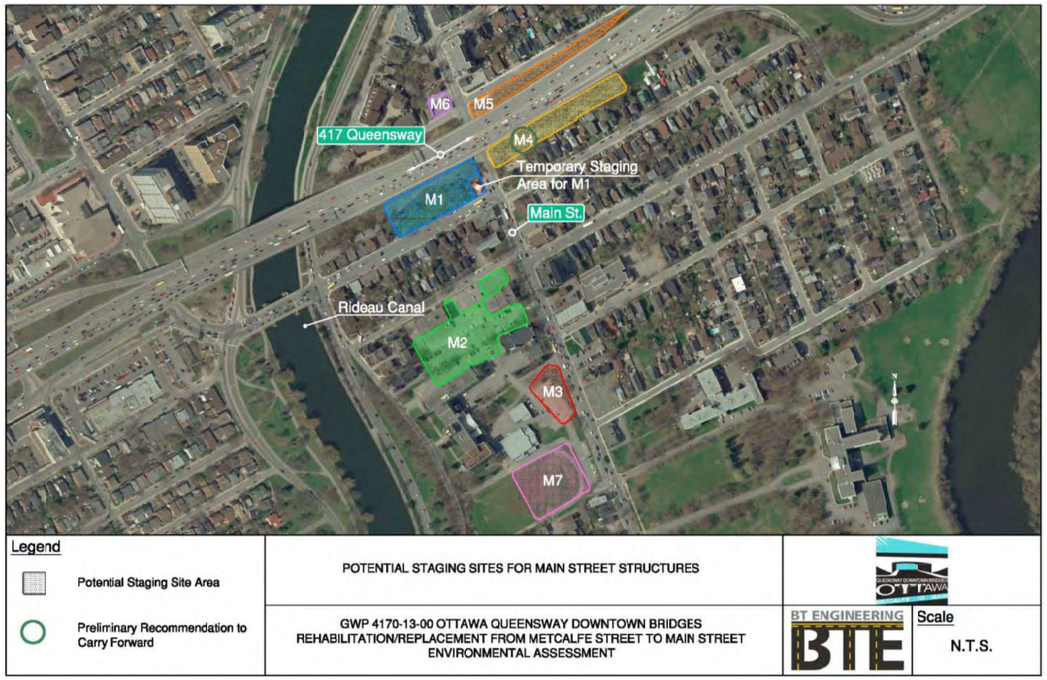


Figure 12: Potential Staging Sites for the Main Street Bridge

GWP 4170-13-00
Queensway Downtown Bridges, Ministry of Transportation
Summary of Environmental Conditions Report
October 2022

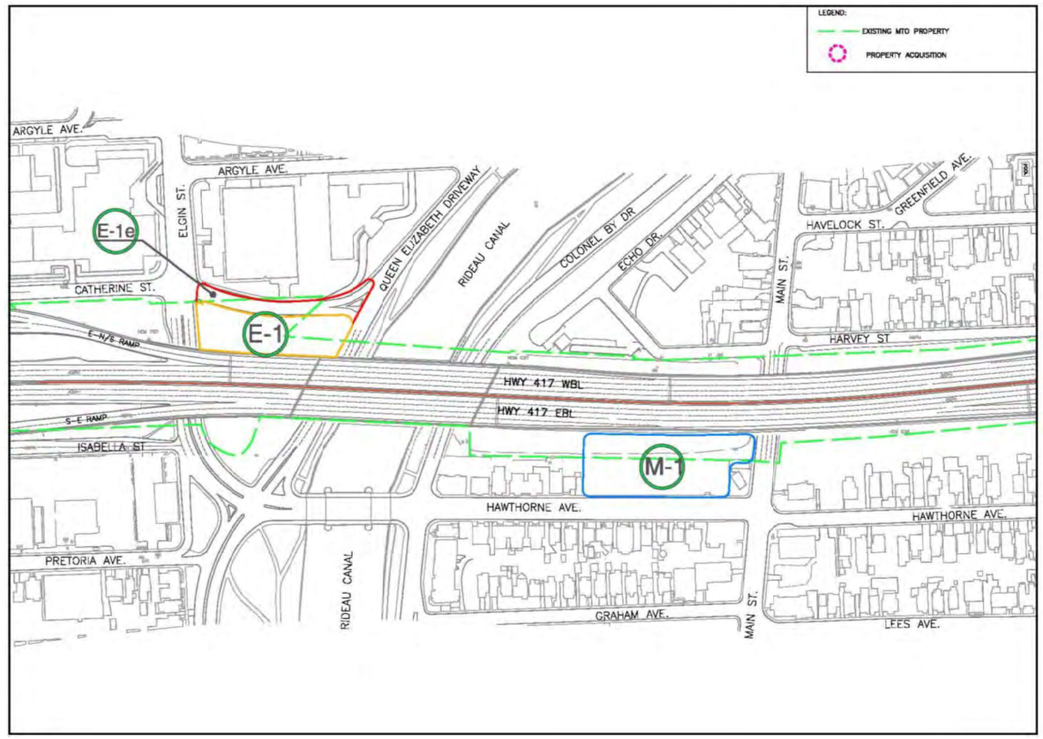


Figure 13: Staging Site for the Rideau Canal Bridge Technically Preferred Alternative

5.3.2 Landscape Composition

The Queensway corridor landscape through mid-town is a transportation corridor with views of the taller buildings and rooflines of adjacent buildings except where lined by a noise barrier at the Main Street Bridge and eastward. It is devoid of woodland trees in the section west of the Canal except for single trees. East of the Canal there is a treed hedgerow and woodland lining the south side of the corridor. Longer viewsheds over the Canal toward Ottawa and South toward Lansdowne are offered from the Queensway where it crosses the Canal.

The Canal Bridge is highlighted by its crossing of the parkways and the UNESCO World Heritage Rideau Canal. The area includes multi-use pathways and sidewalks. Landscaping and trees at both the east and west abutments ameliorate the harshness of the concrete structure at its ends.

See **Appendix B**, Section 0.3.5 Landscape of the Cultural Heritage Context Sensitive Design Section of 30% Update Report.

The Landscape Composition was considered for all bridge site LSA's. See **Appendix I** for the Photographic Records.

5.3.3 Contaminated Property and Waste Management

The Contamination Overview Study (COS) Report was conducted for an area encompassing 250 m from the bridge site and potential staging area LSA's to determine the presence and significance of any actual or potential site contamination which could have an impact on the rehabilitation or replacement of bridges. See **Appendix D** for the COS report.

Six (6) sources of medium or high potential environmental contamination were identified because of the close proximity of the bridge sites to existing and historical potentially contaminating activities such as heavy industrial use and service stations. Development of a Soil Management Plan was recommended. It was also recommended to assess the requirement for additional investigation (Phase II ESA) once the scope of work to be conducted at each bridge site is known. The results of the COS are summarized in **Table 2**.

Table 2: Sources of Medium or High Potential Environmental Contamination:

Property	Year(s)	Property Use	Indicators of Environmental Concern	Relative Potential for Soil and/or Groundwater Contamination	Nearest Bridge Sites	Nearest Potential Staging Areas
Rideau Canal UNESCO World Heritage Site	Crown to Present	Waterbody	Reported sediment contamination of heavy metals, such as lead and cadmium, as well as PAHs; Historical industrial activity on both banks; and vessels hauling industrial goods	High	Rideau Canal	E1 (E1-e) M1
Queensway	Prior to 1902 to early 1960s	Grand Trunk Railway rail yard lines and spurs (14) and buildings for various purposes (coal bins, woodworking machinery, car building shops, scrap sheds, stores)	Reported soil contamination in the vicinity	Medium	Metcalfe Elgin	E1 (E1-e) E2 E3 E4
Queensway	Prior to 1902 to early 1960s	Rail lines	Reported soil contamination in the vicinity	Medium	Rideau Canal Main	M1 M4 M5 M6
Property north of Ballantyne Park	Prior to 1902 to early 1960s	Vacant land, MTO road allowance	Rail spur and coal shed	Medium	Rideau Canal Main	M1

Property	Year(s)	Property Use	Indicators of Environmental Concern	Relative Potential for Soil and/or Groundwater Contamination	Nearest Bridge Sites	Nearest Potential Staging Areas
58 Main Street	Prior to 1954 to late 1960s	Commercial	Former service station, one (1) UST adjacent to the east of the building	Medium	Main	M1
467 Elgin Street	Prior to 1928 to late 1960s	Residential	Service station, pump islands, three (3) USTs adjacent to the west of the service station	Medium	Elgin Rideau Canal	E1 (E1-e)

In addition, review of construction drawings for all bridge sites indicated that asbestos/ transite conduits/ drains/ ducts may be present. See **Contamination Overview Study Report, Appendix D**, **Section 3.1,** Environmental Reports of the COS report.

A Designated Substance and Hazardous Materials Survey (DSS) is being conducted to determine the presence of such materials (i.e. asbestos containing material (ACM1)) at each bridge site. Upon issuing the report of findings of the DSS, results will be considered and a revised report issued.

5.3.4 Noise

The Noise factor was considered for all bridge site LSA's. See **Appendix J** for the Noise Assessment Report**.**

The previous 2007 TESR was completed to provide environmental clearance for the planning stage of physical operational and safety improvements to the freeway. The current 2017 EA is focusing on a bridge management plan to rehabilitate or replace 7 structures on the Queensway from Metcalfe Street to Main Street. These bridge management projects will not require any changes to the 2007 TESR. Therefore, there are no noise impacts from the works except for construction-related means and methods. These construction operations will be required to comply with the City of Ottawa Municipal Noise Control By-law and Provincial legislation described in the MTO Reference Manual for Noise.

While the bridge management plan will not increase or decrease traffic volumes or the mix of vehicles on the Queensway, the study was required to assess the existing condition and noise attenuation effectiveness of the existing noise barriers on both the north and south side of the Queensway within the Study Area. The assessment determined that the barriers are in poor condition with rusted steel and have reached the end of their service lives.

Both the north and south barrier sites underwent an acoustic analysis based on current MTO noise barrier design standards and acoustical attenuation requirements. The noise assessment recommended the following:

1. Replace all existing barriers on the north and south sides of the Queensway between the Rideau Canal and Nicholas Street with 5 m barriers (higher than existing); and
2. Extend the north noise barrier to the east to improve acoustical effectiveness.

5.3.5 Air Quality

MTO undertook a detailed air quality assessment study for the Queensway corridor for the Preliminary Design Study and Environmental Assessment which was completed in 2007.

During the development of MTO's standardized Air Quality / Greenhouse Gas (AQ/GHG) approach, it was agreed that certain Group 'A' and 'B' Class EA projects may not require any further assessment. After careful consideration of the expected changes in traffic conditions as well as proximity to sensitive receptors, it was decided that an AQ/GHG assessment was not warranted for this project.

5.3.6 Traffic Variation

The Traffic Variation was considered for the Immediate Study Area. See **Appendix K** for the Traffic Volume Variations on Queensway Memorandum.

As documented in the 2014 and 2015 Road Users Review, the City of Ottawa measured traffic volumes along the Ottawa River screenline and the Green's Creek screenline in spring 2013, fall 2014 and fall 2015. Changes were made on Highway 417 after spring 2013 to add bus lanes between Nicholas Street and St. Laurent Boulevard as a mitigation measure for the construction of the Light Rail Transit (LRT). Construction started in summer 2013 and the new bus lane was open in 2015.

According to the traffic volume information, traffic at both screenlines significantly decreased in fall 2014 compared to spring 2013, by up to 10%. The decrease was more important on Highway 417, which indicates that some of the highway traffic redistributed to other crossings. The rest of the decrease may have been the result of opting to telework, using a different mode (e.g. transit, cycling), travelling at a different time or avoiding unnecessary trips (a.k.a. induced demand).

The traffic changes in fall 2015 are different, as if drivers have almost all returned to their previous travel patterns. In fact, a traffic increase (up to 2% from the spring 2013 level of traffic, or 1% per year) has occurred on the Rideau River screenline. However, Highway 417 experienced a slight decrease in morning traffic and a barely significant increase in afternoon traffic.

Based on the above, it is assumed that the closure of one lane on Highway 417 would lead to a traffic decrease of up to 10%. Otherwise, due to the freeway being near capacity, traffic is not expected to grow significantly.

5.3.7 Transit Routes

OC Transpo system mapping identifies, roughly from Booth Street to Elgin Street, Local and Peak Routes travel both on the north side (westerly along Catherine Street and Raymond Street) and south side (easterly along Chamberlain Avenue and Isabella Street) of the Queensway. At Elgin Street these routes converge on the Queensway before joining the Transitway at Lees Station. Elgin Street, Bronson Avenue, Bank Street, Pretoria Avenue and Strathcona Avenue are Local Routes, as well as Frequent Routes on Bank Street. No OC Transpo routes currently use the Queensway in the BSA west of Elgin Street.

The City of Ottawa Transportation Master Plan identifies required Infrastructure Projects for any planned transit priority projects or rapid transit projects. Rapid transit projects identified include: East-West LRT through downtown

and Northeast-Southwest Bus Rapid Transit following Riverside Drive. The following transit priority projects were identified within the BSA:

- Bank Street: Set of coordinated transit priority measures as required (signal pre-emption, queue jumps, parking lane conversion, etc.) plus parking restrictions on Bank Street throughout the BSA.
- Bronson Avenue: Set of coordinated transit priority measures as required (signal pre-emption, queue jumps, etc.) on Bronson Avenue throughout the BSA.
- Elgin Street: Set of coordinated transit priority measures as required on Elgin Street from Gladstone Avenue to Wellington Street.
- Catherine Street / Chamberlain Avenue / Isabella Street: Set of coordinated transit priority measures as required on Catherine Street / Chamberlain Avenue / Isabella Street from Bronson Avenue to Lees Station.
- Gladstone Avenue: Set of coordinated transit priority measures as required (signal pre-emption, parking lane conversion, etc.) on Gladstone Avenue from Elgin Street to the O-Train.
- Richmond Road / Wellington Street West / Somerset Street: Set of coordinated transit priority measures as required on Richmond Road / Wellington Street West / Somerset Street from Woodroffe Avenue to Bank Street.

Transit routes will be maintained through the use of detours specific to each bridge site. The specific bridge transit route detours are detailed in **Appendix N.**

5.3.8 Pedestrian and Cycling Routes

5.3.8.1 Multi-Use Pathways

The City of Ottawa OP was referenced for bicycling facilities within the LSA's. Based on the City of Ottawa OP Schedule I – Multi-Use Pathways and Scenic/Entry Routes – Urban, indicates two (2) City-wide Multi-Use Off-Road Pathways within the Immediate Study Area, those being Queen Elizabeth Drive and Colonel By Drive. According to the OP, City-wide Multi-Use Off-Road Pathways, as shown in **Figure 14** and **Figure 15** may also be used by commuter cyclists.

5.3.8.2 Cycling Routes

The City of Ottawa Transportation Master Plan and 2013 Ottawa Bicycle Plan were referenced for bicycling facilities within the LSA's. See **Appendix L** for the Cycling Facilities Memorandum.

It is noted that even though Main Street is depicted as a "suggested route" under Highway 417, bicycle signage is in fact present on the roadway between Graham Avenue and Harvey Street: a segregated bicycle lane in the northbound direction and a combination of segregated lane and share-arrows in the southbound direction.

There are currently no cycling facilities or signage at Elgin Street and Metcalfe Street (except for a "Share the Road" warning sign on Elgin Street). These two streets are expected to ultimately become part of a spine route and a local route respectively. However, it is noted that no cycling improvements are expected within the City's 2031 Affordable Plan, according to the 2013 Transportation Master Plan.

The existing bicycle network around the Study Area is shown in **Figure 14**. The ultimate bicycle network as per the 2013 Ottawa Bicycle Plan is shown in **Figure 15**.

Pedestrian and cycling routes will be maintained through the use of detours specific to each bridge site. The specific cycling route detours are detailed in **Appendix N.**



Figure 14: Existing Cycling Network



Figure 15: Ultimate Cycling Network

5.3.9 School Bus Routes

The Ottawa Student Transportation Authority provides transportation service for all public schools within the BSA.

If disruptions are expected due to construction, alternate routes are used. If underpasses are used by students to walk to school, accommodations to have them picked up by bus for the duration of the construction are generally made to ensure their safety.

School Bus routes will, as with transit routes, be maintained through the use of detours specific to each bridge site. The school bus route detours are detailed in **Appendix N.**

5.3.10 Tourism, Festivals and Events

Ottawa is a popular tourism destination year-round and has many festivals and events. Some occur annually; others may be a one-time occurrence. See **Appendix M** for the Ottawa Tourism 2017 Festivals and Events Calendar.

Ottawa has a few convention centres and locations which host conventions near the LSA's; they include Lansdowne Park south on O'Connor Street at 1015 Bank Street, the Crowne Plaza at 101 Lyon Street in the downtown area, Albert at Bay Hotel in downtown Ottawa, the Best Western at 377 O'Connor Street, the Holiday Inn at 111 Cooper Street, and the Marriott at 100 Kent Street. They host many conventions and conferences throughout the year.

As the location of Canada's government, many large protests occur in the downtown area. They are generally planned with a minimum of a week's notice. As well, visits from foreign dignitaries, such as the British Royal Family, will often require extra security or street closures which may affect traffic in parts of Ottawa.

6.0 2022 Updates and Refinements

Following the second Public Information Centre (PIC), refinements were made to the Technically Preferred Alternative (TPA) included updating the construction staging to construct both the Rideau Canal bridges to the north. This expanded the LSA's to the north. After a thorough review by the Project Team, it was determined that the environmental conditions reviewed by the Project Team and summarized in this report included the area further to the north, except for the terrestrial environment and underwater marine archaeology. The Project Team completed an additional review of these factors and the following impacts were noted by the Project Team:

- Potential impacts to the canal bed from the construction of temporary piers further north. A supplemental Marine Archaeology Assessment was conducted in 2022, see **Appendix H3** for the report. No further investigations are recommended.
- Potential impacts to the terrestrial environment from the construction of the second bridge further north. A supplemental Terrestrial Environmental Inventory was conducted in 2022, see **Appendix G2**. The protection of mature trees, where possible, is recommended. Where mature trees cannot be maintained, new trees will be planted in their place post construction. No SAR trees or locally rare species were identified.

7.0 Summary of Significant Environmental Features

In terms of natural environment, the BSA is fairly uniform, and contains few features of significant environmental concern. There are no Environmentally Sensitive Areas, Areas of Natural and Scientific Interest, wetlands, woodlands, Special Ecological / Vegetation Communities, or important wildlife areas within the LSA's.

Overall, the major environmental constraints within the BSA are the watercourses, specifically the Rideau Canal. The following provides a brief summary of key findings.

GWP 4170-13-00
Queensway Downtown Bridges, Ministry of Transportation
Summary of Environmental Conditions Report
October 2022

Table 3: Summary of Significant Environmental Features

Environmental Information			Significant Environmental Features
Stakeholder Correspondence			Parks Canada – Rideau Canal Navigation requirements: channel width and clearance
Planning Context	**Ministry of Transportation Plans**		Rigid Frame Bridges to follow Context Sensitive Guidelines established for the Queensway.
	National Capital Commission Plans		NCC Plan for Canada's Capital themes as they apply to Open Space and Multi-Purpose Trails in the vicinity of the Rideau Canal.
	Parks Canada Plans		Rideau Canal Historic Site Management Plan – general principles for management of features found within the Study Area.
	City of Ottawa Plans	Official Plan: Land Use and Road Network	The lands within the BSA are designated as General Urban Area, Central Area, Major Open Space, Mixed Use Centre, Urban Natural Features, Employment and Traditional Mainstreet by the City of Ottawa's OP. The road network within the BSA is a mix of Provincial highway, Federally owned roads, and Municipal owned roads (including Major Collector, Arterial and Collector roads).
		City Of Ottawa Design and Planning Guidelines	Environmental Noise Control Guidelines.
		City Of Ottawa Functional Redesign	Planned redevelopment of Elgin Street, Hawthorne Avenue and Main Street.
		City Of Ottawa Site Plan Control Area	None
		City Of Ottawa Design Priority Areas (DPAs)	None
		Downtown Ottawa Urban Design Strategy (DOUDS)	Reconstruct Metcalfe Street and modify Metcalfe and O'Conner Street ramps.
		City Of Ottawa Community Design Plans (CDPs)	Centretown Community Design Plan – Redevelop Metcalfe and Gateway concept and Elgin Street. Old Ottawa East Community Development Plan - Redevelop Main Street and Ballantyne Park, cycling and pedestrian plans.
	Previous Studies	MTO 2007 TESR	Widen Study Area bridges on the Queensway, upgrade existing noise barriers, continue to utilize MTO context sensitive design elements for the Study Area rigid frame bridges, similar to those used for the new rigid frame bridges to the west.
Existing Environmental Conditions	**Natural Environment**	Physiography and Topography	None
		Geology	None
		Surface Water	None
		Groundwater	None
		Source Water	Implement appropriate protection measures as per legislation.
		Fish and Fish Habitat	While aquatic inventories did not identify SAR, consultation with MECP is needed to determine if the following Federal or Provincial aquatic SAR have moved downstream to the vicinity of the bridge site: • Channel Darter (THR); • River Redhorse (SC); and • Northern Brook Lamprey (SC). If unknown, determine if additional SAR surveys are required during Detail Design. It should be noted that species listed as Special Concern (SC) are not afforded protection under the Provincial *Endangered Species Act* (ESA, 2007), though they are protected under the *Fish and Wildlife Conservation Act*. As the current preferred alternative includes the temporary infilling of a portion of the Rideau Canal, a Request for Review by the Federal Department of Fisheries and Oceans (DFO) will be triggered, with the potential for an Authorization under the *Fisheries Act*. A fish salvage will be an important component of the pre-construction operations, and the Ministry of Natural Resources and Forestry will be consulted prior to this in order to apply for a Scientific Collector's Permit and to confirm in-

Environmental Information			Significant Environmental Features
			water construction timing windows. Ministry of Natural Resources and Forestry timing constraint of no in-water work between January 1 and June 30. Presence of contaminated sediments in the Canal. If it is anticipated that daily water-takings will be in excess of 400, 000 L; a Permit To Take Water (PTTW) will be required from the Ministry of the Environment, Conservation and Parks (MECP). Although the creation of the temporary work platform(s) do not fall under the definition of lake infill per the Fill Quality Guidelines for Lakefilling in Ontario (MOE, 2003) the work will follow best practices as outlined in the document in relation to unconfined fill placed directly into the open water of a river.
		Terrestrial Ecosystems	While site inventories did not identify any SAR, the Natural Heritage Information Centre (NHIC) and internal records at the MNRF have indicated that there is a potential for the following Threatened (THR) or Endangered (END) terrestrial species to be present in the Study Area. • Barn Swallow (THR); • Butternut (END); • Chimney Swift (THR); • Eastern Small-Footed Myotis (END); • Northern Long-Eared Bat (END); and • Tricoloured Bat (END). These SAR are identified as native plants or animals in danger of extinction and are either protected by the federal *Species at Risk Act* (SARA, 2002) or the Provincial *Endangered Species Act* (ESA, 2007). Two Special Concern species (SC) have been documented to occur either on the site or nearby. Although not protected under the ESA, 2007, they are protected under the *Fish and Wildlife Conservation Act* and/or *Migratory Birds Convention Act*. • Peregrine Falcon (SC) • Snapping Turtle (SC) MNRF has indicated that breeding birds may be present on site. The *Migratory Birds Convention Act* and the ESA may be triggered if these birds are affected. Negative impacts may be avoided by clearing vegetation, outside of the breeding bird season (April 1 – August 30), or by surveys conducted by a qualified professional, to ensure no breeding birds are present before clearing of vegetation. Vegetation removal from any staging areas during the nesting season shall be performed under the supervision of a qualified professional. MNRF has also identified that no work should occur in turtle overwintering habitat from October 16 – March 15, in order to protect hibernating turtles. Turtles can be found travelling on land during the active season (April 1 – October 30). If the proposed works are to occur during these times, the MNRF recommends fencing off the site, prior to work being undertaken, in order to prevent turtles from accessing the site. Note that future SAR concerns should be directed to the MECP.
	Cultural Environment	Archaeological Resources	Should the proposed staging areas M2, M3 and M6 be subjected to ground disturbing activities during this project, additional archaeological work (Stage 2 Property Survey) will be required.

Environmental Information			Significant Environmental Features
		Built Heritage and Cultural Heritage Resources	The Study Area contains a variety of built and cultural landscape resources that have been added over time as the changes from canal to railway to roads and trails have occurred in the transportation systems that connect the district with the community outside the Study Area. Noted is the Rideau Canal which was designated a World Heritage Site (WHS) in 1996 and its Management Plan was updated and approved in 2005. The Rideau Canal WHS lands are owned by the Government of Canada and administered by Parks Canada. The Canal has also been designated nationally. In addition to the WHS Management Plan there is also a 2005 Management Plan for the Rideau Canal National Historic Site (NHS).
		Scenic Entry Routes and Significant Views	There are three City of Ottawa Scenic Entry Routes within the BSA, those being the Queensway, Queen Elizabeth Drive and Colonel By Drive. Metcalfe Street was considered by the NCC as the "Gateway" entrance to Parliament Hill.
	Socio-Economic Environment	Land Use	The lands within the LSA's are zoned as residential, institutional, open space, leisure, general mixed, local commercial and traditional mainstreet by the City of Ottawa Zoning By-law. In addition to the underlying zone, heritage and mature neighbourhood overlays for land use zoning apply in certain areas.
		Landscape Composition	None
		Contaminated Property and Waste Management	Six (6) sources of medium or high potential environmental contamination were identified because of the close proximity of the bridge sites to existing and historical potentially contaminating activities such as heavy industrial use and service stations. Development of a Soil Management Plan was recommended. It was also recommended to assess the requirement for additional investigation (Phase II ESA) once the scope of work to be conducted at each bridge site is known.
		Noise	Existing noise barriers on both sides of the Queensway will be replaced by 5 m barrier with the north side barriers extended toward Nicholas Street to increase their acoustical effectiveness.
		Air Quality	None
		Traffic Variation	None
		Transit Routes	OC Transpo system mapping identifies Local and Peak Routes on the north side (westerly along Catherine Street and Raymond Street) and south side (easterly along Chamberlain Avenue and Isabella Street) of the Queensway. At Elgin Street these routes converge on the Queensway before joining the Transitway at Lees Station. Elgin Street, Bronson Avenue, Bank Street, Pretoria Avenue and Strathcona Avenue are Local Routes, as well as Frequent Routes on Bank Street. No OC Transpo routes currently use the Queensway in the BSA west of Elgin Street. The City of Ottawa Transportation Master Plan identifies required Infrastructure Projects for any planned transit priority projects or rapid transit projects. Rapid transit projects identified include: East-West Light Rail Transit through downtown and Northeast-Southwest Bus Rapid Transit following Riverside Drive. Transit priority projects were identified within the BSA on: Bank Street, Bronson Avenue, Elgin Street, Catherine Street / Chamberlain Avenue / Isabella Street, Gladstone Avenue and Richmond Road / Wellington Street West / Somerset Street. All transit routes will be maintained through the use of bridge site specific detours.
		Pedestrian and Cycling Routes	The City of Ottawa OP indicates two (2) City-wide Multi-Use Off-Road Pathways within the Immediate Study Area, those being Queen Elizabeth Drive and Colonel By Drive. The City of Ottawa Transportation Master Plan and 2013 Ottawa Bicycle Plan indicate Main Street as a "suggested route", however bicycle signage is in fact present on the roadway between Graham Avenue and Harvey Street: a segregated bicycle lane in the northbound direction and a combination of segregated lane and sharrows in the southbound direction. There are currently no cycling facilities or signage at Elgin Street and Metcalfe Street (except for a "Share the Road" warning sign on Elgin Street). These two streets are expected to ultimately become part of a spine route and a local route respectively. However, it is noted that no cycling improvements are expected within the City's 2031 Affordable Plan, according to the 2013 Transportation Master Plan.

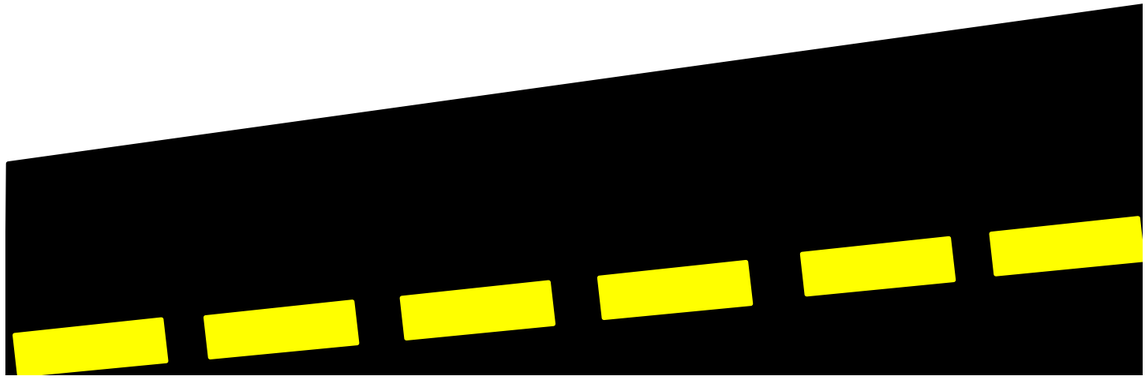
Environmental Information			Significant Environmental Features
			All pedestrian and cycling routes will be maintained through the use of bridge site specific detours.
		School Bus Routes	All school bus routes will be maintained through the use of bridge site specific detours.
		Tourism, Festivals and Events	None

Glossary of Terms

• ACM1	Asbestos Containing Material
• BSA	Broader Study Area
• Canadian Environmental Assessment Act (CEAA)	The CEAA applies to projects for which the federal government holds decision-making authority. It is legislation that identifies the responsibilities and procedures for the environmental assessment.
• CDP	Community Design Plan
• COS	Contamination Overview Study
• Class Environmental Assessment Document	An individual environmental report documenting a planning process which is formally submitted under the EA Act. Once the Class EA document is approved, projects covered by the class can be implemented without having to seek further approvals under the EA Act provided the Class EA process is followed.
• Class Environmental Assessment Process	A planning process established for a group of projects in order to ensure compliance with the Environmental Assessment (EA) Act. The EA Act, in Section 13 makes provision for the establishment of Class Environmental Assessments.
• DPA	Design Priority Area
• DSS	Designated Substance and Hazardous Materials Survey
• DOUDS	Downtown Ottawa Urban Design Strategy
• EA	Environmental Assessment
• EA Act	Ontario Environmental Assessment Act (as amended by S.O. 1996 C.27), RSO 1980.
• Environment	Air, land or water, Plant and animal life, including human life, The social, economic and cultural conditions that influence the life of humans or a community, Any building structure, machine or other device or thing made by humans, Any solid, liquid, gas, odour, heat, sound, vibration or radiation resulting directly or indirectly from human activities, or Any part or combination of the foregoing and the interrelationships between any two or more of them, in or of Ontario.
• Environmental Effect	A change in the existing conditions of the environment which may have either beneficial (positive) or detrimental (negative) effects.
• Environmentally Sensitive Areas (ESA's)	Those areas identified by any agency or level of government which contain natural features, ecological functions or cultural, historical or visual amenities which are susceptible to disturbance from human activities and which warrant protection.
• Factor	A category of sub-factors.
• ISA	Immediate Study Area
• LSA	Local Study Area
• MTO	Ministry of Transportation Ontario.
• MTO Class EA	Class Environmental Assessment for Provincial Transportation Facilities
• NCC	National Capital Commission

• NHS	National Historic Site
• OP	Official Plan
• OBHAC	Ottawa Built Heritage Advisory Committee
• Staging Areas/ Bridge Farm Staging Areas	Locations where entire bridges and/or bridge segments are constructed in advance of being moved by the self -propelled modular transporters to replace previously removed existing bridge segments. The staging areas will also be used to demolish the existing bridges/ bridge segments moved out in advance of the new replacements being moved in.
• SECR	Summary of Environmental Conditions Report
• TESR	Transportation Environmental Study Report. The final documentation for Group B project, defining the project, consultation process, preferred solution and mitigation measures.
• WHS	World Heritage Site

Appendix A
Stakeholder Correspondence



Letter brings together both sides of border

Mayor of U.S. town visits Kingston for Canada 150 weekend, writes *Arthur Milnes*.



BRUCE DEACHMAN

CAPITAL VOICES BY BRUCE DEACHMAN

ANDREW LARCHE

Laurier Avenue.
Canada Day, July 1, 2017.

"I was born and raised in Ottawa and have been living here for 37 years. I just love coming out and making people smile and have a great time for Canada Day. I have my wings that I can put people between and make them remember this day as well.

"I made this outfit myself, and earlier today I had a bigger costume, but with all the rain that we had this morning, it fell apart, so I had to downsize. But I keep going.

"I do this every year, and I try to add to it every year. I had a big 'Happy 150 Canada' sign super high up in the air, but that's what came apart in the rain, so I came back down to a medium-size suit. But the reaction has been amazing. I've been out since six o'clock this morning. It's only noon now and I'm guessing that 1,000 people have taken my photo. It's been non-stop.

"What do I like about Canada? The freedom. It's a beautiful country and I love being a proud Canadian. And I love Ottawa. It's the best place to be on Canada Day and every other day. It's great to be here."

bdeachman@postmedia.com

ABOUT THIS SERIES

In anticipation of Canada's sesquicentennial celebrations, the Citizen's Bruce Deachman went out in search of Ottawans — 150 of them — to learn their stories. The series, which was published daily leading up to Canada Day, was called Capital Voices. It continues, today and beyond, on a somewhat less rigorously defined schedule.

When I was growing up, it was clear to me that one word struck genuine terror in our mother's soul.

Polio.

My late mother had worked as a young nurse in the 1950s at a children's polio ward in Toronto. Whether her service was for a day, a week, a month or a year, I honestly don't know.

But, the fear for her was very real.

She also admired the work of Paul Martin Sr., who, as Canada's minister of health, helped bring the Salk vaccine to the world.

Mayor Bob Prater of Warm Springs, Ga., now 71, knows all too well the dangers of polio. As a child in Alabama, the disease struck him and then, just as mysteriously as it came, it left and he grew up a normal kid.

It was only eight years ago, when he was in his 60s, that the good muscles in his legs, which had been over-compensating for decades for the ones that had been damaged by polio, gave out. For the rest of his life, he will now wear the dreaded leg braces most of us — thankfully — have never seen.

Mayor Prater and his grandson, Drew, both came to Kingston for Confederation 150 weekend due to one of the time capsule letters my wife, Alison, and I sent. And they were the hit of the town, particularly when we all gathered to bury our time capsule.

First he read, with genuine emotion and pride, his tiny city's official proclamation that had declared July 1 Franklin Roosevelt-Sir John A. Macdonald-Canada Day in Warm Springs. (Franklin Roosevelt himself, another man who didn't let polio stop him, used to visit the place Prater leads today as mayor to

> *Many people in front of Mayor Prater became openly emotional as he led us in Canada's oath.*

"soak his polio-stricken legs in the warm waters," as TV Ontario's Steve Paikin describes.)

Then, because I could think of no higher honour private Canadian citizens could bestow on a foreigner, Mayor Prater was invited to lead our group's reaffirmation of our Canadian citizenship July 1 in my backyard.

Kingston's mayor was there, as was one of our area MPs, Scott Reid. There was also a transplanted American, Lynn, who now lives in Kingston, along with an American couple from Scottsdale, Ariz., in town for 150 as their community is a Sister City of Kingston's.

And many people in front of Mayor Prater became openly emotional as he led us in Canada's oath — on Confederation's 150th birthday, in one of the Fathers of Confederation's town.

The next day, and despite his leg braces, Prater wanted me to give them a quick tour of Kingston before they caught their flight.

In particular, they wanted to see where Franklin Roosevelt of their Warm Springs had spoken in 1938 when FDR famously visited Kingston.

Mayor Prater really liked that stop of my tour of Kingston.

In fact, it was the final one.

He and his council have now invited Kingston to be a Sister City. And they have officially asked Kingston's mayor, Bryan Paterson, to be their grand marshal at this November's Annual Candle Light Tour Parade.

I suspect both will now pass at Kingston city council. Paterson had better pack his bags.

And, a lot of Kingstonians will be seeing Mayor Prater and his grandson again.

All of this because of a snail-mailed 150 time capsule letter.



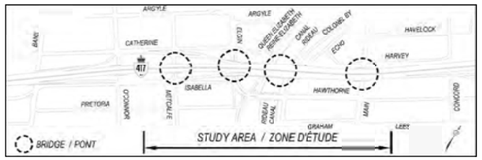
Arthur Milnes, left, with MP Scott Reid, Kingston Mayor Bryan Paterson and Mayor Bob Prater of Warm Springs, Ga., seated, took part in an event to reaffirm the citizenship of a group of Canadians.

ONTARIO GOVERNMENT NOTICE
NOTICE OF STUDY COMMENCEMENT

Ottawa Queensway Downtown Bridges Environmental Assessment Study
Metcalfe Street to Main Street
Group Work Project 4170-13-00

THE STUDY

The Ontario **Ministry of Transportation (MTO)** has retained **BT Engineering Inc. (BTE)** to undertake a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. This study will determine the appropriate strategy for the rehabilitation or replacement of these bridges. The Queensway Corridor Study Area and the four Local Study Areas are shown on the map below.



The area of study includes three levels of analysis. The "Broader Study Area" includes the geographic area of the City where temporary short term offsite detour routes are being considered for freeway closures. The "Immediate Study Area" will be defined to focus on the Queensway Corridor generally within or adjacent to the MTO right-of-way that will include the bridge alternatives and possible staging areas for candidate bridge construction sites needed for rapid replacement options. Within this Study Area, we will also identify "Local Study Areas" at each of the bridge locations along with potential candidate construction staging sites necessary for the construction of bridge segments for the rapid replacement options. Environmental inventories and secondary source reviews will be carried out within the limits of the "Immediate and Local Study Areas" and at the potential construction staging sites.

The Study will complete the preliminary design and receive EA clearance to proceed to Detail Design resulting in construction projects at each of the 4 sites for a total of 7 bridges. There are two types of bridge projects (replacement or rehabilitation) and two types of bridges (rigid frames and beam structures (Rideau Canal)). They are distinctly different bridge types and projects but the inter-relationship between the projects is that there may be common traffic staging, and the possible replacement of the Rideau Canal Bridge may trigger an elevation increase (if the mid-span of the Rideau Canal Bridge increases) that may require profile changes to the adjacent bridges (possibly triggering advance replacement).

THE PROCESS

This study will follow the *Class Environmental Assessment for Provincial Transportation Facilities* (2000) planning process for a Group "B" project, with the opportunity for external agency and public consultation throughout the project. Two Public Information Centres (PICs) will be scheduled to: present the project process, design alternatives, analysis and evaluation results and preferred designs to agencies and members of the public; to obtain comments; and to discuss any concerns with regards to the proposed undertaking. Notices providing the date, time, and location of the PICs will be published in the Ottawa Citizen and Le Droit.

Upon completion of this study, a Transportation Environmental Study Report (TESR) will be prepared and made available for a 30-day public review period. A further notice of TESR Submission will be published in the Ottawa Citizen and Le Droit at that time.

COMMENTS

We are interested in hearing any comments that you may have regarding this study. You are encouraged to make your concerns and input known to the Project Team at your earliest opportunity. Early communication of concerns in the study allows the greatest opportunity to address them. If you wish to obtain additional information or provide comments, or wish to be added to the project mailing list, please contact the Consultant Project Manager or MTO Senior Project Engineer listed below:

Steve Taylor, P.Eng.
Project Manager
BT Engineering
100 Craig Henry Drive, Suite 201
Ottawa, ON K0G 5W3
tel: 613-228-4813
toll-free: 1-855-228-4813
fax: 613-280-1305
e-mail: steven.taylor@bteng.ca

David Lindensmith, P.Eng.
Senior Project Engineer
Ministry of Transportation
1355 John Counter Boulevard
Kingston, ON K7L 5A3
tel: 613-547-1740
toll-free: 1-800-267-0295
fax: 613-540-5106
e-mail: dave.lindensmith@ontario.ca

WEBSITE

www.queenswaydowntownbridges.com will be created and updated regularly in order to provide the following information: background information; current project status; Frequently Asked Questions and Answers; project schedule; contact information; and serve as an additional means for you to communicate your comments and concerns. You are encouraged to keep up-to-date on the project by regularly visiting the website.

ACCESSIBILITY

If you have any accessibility requirements in order to participate in this project please contact one of the Project Team members listed above.

All information will be collected in accordance with the *Freedom of Information and Protection of Privacy Act* (2009). With the exception of personal information, all comments will become part of the public record.

Pour des renseignements en français veuillez communiquer avec Daniel Riendeau au: 613 228-4813 ou daniel.riendeau@bteng.ca

Ontario

ENQUÊTE DE LA GRC ET DU FBI

Le suspect arrêté en Thaïlande retrouvé mort

PAULE VERMOT-DESROCHES
Le Nouvelliste

TROIS-RIVIÈRES — Le suspect originaire de Trois-Rivières qui avait été arrêté en Thaïlande la semaine dernière, à la suite d'une opération d'envergure internationale par la GRC et le FBI concernant des activités illégales sur le *Dark web*, s'est enlevé la vie en prison, à Bangkok.

Selon le site Internet du journal thaïlandais *Post Today*, Alexandre Cazes, 26 ans, a été retrouvé mort dans une salle de bain de la prison où il était détenu depuis son arrestation le 5 juillet dernier. À cette date, on se souviendra que des perquisitions avaient été menées dans le secteur Cap-de-la-Madeleine. La résidence de membres de la famille du jeune homme avait non seulement été perquisitionnée, mais également un local commercial où il y avait de l'entreposage de biens. Du matériel informatique y avait notamment été saisi. Selon le *Post Today*, il a été rapporté que Cazes avait rencontré un procureur vers 7 h du matin mercredi, heure de Bangkok. Il était question de son extradition vers les États-Unis, où il aurait pu être mis en accusation dans l'enquête relative aux activités illégales menées sur le web. Plus tard, le détenu est allé prendre une douche. C'est à cet endroit qu'il a été retrouvé sans vie.

Du côté de la GRC, on n'a ni confirmé ni infirmé les informations diffusées par le média thaïlandais, d'autant plus que la GRC n'avait, à ce jour, jamais confirmé quoi que ce soit relativement à l'arrestation de cet homme dans le cadre de cette enquête de niveau international.

Chez Affaires mondiales Canada, on confirme le décès d'un ressortissant canadien en Thaïlande.

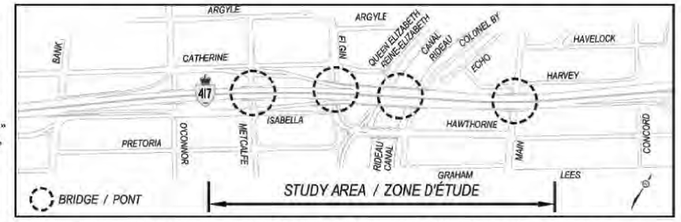
AVIS DU GOUVERNEMENT DE L'ONTARIO – AVIS DE DÉBUT D'ÉTUDE

Étude d'évaluation environnementale des ponts de l'autoroute 417 au centre-ville d'Ottawa, entre les rues Metcalfe et Main
G.W.P. 4170-13-00

L'ÉTUDE

Le **ministère des Transports de l'Ontario (MTO)** a retenu les services de la firme **BT Engineering (BTE)** pour réaliser une étude de conception préliminaire et d'évaluation environnementale pour la réfection ou le remplacement de sept ponts (quatre emplacements) sur l'autoroute 417 (Queensway) à Ottawa entre les rues Metcalfe et Main, incluant le pont du canal Rideau. L'étude déterminera le programme approprié de réfection ou de remplacement de ces ponts. La carte ci-dessous montre la zone d'étude du corridor de l'autoroute 417 et les quatre zones d'étude locales.

La zone d'étude comprend trois niveaux d'analyse. La « zone d'étude élargie » couvre le secteur géographique de la ville à l'intérieur duquel des itinéraires de détour temporaires sont envisagés en cas de fermeture de voies sur l'autoroute. La « zone d'étude immédiate » correspondra à la partie du corridor de l'autoroute 417 généralement incluse dans l'emprise du MTO ou adjacente à celle-ci qui contiendra les modifications de pont proposées ainsi que les aires d'assemblage là où le remplacement rapide d'un pont est envisagé. À l'intérieur de cette zone d'étude seront aussi identifiées des « zones d'étude locales » à chacun des emplacements de pont ainsi que des aires d'assemblage, nécessaires à la construction de segments de pont dans les cas de remplacement rapide. Des inventaires environnementaux ainsi que la consultation de sources secondaires seront effectués dans les limites des « zones d'étude immédiate et locales » ainsi qu'aux aires d'assemblage potentielles.



L'étude complétera la conception préliminaire et permettra d'obtenir, sur le plan environnemental, l'autorisation de passer à l'étape de la conception détaillée pour chacun des quatre emplacements couvrant les sept ponts. Bien que les projets de pont soient de deux natures différentes (remplacement, réfection) et qu'on retrouve deux types de structures (cadres rigides et, dans le cas du canal Rideau, poutres), l'interdépendance de ces projets rend possible une gestion commune de la circulation. En outre, le remplacement possible du pont du canal Rideau est susceptible d'en augmenter la hauteur s'il est rehaussé à mi-travée), ce qui pourrait nécessiter des changements de profil des ponts voisins (et peut-être hâter leur remplacement).

LE PROCESSUS

L'étude suivra le processus de planification établi par l'*Évaluation environnementale de portée générale pour les installations provinciales de transport* (2000) pour les projets du groupe B, et les organismes externes et le public seront consultés tout au long du projet. Deux séances d'information publique (SIP) seront prévues afin de : présenter aux organismes et au public le processus du projet, les alternatives de conception, l'analyse et l'évaluation des résultats et les alternatives préférées; obtenir des commentaires; et discuter de toute préoccupation concernant le projet proposé. Des avis indiquant la date, l'heure et le lieu des SIP seront publiés dans l'*Ottawa Citizen* et dans *Le Droit*.

Une fois l'étude terminée, un rapport d'étude environnementale sur les transports (REET) sera préparé et fera l'objet d'une période d'examen public de 30 jours. Un avis de dépôt du REET sera alors publié dans l'*Ottawa Citizen* et *Le Droit*.

COMMENTAIRES

Les commentaires que vous pourriez avoir au sujet de l'étude nous intéressent. Nous vous invitons à faire connaître votre avis et vos préoccupations à l'équipe du projet dès que possible. Il nous sera d'autant plus facile de répondre à vos préoccupations que vous nous les communiquez tôt au cours de l'étude. Si vous souhaitez obtenir d'autres renseignements, faire des commentaires ou ajouter votre nom à la liste d'envoi du projet, veuillez communiquer avec l'une ou l'autre des personnes suivantes :

Steve Taylor, P.Eng., chargé de projet
BT Engineering
100, promenade Craig Henry, bureau 201, Ottawa (Ontario) K2G 5W3
tél. : 613 228-4813 / sans frais : 1 855 228-4813
téléc. : 613 280-1305
courriel : steven.taylor@bteng.ca

David Lindensmith, P.Eng., ingénieur principal de projet
Ministère des Transports
1355, boulevard John Counter, Kingston (Ontario) K7L 5A3
tél. : 613 547-1740 / sans frais : 1 800 267-0295
téléc. : 613 540-5106
courriel : dave.lindensmith@ontario.ca

SITE WEB

Le site **www.queenswaydowntownbridges.com** sera créé et mis à jour régulièrement avec les informations suivantes : renseignements généraux, état d'avancement du projet, réponses aux questions fréquentes, calendrier du projet et coordonnées des personnes-ressources. Il sera aussi un autre moyen de communiquer vos commentaires et vos préoccupations. Nous vous encourageons à vous tenir à jour sur le projet en le visitant régulièrement.

ACCESSIBILITÉ

Si vous avez des besoins particuliers en matière d'accessibilité pour participer au projet, veuillez communiquer avec l'un des membres de l'équipe de projet mentionnés ci-dessus.

Tous les renseignements seront recueillis en conformité avec la *Loi de 2009 sur l'accès à l'information et la protection de la vie privée*. À l'exception des renseignements personnels, tous les commentaires seront publics.

Pour des renseignements en français veuillez communiquer avec Daniel Riendeau par téléphone au 613 228-4813 ou par courriel à l'adresse daniel.riendeau@bteng.ca.

Ontario

From: Kellie Iacovitti [mailto:kellie.iacovitti@rvca.ca]
Sent: July 13, 2017 5:26 PM
To: steven.taylor@bteng.ca
Subject: FW: GWP4170-13-00 Queensway Downtown Bridges Notice of Study Commencement

Good Afternoon Steven,

Thank you for this notification.

Please be informed that RVCA has no regulatory jurisdiction at the four sites indicated and no further involvement is required.

You may wish to verify review requirements for the portion over the canal with Parks Canada Rideau Canal.

Respectfully, Kellie

Kellie Jennifer Iacovitti,
Records Administrator for
Planning & Regulations Departments
Rideau Valley Conservation Authority/LRC
Box 599, 3889 Rideau Valley Drive, North
Manotick, ON K4M 1A5
613-692-3571 **ext. 1128**
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E-MAIL: kellie.iacovitti@rvca.ca
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From: Steve Taylor <steven.taylor@bteng.ca>
Date: Wednesday, July 12, 2017 at 2:36 PM
To: "Janet.Townson@aadnc-aandc.gc.ca" <Janet.Townson@aadnc-aandc.gc.ca>, "'Marc-André.Millaire@aadnc-aandc.gc.ca'", "InfoPubs@aadnc-aandc.gc.ca" <InfoPubs@aadnc-aandc.gc.ca>, "info@ceaa-acee.gc.ca" <info@ceaa-acee.gc.ca>, "christopher.meek@ncc-ccn.ca" <christopher.meek@ncc-ccn.ca>, "carole.lumsdon@tpsgc-pwgsc.gc.ca" <carole.lumsdon@tpsgc-pwgsc.gc.ca>, "NPPHQ-PPNAC@tc.gc.ca" <NPPHQ-PPNAC@tc.gc.ca>, "gary.mctavish@ontario.ca" <gary.mctavish@ontario.ca>, "steve.burns@ontario.ca" <steve.burns@ontario.ca>, "Blair.Ostrom@ontario.ca" <Blair.Ostrom@ontario.ca>, "dan.l.thompson@ontario.ca" <dan.l.thompson@ontario.ca>, "david.arnott@ontario.ca" <david.arnott@ontario.ca>, "Kate.Oxley@ontario.ca" <Kate.Oxley@ontario.ca>, "rosemary.theriault@ottawa.ca" <rosemary.theriault@ottawa.ca>, Diane Downey <diane.downey@rvca.ca>, "Mathieu.Fleury@ottawa.ca" <Mathieu.Fleury@ottawa.ca>, "Peter.Clark@ottawa.ca" <Peter.Clark@ottawa.ca>, "Catheerine.McKenney@ottawa.ca" <Catheerine.McKenney@ottawa.ca>, "Riley.Brockington@ottawa.ca" <Riley.Brockington@ottawa.ca>, "David.Chernushenko@ottawa.ca" <David.Chernushenko@ottawa.ca>, "Peter.Hume@ottawa.ca" <Peter.Hume@ottawa.ca>, "Douglas.Rathwell@ottawa.ca" <Douglas.Rathwell@ottawa.ca>, "Birgitte.Alting-Mees@ottawa.ca" <Birgitte.Alting-Mees@ottawa.ca>, "Carol.Hall@ottawa.ca" <Carol.Hall@ottawa.ca>, "Renjit.Varghese@ottawa.ca" <Renjit.Varghese@ottawa.ca>, "Tim.Holland@ottawa.ca" <Tim.Holland@ottawa.ca>, "Kim.Millar@ottawa.ca" <Kim.Millar@ottawa.ca>, "FireRequests@ottawa.ca" <FireRequests@ottawa.ca>, "Richard.Holder@ottawa.ca" <Richard.Holder@ottawa.ca>, "paramedicpublicrelations@ottawa.ca" <paramedicpublicrelations@ottawa.ca>, "BordeleauC@ottawapolice.ca" <BordeleauC@ottawapolice.ca>, "brian.steen@ottawa.ca" <brian.steen@ottawa.ca>, "genya.stefanoff@ottawa.ca" <genya.stefanoff@ottawa.ca>
Cc: Dave Lindensmith <Dave.Lindensmith@ontario.ca>, Darcie Dillon <darcie.dillon@bteng.ca>, Kevin Ogilvie <Kevin.Ogilvie@ontario.ca>, Gord Bell <gord.bell@bteng.ca>
Subject: GWP4170-13-00 Queensway Downtown Bridges Notice of Study Commencement

Good afternoon,

The Ontario Ministry of Transportation (MTO) has initiated a preliminary design and environmental assessment study for the rehabilitation and / or replacement of seven bridges (at four locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street, including the Rideau Canal Bridge, in the City of Ottawa. Attached is a letter notifying you of the study commencement.

Should you wish to be removed from our study contact list, please reply.

Steve Taylor
Project Manager

Steve Taylor P.Eng., M.Eng., CVS-LIFE, P.E.
President
100 Craig Henry Drive, Suite 201
Ottawa, Ont. K2G 5W3
E-Mail: steven.taylor@bteng.ca
Phone: 613-228-4813
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www.bteng.ca

Appendix B
Context Sensitive Design Report



QUEENSWAY DOWNTOWN BRIDGES FROM METCALFE STREET TO MAIN STREET,
ENVIRONMENTAL ASSESSMENT AND PRELIMINARY DESIGN STUDY, GWP 4170-13-00
CONTEXT SENSITIVE DESIGN SECTION OF 100% UPDATE REPORT
REVISED OCTOBER 2019

MTBA
• ARCHITECTURE • URBANISM • CONSERVATION •
CONTEXT SENSITIVE DESIGN SPECIALISTS

IN ASSOCIATION WITH:

LASHLEY+ASSOCIATES
LANDSCAPE ARCHITECTURE AND SITE ENGINEERING

Wendy Shearer,
Landscape Architect,
Cultural Heritage Specialist

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0.0. REPORT INTRODUCTION

This Context Sensitive Design (CSD) Report is a component of the overall deliverables by the BTE Team for the Queensway Downtown Bridges, Metcalfe Street to Main Street, Environmental Assessment and Preliminary Design Study. The CSD Team consists of the following personnel and their support teams:

CSD Lead - Architect/Urban Designer/Heritage Specialist
Mark Thompson Brandt, Senior Conservation Architect & Urbanist
MTBA Associates Inc.

Conservation & Cultural Landscape Specialist
Wendy Shearer, Wendy Shearer Landscape Architect

Landscape Architects
David Lashley, Principal - Lashley & Associates Corp.
Marina Knuckey, Lashley & Associates Corp.

Design, Research & Technical Specialists
Carly Farmer, Intern Architect
MTBA Associates Inc.

Jorge Sosa, Designer/Technologist
MTBA Associates Inc.

All images are by MTBA unless otherwise noted.

0.1. SECTION ONE

0.1.1. CONTEXT SENSITIVE DESIGN: DEFINITION, OBJECTIVES & APPROACH

The objective of the Study is to prepare preliminary design for the rehabilitation or replacement of a series of Highway 417 Queensway bridges in downtown Ottawa for the Ministry of Transportation of Ontario (MTO). This includes four sites: Metcalfe Street, Elgin Street, Main Street and the Rideau Canal crossing. As this transportation corridor routes through residential and commercial sections of the urban core, there are some fundamentals to developing the design concepts that apply beyond strictly structural, environmental and traffic engineering: those that address the context-sensitivity of the renewed bridge sites, within their urban context.

Context Sensitive Design (CSD) addresses the existing physical, social, environmental and human dimensions of the sites, in order to intelligently design the transport facility in a way that better harmonizes with its surroundings. The primary interface areas include the experience of driving, walking or cycling through the underpasses, and the immediate landscape and built fabric context. Also, to be considered is the driving experience on the Queensway itself, which is focused on safety and traffic efficiency.

Other authorities have jurisdictions in the area of these sites, and it is recommended that collaboration continue to be conducted with these other authorities, who have their own CSD approaches. These include the City of Ottawa, who is responsible for most of the crossroads, sidewalks, bike lanes, lighting and street furnishings; the National Capital Commission, who has jurisdiction for these same elements along the Rideau Canal location; and Parks Canada, who have jurisdiction over the Rideau Canal. These are discussed in more depth below. The CSD Approach and the resulting design concepts will evolve in order to further facilitate this design collaboration. However, the primary focus of CSD is on the harmonious context-sensitivity of the transport facility within the communities it passes through.

0.1.2. APPROACH/PHILOSOPHY/PRINCIPLES

The general principle is to make each bridge site safer, brighter, more open and greener.

Other components of the CSD Approach include:

- The Context Sensitive Design (CSD) will build on previously developed Queensway CSD guidelines and elements;
- Design elements and landscaping will generally be developed to the MTO standard. Any other standards proposed as part of this study will only be considered in partnership with communities, with permitting conditions and financial considerations established by MTO;
- If the extent of renewal at any given site supports it (as is expected at all four sites), CSD elements will be considered for inclusion;
- CSD elements/considerations may include some or all of:
  - Light - natural and artificial
  - Materials
  - Views
  - Façade
  - Noise Barriers
  - Soft Landscape and Hard Landscape
  - Furnishings / Equipment (in partnership only)
  - Public Art (in partnership only)

Potential treatment characteristics from previously developed and approved Queensway CSD guidelines include:

- Simple, contemporary façade and pier design;
- Design to be somewhat adapted as needed to suit location;
- Otherwise, a generally consistent design palette to be used across all cross streets for continuity (exceptions where there are structural or unique site exceptions).

Structurally, there are two bridge types within this project's overall study area:

1. Rigid frame bridges (Metcalfe, Elgin and Main);
2. Steel girder bridge (Rideau Canal).

0.2. SECTION TWO

0.2.1. PHYSICAL SITE CONTEXT

In the application of Context Sensitive Design, the physical context is extremely important. The social and environmental contexts also play important roles. The physical site context is relatively standard (i.e. similar to most other Queensway bridge sites) for the three rigid frame sites, despite their location in the heart of the city core area. This is partially due to the physical nature of a large transportation facility and the utilitarian design approach taken in the 1960's. Another factor is that the Queensway was previously a rail corridor, and there was generally a lack of zoning as we know it today. Therefore, historically, industrial land uses were located beside commercial and residential uses in the vicinity of this long-time transportation corridor.

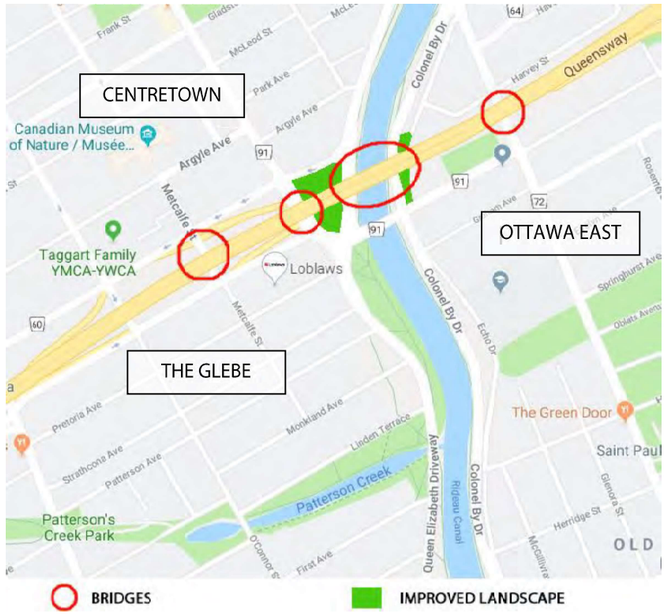


Figure 1 - Study Area and immediate context *(Google Maps & MTBA)*

0.2.2. DISTRICT/NEIGHBOURHOODS

The Study Area contains a variety of built and cultural landscape resources that have been added over time as the transportation systems evolved from canal to railway to roads and trails that connect the district with the community outside the Study Area. There are three neighbourhoods in and adjacent to the Study Area.

In general, the Queensway provides a clear division between areas to the north ("Centretown") that have undergone more recent redevelopment, changing from a neighbourhood scale to larger buildings such as the YMCA/YWCA, Police headquarters and several multi-unit residential mid-rise towers, all with their associated parking lots and driveways and the areas south of the Queensway ("Ottawa East" and "The Glebe"). These areas have seen less of this change and still retain some sections of streets with smaller scale single family residences and neighbourhood-oriented commercial buildings. Within the district north of the Study Area is the rehabilitated Canadian Museum of Nature that was originally designed to terminate the historic view along Metcalfe Street from the north. The view of the museum from the south is framed by the Metcalfe Street Queensway underpass. The Rideau Canal is historically the divider between the Ottawa East and Glebe neighbourhoods.

0.2.3. CORRIDORS

The Queensway follows the earlier railway line alignment that travelled through the City providing a link between the industrial and passenger trade and the rest of the country. This alignment generally runs east-west, with the Rideau Canal and other main streets running in a north-south direction. The original 19th century street grid of this area of Ottawa has been adapted with the use of bridges, to allow for surface travel on these key north-south streets, Metcalfe, Elgin and Main, to continue across the Queensway. Undertaking work to repair or replace these bridges will ensure that this longstanding circulation pattern in the street system continues.

The historic aerial photos show that the railway operations consisted of extensive industrial shops and spur lines in the area west of Elgin Street. The construction of the Queensway involved not only removing the rail lines but also creating earth embankments along its edges. In some areas, these embankments are now occupied by freeway ramps and in other areas these embankments have been allowed to revegetate naturally, with a mixture of native and invasive non-native trees and shrubs. These lands along the edge of the Queensway have the potential to be used as staging areas for the proposed bridge repair or replacement work. The staging areas will be used for the storage of equipment, vehicles, and construction activities for the period of construction on the bridges. At the completion of the work, these areas will likely revert to their current use, i.e. green open space. The Cultural Assessment

of these areas will identify the impact of these short-term changes, as well as long-term changes, on the heritage value of these areas and those areas adjacent to them.

Although the Rideau Canal generally runs south-north in the Study Area, the alignment at the Queensway crossing curves to the east and slightly further north, it turns to the west on an almost 90-degree curve, leading to the Ottawa River at Parliament Hill. The gently curving alignment of the Canal in the Study Area provides a unique focal point to the view of the Canal bank and its maintained parkland. This is particularly evident from the viewing overlook on the Pretoria Bridge.

The Rideau Canal, although built originally for military purposes, then used for commercial transport, is today a recreational corridor of great beauty and very high community value. It is lined on either bank with maintained parkland containing display beds, seating areas, specimen trees and groupings of trees and shrubs that accentuate the open space, and are part of the beautification work undertaken by the NCC over the past century. In fact, Queen Elizabeth Drive, on the west side of the Canal at this location, was the first "beautification project" by the NCC's predecessor, the Ottawa Improvement Commission, at the turn of the twentieth century. The Canal forms a designed Cultural Landscape of some significance and has been designated both a National Historic Site of Canada (NHSC) and a UNESCO World Heritage Site (WHS).

A major feature of this area today is a system of multi-use trails that parallel the Canal and provide recreational and active transportation linkages with neighbourhoods beyond the District. The intersection of the Queensway and the Canal consists of the long-span bridge, the relatively narrow Canal at this location and pedestrian/bicycle trails on either side of the Canal. Defining the edges of these linear parklands are two major auto parkways: the aforementioned Queen Elizabeth Drive on the west and Colonel By Drive on the east. These scenic drives are a key part of the NCC enhanced transportation routes leading visitors and residents through the Capital Core area.

The District is critically linked north-south by the Canal, the abutting linear parkland with the trails and the scenic drives that parallel the Canal. The long-span Queensway eastbound and westbound bridges ensure that there is an uninterrupted link between the north-south streets at Elgin, Metcalfe and Main between the neighbourhoods in the north and south. There is a heritage value associated with these Queensway bridges in their role facilitating key connections between the different neighbourhoods and destinations in this southeast area of the City core.

0.2.4. BUILDINGS

As seen below in the Inventory of Heritage Resources, there is only one building designated under Part IV of the Ontario Heritage Act in the vicinity of the sites.

However, there are several buildings listed on the Municipal Register in the Study Area and there are "fabric" buildings that contribute to historic streetscapes within view of the four bridge sites. These buildings are more difficult to address as they do not have any official designation, but they do have heritage and community value that must be respected and should be protected. Almost all of these buildings are one and two-storey, small-scale, late nineteenth or early twentieth century structures.

0.2.5. LANDSCAPE

The Queensway corridor landscape through the downtown Study Area is a transportation corridor with views of the taller buildings and rooflines of adjacent buildings to the north, except where lined by a noise barrier at the Main Street Bridge and eastward. It is devoid of woodland trees in the section west of the Canal except for single trees. East of the Canal there is a treed hedgerow and woodland lining the south side of the corridor. Longer viewsheds over the Canal toward Ottawa and South toward Lansdowne are offered from the Queensway where it crosses the Canal.

The Canal Bridge is highlighted by its crossing of the NCC parkways & pathways and the UNESCO World Heritage Site and National Historic Site, the Rideau Canal. The area includes multi-use recreational pathways and sidewalks. Basic landscaping and trees at both the east and west abutments somewhat mitigate the harshness of the concrete structure at its ends, but further mitigation would be desirable.

0.2.6. SUMMARY OF CONTEXT-SENSITIVITY FACTORS

Context-sensitivity at the Metcalfe, Elgin and Main Street sites will essentially be addressed through the CSD measures undertaken previously by the Ottawa Mid-town bridges Preliminary Design Team (including BTE, MTBA and L+A). This is discussed further below. The Canal crossing is a unique challenge and opportunity for context sensitivity and enhancement. It incorporates heritage issues not only from the surrounding communities, but with respect to the unique status and high heritage value of the Rideau Canal UNESCO World Heritage Site.

The following photos and captions summarize the site context:

The Rideau Canal Environment includes automotive parkways and multi-use recreational paths.

This is a view of Queen Elizabeth Driveway, north of the Queensway Bridge



Queensway Bridge over the Canal. Note the recreational pathway (foreground) and the open greenspace



North of the Queensway Bridge over the Canal is the recent Corktown Pedestrian Bridge



Queensway Bridge over Rideau Canal - view from the Pretoria Bridge.

Note piers in the Canal, recreational pathway and greenspace

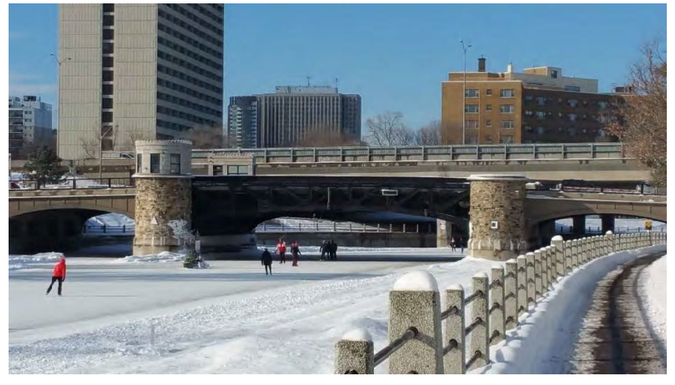


The Pretoria Lift-Bridge was reconstructed in the early 1980s.

Here is a canal boat travelling under it



The Pretoria Bridge appears to "blend in" with the Queensway Bridge beyond



Main Street underpass below Queensway.

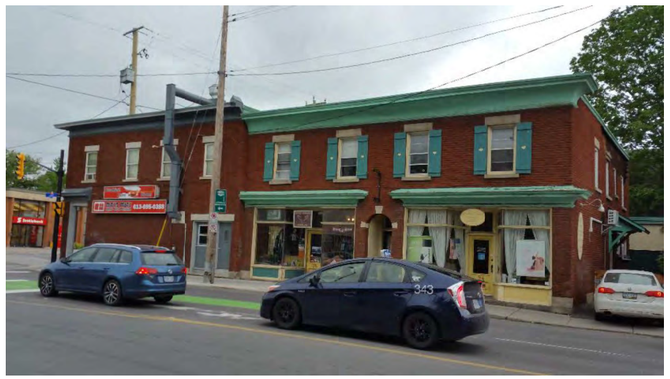
Note new murals being added to the underpass walls



Just south of the Main Street underpass are the Old Town Hall (now a community centre; designated under Part IV of the Ontario Heritage Act) and a former gas station landmark



The community fabric near the Main Street Bridge includes early 20th century commercial structures



Isabella Street at Metcalfe underpass, looking east



Typical treed embankment on south side of Queensway (MTBA)



Catherine Street near Metcalfe Street, looking east



0.3. SECTION THREE

0.3.1. CSD ELEMENTS APPLICABLE TO RIGID FRAME SITES

In this Study, the CSD has two main components: 1) implementing CSD elements at the rigid frames and within the Queensway corridor; and 2) the concept design of the Rideau Canal replacement bridge, applying a CSD approach.

The following is a sample of CSD elements applied at the rigid frame sites on the adjacent Queensway Mid-town Bridges Preliminary Design and EA Study (completed and EA approved). These CSD elements will be applied at Metcalfe, Elgin and Main Streets. Refer to ***'Section 0.8.1'*** below for additional information.

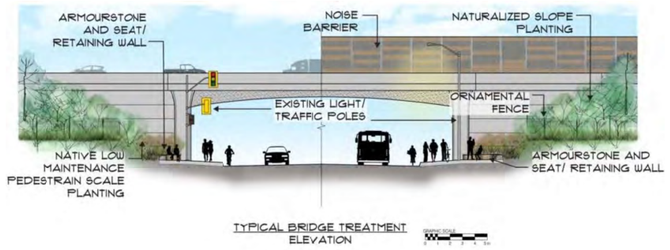


Figure 2 - Typical rigid frame bridge treatment - Elevation *(Lashley + Associates)*

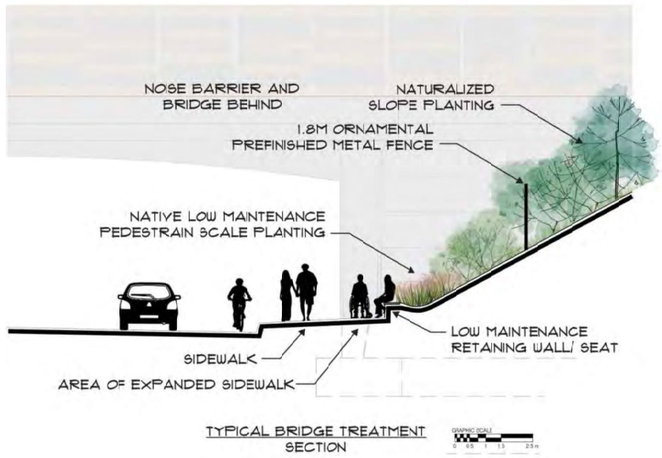


Figure 3 - Rigid frame bridge treatment - Elevation detail *(Lashley + Associates)*



Figure 4 - Typical rigid frame bridge, showing before and after treatment



Figure 5 - Elevation of the treated bridge showing precast concrete facade elements and new lighting



Figure 6 - Detail showing pier detail before and after bridge replacement and treatment

0.4. SECTION FOUR

RIDEAU CANAL REPLACEMENT BRIDGE

The following reports on the progress of the design of the Rideau Canal proposed replacement bridge.

0.4.1. ISSUES IDENTIFIED THROUGH CONSULTATION TO DATE

There have been multiple meetings with stakeholders to date that included detailed exchanges on CSD issues. Additional meetings are planned with authorities, the public, and the Advisory Committee on Planning, Design and Real Estate (ACPDR) of the National Capital Commission (NCC).

This body of nationally-recognized leaders in their fields (architecture, engineering, landscape and urban planning) is generally seen as the key approval body for interventions related to federally-owned Lands and Infrastructure in the Capital. NCC staff and Parks Canada work closely together with the ACPDR.

The following is a brief summary of collaboration/feedback to date:

City of Ottawa
Multiple meetings were conducted that included CSD, defining directions and understandings regarding CSD elements previously applied on rigid frames sites, and applying a greater level of scrutiny and care in developing replacement bridge options over the historic Rideau Canal. Also discussed were the concepts for construction staging areas, detour routes and timing of construction. This approach has been undertaken previously for other segments of the Queensway. Therefore the City is familiar, and in general agreement with the directions.

Parks Canada
Multiple meetings were held (including one at Parks Canada Rideau Canal Headquarters in Smiths Falls) that focused on CSD, defining directions and understandings about applying a greater level of scrutiny and care in developing replacement bridge options over the historic Rideau Canal, for which Parks Canada is responsible. They are particularly sensitive to maintaining the Canal walls in place as-is, and would be interested in seeing piers removed from the Canal if possible. Parks Canada have provided a preliminary letter outlining their concerns and at this stage have indicated a preference for a below-deck type structure for the replacement bridge. With a full span and below-deck structure, this would result in a reduced clearance height for the NCC's Parkways that travel under this pair of bridges (Colonel By Drive and Queen Elizabeth Drive). Also discussed were the concepts for construction staging areas, detour routes and timing of construction.

National Capital Commission
Multiple meetings were conducted that included CSD, defining directions and understandings regarding CSD elements previously applied on rigid frames sites, and applying a greater level of scrutiny and care in developing replacement bridge options over the historic Rideau Canal. The NCC is particularly sensitive to the Canal-side parkways and multi-use pathways. They would like to see opportunities for improvements as part of this project but no details have come forward to date. The clearance heights above Colonel By Drive and Queen Elizabeth Drive are important issues. Also discussed were the alternatives for construction staging areas, detour routes and timing of construction. This approach has been undertaken previously for other segments of the Queensway, therefore the NCC is familiar and in general agreement with the directions. NCC staff indicated they will defer to ACPDR before preparing official responses.

0.4.2. DESIGN SKETCHES FOR PIC NO. 1: RIDEAU CANAL BRIDGE REPLACEMENT OPTIONS

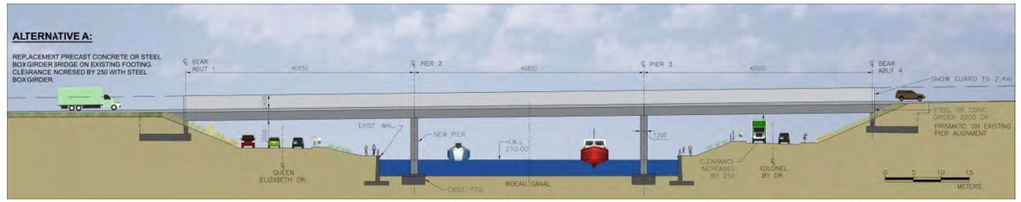


Figure 7 - Replacement precast concrete or steel box girder bridge on existing footing. Clearance increased by 250 mm with steel box girder *(MTBA, BROWN/CO and BT Engineering)*

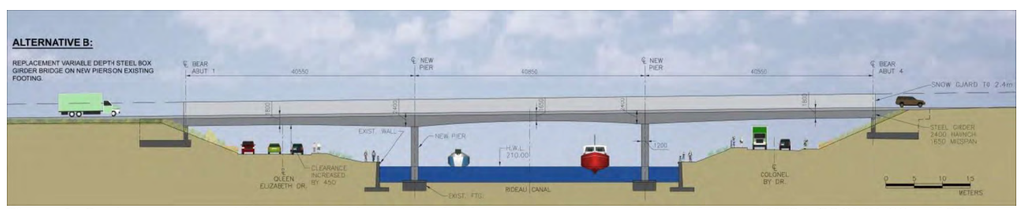


Figure 8 - Replacement variable depth steel box girder bridge on new piers on existing footing *(MTBA, BROWN/CO and BT Engineering)*

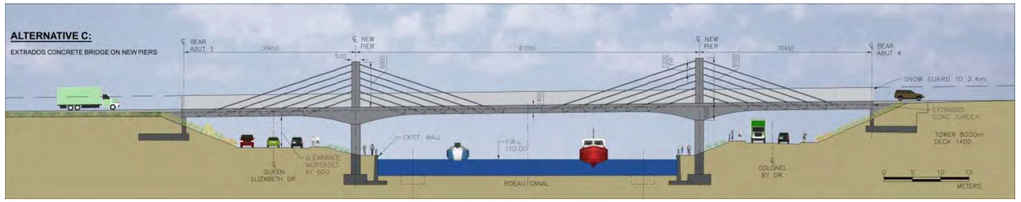


Figure 9 - Extrados concrete bridge on new piers *(MTBA, BROWN/CO and BT Engineering)*

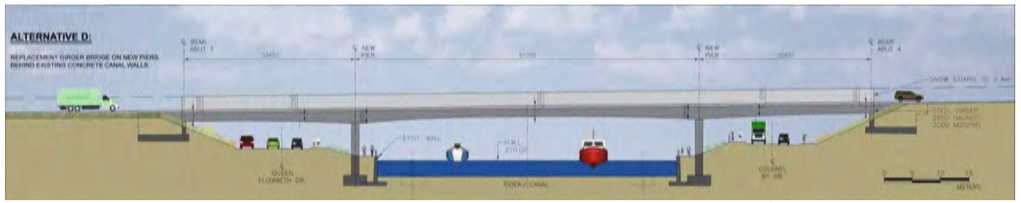


Figure 10 - Replacement girder bridge on new piers behind existing concrete Canal walls *(MTBA, BROWN/CO and BT Engineering)*

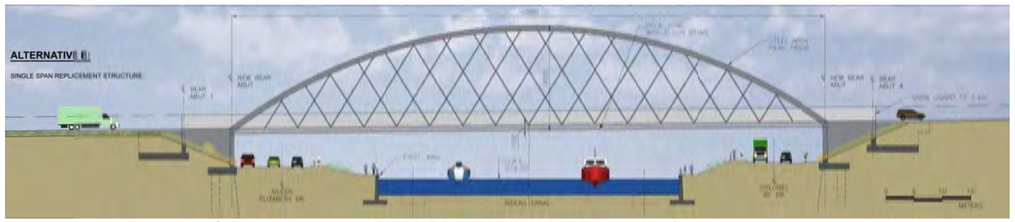


Figure 11 - Single span replacement structure *(MTBA, BROWN/CO and BT Engineering)*

0.5. SECTION FIVE

0.5.1. HERITAGE RESOURCES INVENTORY

To evaluate impact of a new intervention into a historic area, district or place, the first requirement is to understand the nature of heritage resources in and near that area.

A heritage resources inventory identifies heritage resources, in this case, tangible built and landscape resources, and describes them and the nature of their designation. The following is an inventory of built heritage resources related to the four bridge sites of this Study Area:

0.5.1.1. BUILT HERITAGE

INDUSTRIAL, COMMERCIAL & INSTITUTIONAL

PART IV DESIGNATION:



Ottawa East Old Town hall Community Centre *(2017)*

- **61 Main Street - Ottawa East Old Town Hall Community Centre:** Designated in 1982, the Ottawa East Town Hall is a two-and-a-half storey brick structure and a good example of a late 19th century institutional building. Significant elements of the building include: truncated hip roof, the projecting frontispiece with gabled roof and the second floor round arched windows.

The building was erected in 1895 for the Village of Ottawa East and has been a centre for community affairs since that time.



Delaware Ave. *(Google Street, 2015)*

- **7 Delaware Avenue - Embassy of the Republic of Armenia:** Built in 1907 and designated in 2017 2017, the building at 7 Delaware Avenue is a two-and-a-half-storey structure clad in cream-coloured, smooth stucco. It features noteworthy examples of fine craftsmanship on both the exterior and interior of the building. The building has been used as an embassy since 1965. Its cultural heritage significance is enhanced by its location along the Queen Elizabeth Driveway.



Canadian Museum of Nature
(Google Street, 2018)



Gordon Construction - Former Gas Station *(2017)*



North side of Pretoria Bridge
(2018)

FEDERAL DESIGNATION:

- **240 Mcleod Street - Canadian Museum of Nature:**

The Canadian Museum of Nature is a designated Classified Federal Heritage Building with historical and architectural significance. It was built between 1905 and 1911.

Also known as the Victoria Museum, this building is a Beaux Arts composition in Gothic cladding, and is the largest and most richly ornamented of the designs of David Ewart (Chief architect of the Department of Public Works).

BUILT HERITAGE RESOURCES WITHOUT DESIGNATION:

- **60 Main Street - Former Gas Station (now Gordon Construction office):**

This property is characteristic of the fine grain historic development and pedestrian scale of the former village of Ottawa East. It is situated on a prominent street corner across from the former Town Hall and beside Ballantyne Park. Built in the 1930s, it was subsequently converted into an office for a construction company, while maintaining the heritage character of the gas station through its scale, massing, carport, materials, and historic signage.

60 Main Street is potentially worthy of designation as a Category 2 property in a Part V Heritage Conservation District under the Ontario Heritage Act, should the community choose to pursue the same.

- **Pretoria Bridge:**

The existing Pretoria Bridge is a 1981 recreation of the original, which was a rare example of a surviving direct-lift type of vertical lift bridge by the Strauss Bascule Bridge Company. Although it is a reconstruction, many character-defining elements and materials of the original Pretoria Bridge have been retained or re-created. The bridge is valued for its picturesque form, arched steel truss, crenellated sandstone piers, and the ability of the bridge to accommodate boat traffic by the raising of its centre span.

The Pretoria Bridge is potentially worthy of designation under Part IV of the Ontario Heritage Act, should its owner choose to pursue same.



Ballantyne Park view looking east
(2017)

- **Ballantyne Park:**

Ballantyne Park is associated with James Ballantyne, who played an integral role in the development of the village of Ottawa East as a prominent businessman, reeve, County Councillor, and builder of Town Hall (across the street). Ballantyne Park is an important public space within Old Ottawa East and contributes to the neighbourhood character and memory of the former village.

Ballantyne Park is likely worthy of designation under the Ontario Heritage Act, should the City choose to pursue same.

0.5.2. MTCS REQUIREMENTS & APPLICABLE LEGISLATION/REGULATIONS

A **Cultural Heritage Assessment** is part of the Environmental Assessment (EA) study process requiring the completion of many tasks in order to understand the nature and heritage value of the resources potentially impacted by the proposed undertaking of rehabilitation/ replacement of the subject highway bridges. As well, the assessment requires a discussion of alternative configurations for the undertaking and mitigation strategies for impacts on heritage resources with cultural heritage value.

The completed Cultural Heritage Assessment report is reviewed by the Ministry of Tourism, Culture and Sport (MTCS) which has provided guidance in Ontario Heritage Tool Kit Info-Sheet #5 as to the generally expected contents of the Assessment report. The report is to include historical research that examines the settlement chronology that influenced the built, landscape or archaeological evidence currently found on the site. This history of development is the foundation of field work that identifies the resources that embody heritage values, both tangible and intangible, that must be safeguarded and conserved in the planning and design of the project. There is also guidance provided in the Ontario Heritage Act Reg. 9/06 as to how to evaluate heritage values of different types; physical or design, historical or associative or contextual. This guidance has been incorporated in this Cultural Heritage Assessment report, which reflects the broader Context Sensitive Design approach embodied in this report.

The study area for the proposed undertaking includes 7 bridges at 4 locations on Highway 417 (Queensway) from Metcalfe Street to Main Street in central Ottawa. The bridge structures themselves have been evaluated by the Ministry of Transportation (MTO) and have been determined not to have heritage value. The Cultural Heritage Assessment report focuses on the context of the bridges and the potential staging areas for construction within a defined Study Area, specifically identifying and evaluating the built and cultural heritage landscape features. Archaeological assessments, both terrestrial and marine (Rideau Canal) of the area, including historical research into the indigenous use of the

Study Area have been completed (terrestrial) and will be completed (marine) as separate assignments for this EA Study and are not part of this report.

0.5.2.1. RELEVANT DEFINITIONS

There are several definitions used in a Cultural Heritage Assessments that assist in understanding the heritage resources being considered, whether they are categorized as Built Heritage Resources, Cultural Heritage Landscapes or Archaeological Resources.

Built Heritage Resources are defined in the Ontario Provincial Policy Statement 2014 as: *A building structure, monument, installation or any manufactured remnant that contributes to a property's cultural heritage value or interest as identified by a community, including an Indigenous community.*

Cultural Heritage Landscapes are defined as: *Properties with a defined geographical boundary or a site or property of cultural heritage significance that reveals evidence of modification by human activity and that is valued by a community.* There are three different types of Cultural Heritage Landscapes: designed, evolved, and associative. Within the evolved cultural landscape type, there are two categories: relict where the evolutionary use has ended; or continuing, where the evolutionary process is still in progress and the resulting cultural landscape exhibits significant material evidence of its evolution over time. (Cultural Heritage Landscapes Bulletin issued by the Ontario Heritage Trust HIS-020. Revised Nov. 2012).

Cultural Heritage Landscapes are also defined as: *A defined geographical area that may have been modified by human activity and is identified as having cultural heritage value or interest by a community, including an Aboriginal community.* The area may involve features such as structures, spaces, archaeological sites or natural elements that are valued together for their interrelationship, meaning or association (Ontario PPS 2014).

Heritage resources may also include **Archaeological Resources**. Archaeological Resources include: artifacts, archaeological sites, and marine archaeological sites as defined under the Ontario Heritage Act. The identification and evaluation of such resources is based upon archaeological fieldwork undertaken in accordance with the Ontario Heritage Act (Ontario PPS 2014).

Heritage Attributes are the physical resources that are evidence of past activity that embodies heritage values.

Heritage Attributes are defined as: *The principal features or elements that contribute to a protected heritage property's cultural value or interest, and may include the property's built or manufactured elements, as well as natural landforms, vegetation, water features and its visual setting (including significant views or vistas to or from a protected heritage property)* (Ontario PPS 2014).

Significance: The term "significance" is a key component of heritage evaluation after the heritage value and integrity of the resources have been assessed. Not all heritage resources will be determined to have heritage significance.

Significance is defined in the PPS 2014 as follows: *In regard to cultural heritage and archaeology, resources that have been determined to have cultural heritage value or interest for the important contribution they make to our understanding of the history of a place, an event, or a people.* Where Significance has been determined using an evaluation process that may incorporate Ontario Reg. 9/06, Section 2.6.1 of the PPS 2014 clearly states that "significant built heritage resources and significant cultural heritage landscapes shall be conserved."

The evaluation of significance of heritage resources may also include consideration of the integrity of the property: the degree to which it is intact, and the original form, materials and use remain generally unchanged. Integrity is not the same consideration as "condition", which is a measure of the repair of the property and which may typically be reversed through maintenance.

Integrity: The Ontario Provincial Tool Kit 2005 Heritage Property Evaluation describes integrity as follows: *"Integrity is a question of whether the surviving physical features (heritage attributes) continue to represent or support the cultural heritage value or interest of the property".*

Cultural Heritage Value:
Value is the significance and worth that people attach to something, either individually or collectively, at local, national or international level(s), and can be applied to cultural qualities.

Cultural heritage value **means the aesthetic, historic, scientific, cultural, social or spiritual importance or significance for past, present or future generations. The heritage value of a historic place can be embodied in its character-defining materials, forms, location, spatial configurations, uses and cultural associations or meanings.**

Places may have a range of values for different individuals or groups. The term cultural heritage value is synonymous with *heritage significance* and *cultural significance*. Cultural significance and/or its understanding may change as a result of the continuing history of a place or as a result of new information.[1]

Refer also to Section 0.5.4.1 below on Cultural Landscapes. Note: UNESCO has recently further studied **cultural heritage landscapes in urban settings** and, to a certain extent, updated and made more comprehensive, the global understanding of value within urban places. Part of the motivation for this was

[1] With references from the *Standards & Guidelines for the Conservation of Historic Places in Canada* (Parks Canada, 2011), www.historicplaces.ca and the ICOMOS *Burra Charter* (1999)

to find ways to harmonize rapid urbanization & density growth with historic places that are often in city-centres, where there are very strong real estate pressures, especially during rapid growth periods. UNESCO defines the **historic urban landscape** (2011) as:

> *"The historic urban landscape is the urban area understood as the result of a historic layering of cultural and natural values and attributes, extending beyond the notion of 'historic centre' or 'ensemble' to include the broader urban context and its geographical setting. This wider context includes notably the site's topography, geomorphology, hydrology and natural features, its built environment, both historic and contemporary, its infrastructures above and below ground, its open spaces and gardens, its land use patterns and spatial organization, perceptions and visual relationships, as well as all other elements of the urban structure. It also includes social and cultural practices and values, economic processes and the intangible dimensions of heritage as related to diversity and identity."*[2]

0.5.2.2. RIDEAU CANAL WORLD HERITAGE SITE

The Rideau Canal was designated a **World Heritage Site** (WHS) in 1996 and its Management Plan was updated and approved in 2005. The Rideau Canal WHS lands are owned by the Government of Canada and administered by Parks Canada. The World Heritage Site designation is based on the **Outstanding Universal Value** of the Canal, a rare example of a 202 km long slack water canal, built in the early 1800s and still in operation. It consists of navigable lakes, rivers and excavated rivers, and 24 lock stations, 50 locks, 73 dams (to assist in the management of water levels) and 19 km of excavated canal. The extensive nomination process listed the many components of the canal system as having cultural heritage value and meeting the criteria for recognition as a WHS. In addition to the canal and locks, the associated buildings, equipment and forts are included in the nomination.

Management of the World Heritage Site is guided by the actions outlined in the 25-page Management Plan and includes recognition that many of the lands bordering the canal are in private or other public jurisdictions' ownership and that the potential military use of the canal has evolved into a sustainable tourism use. The WHS Management Plan includes guidance for regular reporting and monitoring of the condition of the components so that scheduled repairs and conservation activities may be planned. Enforcement of the Management Plan is guided by the Historic Canals Regulations, pursuant to the Department of Transportation Act. The approved Management Plan identifies guidelines for the operation and management of activities, in and adjacent to the canal, that are particularly relevant to the planning for the Queensway bridge crossing:

[2] http://historicurbanlandscape.com/themes/196/userfiles/download/2016/6/7/wirey5prpznidqx.pdf, *page 11*

Ensure that new bridges and utilities crossing proposal include detailed environmental assessments, so the property will maintain the authenticity of its shoreline and cultural resources and the environment and scenic qualities of its setting. Pg. 14 WHS Management Plan.

The Canal has also been designated nationally. In addition to the WHS Management Plan there is also a 2005 Management Plan for the **Rideau Canal National Historic Site** (NHS). This 88-page document contains the history of the canal and provides guidance on the protection, conservation of the commemorative integrity of the canal and interpretation of its heritage values. The NHS Management Plan describes the designated place as consisting of the lands and waters under the jurisdiction of Parks Canada including the bed of the Rideau Canal to the high-water mark between the Ottawa River and the harbour in Kingston. All work on the canal components is to follow best practices in the field of heritage conservation and the *Standards and Guidelines for the Conservation of Historic Places in Canada* (Parks Canada, 2nd Edition).



Figure 12 - Each winter, the Rideau Canal becomes the world's largest skating rink. Here, a skater at dawn approaches the existing bridge from the north. *(2018)*

0.5.2.3. RELEVANT NATIONAL CAPITAL COMMISSION AND PARKS CANADA POLICIES

NATIONAL CAPITAL COMMISSION POLICIES

The **National Capital Commission** (NCC) is responsible for the planning and management of federal lands in the Capital region with a purpose of enhancing the scenic beauty of the area with public works that encourage the enjoyment and appreciation of its cultural and natural heritage. The approved NCC Plan for Canada's Capital is based on 3 themes: an inclusive and meaningful capital, a picturesque and natural capital, and a thriving and connected capital. As part of implementing works that will enhance these themes, the NCC has created and maintains an extensive system of open space and parkland with multi-purpose trails that provide essential linkages between the capital precinct and

the surrounding area. The Rideau Canal is a centrepiece of this trail network and accommodates ever increasing use of the canal lands for recreational activities in all seasons. The proposed undertaking of repairing or replacing the Queensway bridge at the Rideau Canal must recognize the important role that the abutting trails and linear parkland play in the daily life of the Capital and ensure that any disruptions or alterations to the canal-side trails are mitigated.

PARKS CANADA POLICIES

The **Rideau Canal Historic Site Management Plan** of 2005 focuses on the Canal as a National Historic Site (NHS). This Management Plan lists the following values as being associated with the designated place:

- the engineering achievement of the construction of the Canal;
- its continuous seasonal operation since 1832;
- the survival and integrity of the Canal system with the majority of its original built resources intact;
- the continuity and integrity of the lock stations and the sense of a complete "system" that these stations convey; and
- the historic, ecological and visual associations with the shore-lands and communities along the waterway which contribute to the unique historical environment of the Canal. (NHS Management Plan p.69).

The NHS Management Plan includes in its Appendix a **Commemorative Integrity Statement** that was approved in 2000, which is a summary of heritage attributes and values, similar to a Statement of Cultural Heritage Value. This Plan outlines several general principles for the management of features found within the Study Area of the Queensway bridges project:
The designated place will be unimpaired or not under threat when:

- through navigation of the Canal system is maintained to help assure the preservation of the unique historical environment and safeguard the level one cultural resources; and
- the visual relationship between the Canal and the heritage landscape in the central core of Ottawa remains evident and intact and the heritage character of those identified corridor communities is safeguarded (NHS p.70).

The evaluation of the cultural heritage resources included in the Cultural Heritage Assessment report considers those aspects of the Rideau Canal that have been identified already as having cultural heritage value - the Canal alignment and shape, and the views to and from the Canal from the adjacent lands.

0.5.2.4. ONTARIO HERITAGE ACT, PROVINCIAL POLICY STATEMENT (PPS) 2014, ADJACENT LANDS

The research, identification and documentation of cultural heritage resources focuses on those resources found within the Study Area. It includes identification of properties already designated under Part 4 (Individual property designation) or Part 5 (District designation) of the Ontario Heritage Act or properties on the Municipal Heritage List. These latter properties have potential heritage value and are candidates for designation. Under Provincial policy, lands that are adjacent to protected properties, such as those that are designated or listed (and possibly including the Rideau Canal WHS and NHS) are also subject to review and assessment in order to determine if the proposed changes will impact their cultural heritage value.

The definition of *Adjacent Lands* is as follows: a) for the purposes of policy 1.6.8.3, those lands contiguous to existing or planned corridors and transportation facilities where development would have a negative impact on the corridor or facility. The extent of the adjacent lands may be recommended in guidelines developed by the Province or based on municipal approaches that achieve the same objectives; b) for the purposes of policy 2.1.8, those lands contiguous to a specific natural heritage feature or area where it is likely that development or site alteration would have a negative impact on the feature or area. The extent of the adjacent lands may be recommended by the Province or based on municipal approaches which achieve the same objectives; c) for the purposes of policies 2.4.2.2 and 2.5.2.5, those lands contiguous to lands on the surface of known petroleum resources, mineral deposits, or deposits of mineral aggregate resources where it is likely that development would constrain future access to the resources. The extent of the adjacent lands may be recommended by the Province; and d) for the purposes of policy 2.6.3, those lands contiguous to a protected heritage property or as otherwise defined in the municipal official plan.

0.5.3. HISTORICAL RESEARCH

In order to obtain a better understanding of the historic importance, if any, of the existing four bridge sites, a review of settlement history of the area is a good starting point.

These histories can be extremely in-depth, going back to pre-contact times and relating many nuanced details of the historic evolution of a site. They can also start with a general, past-century overview in order to understand urban development patterns as a foundation of current settlement configurations. For this mandate, the latter method was selected as most appropriate to the scope of work. The following is a brief summary of this initial research:

0.5.3.1. SETTLEMENT HISTORY OVERVIEW

Historic air photos have been useful to identify settlement history since 1928 (oldest available). They are particularly useful in analysis for the 1928 to 1960's period, as that is one of great change, culminating in the building of the Queensway on the old railway bed.



Figure 13 - Study Area ▪ 1928 Aerial *(GeoOttawa)*



Figure 14 - Study Area ▪ 1958 Aerial *(GeoOttawa)*



Figure 15 - Study Area ▪ 1958 Aerial showing Rideau Canal and Grand Trunk Roundhouse to the east *(GeoOttawa)*

Historic Insurance Maps have also been useful in understanding this area's evolution, starting from the earliest available, 1902.

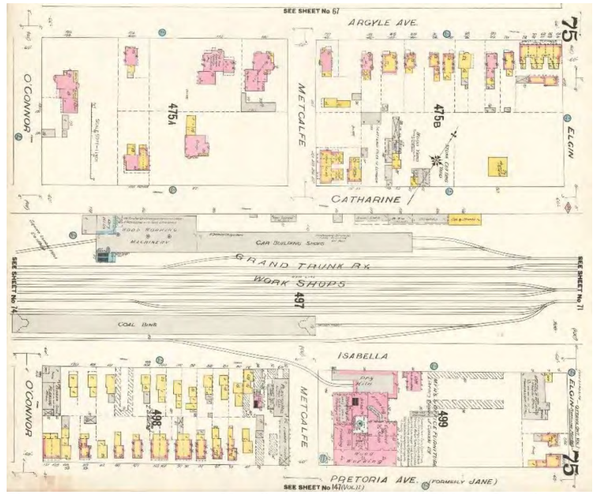


Figure 16 - 1902 Insurance Map (immediately west of Rideau Canal) *(Library and Archives Canada)*

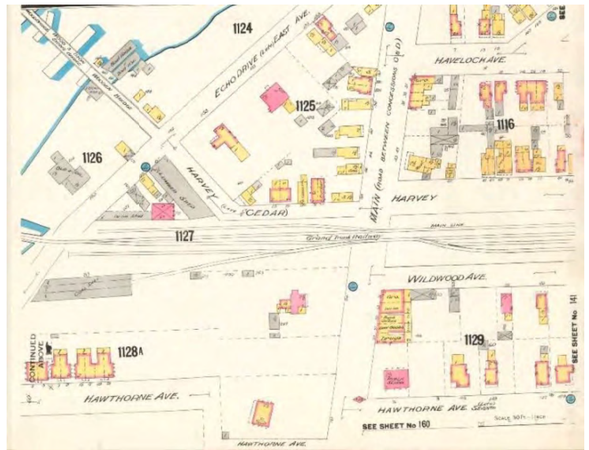


Figure 17 - 1902 Insurance Map (immediately east of Rideau Canal *(Library and Archives Canada)*

Historic photographs of the study area have been included to illustrate the close relationship between the adjacent neighborhoods, the Rideau Canal and the railroads prior to the Queensway Highway construction.

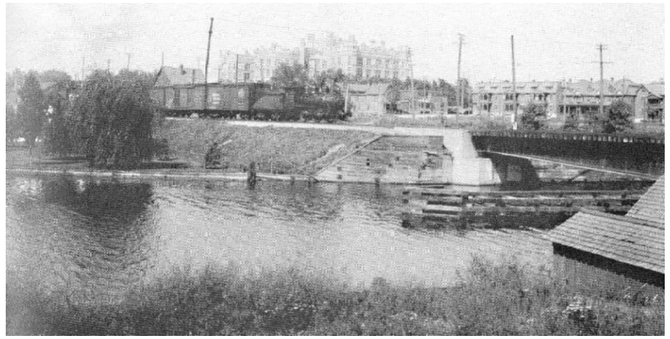


Figure 18 - Rail bridge over Canal c1910 (Queensway Now), Victoria Museum in the background *(Library and Archives Canada)*

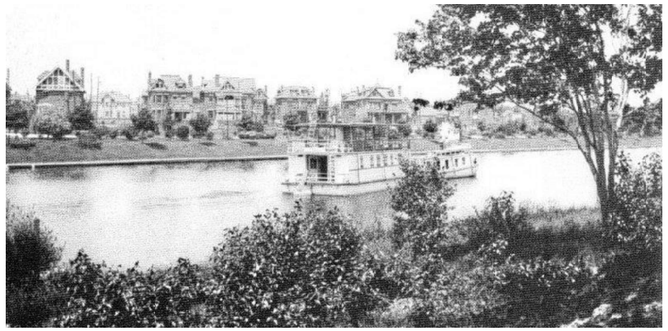


Figure 19 - Canal view from Ottawa East - north of swing bridge c1911 *(Library and Archives Canada)*

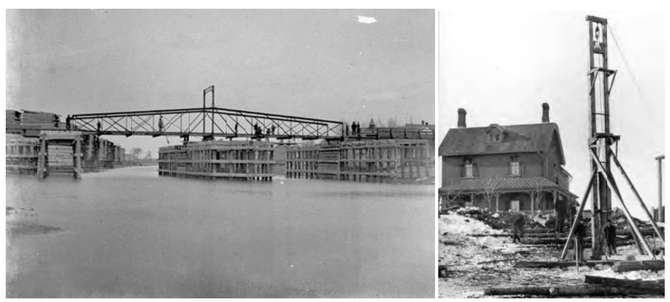


Figure 20 - During swing bridge construction and detail of pile driver c1890 *(Library and Archives Canada)*





Figure 21 - Road construction on Main St. at Hawthorne c1895 *(Library and Archives Canada)*



Figure 22 - Harvey Street at Main Street, Ottawa East Railway to the right, c1900 *(Library and Archives Canada)*

0.5.4. DESCRIPTION OF CONTEXTS

0.5.4.1. CULTURAL LANDSCAPES

Cultural heritage landscapes include buildings, structures and landscape settings that contain remnants from different periods of settlement history. The Study Area is a continuing evolved cultural landscape that shows evidence of change over time beginning in the early 19th century when post contact development occurred. The development has created a unique neighbourhood character made up of many varied components of heritage and contemporary resources. The identification and heritage evaluation of the cultural landscape setting for the Queensway bridges will describe the individual cultural landscape details that have heritage value and therefore must be considered in evaluating the bridge rehabilitation or replacement undertaking.

0.5.4.2. NEIGHBOURHOOD SCALE

The Study Area west of the Canal is generally located between two neighbourhoods, Centretown to the north and the Glebe to the south. A portion of Centretown is designated a Heritage Conservation District under Part V of the Ontario Heritage Act.

There are four areas within the Study Area that continue to show evidence of small-scale neighbourhood residential development. This type of built heritage is complemented by a pedestrian scale streetscape with narrower sidewalks and mature trees overhanging the streets in the front yards. One of these residential areas is located northwest of the study area between Elgin and Queen Elizabeth Drive and consists of larger 19th century homes on well maintained, landscaped yards.

On the east side of Colonel By Drive are several residential areas; one of them is located on the north side of Harvey Street, east of Main Street and it consists of generally of one to one-and-a-half storey residences on smaller lots. The construction of the Queensway has removed any buildings and structures along the south side of Harvey St., so that the current residences directly face a heavily vegetated buffer strip along the highway. West of Main St., on Harvey St., there is an area of two-to-three stories of modern residential infill. This infill housing contains mature trees and small parking areas. Based on the historic aerial photos, these lands were in industrial use in the early 20th century and have changed over time to residential redevelopment.

South of the Queensway and east of the Canal, Hawthorne Avenue retains remnants of earlier single-family residential development. The section of Hawthorne Ave., connecting Colonel By Drive and Main Street, has a row of small residential and commercial buildings and open space at Ballantyne Park. The Park consists of mown lawn area accented with a row of trees close to the street and mature vegetation along the Queensway embankment on its north side. Several of these trees appear to predate the construction to an earlier use. A prominent historic plaque recognizing a key local leader, James Ballantyne, is found in the centre of the Park. Two modest commercial buildings define the eastern edge of the park and face Main Street. These buildings are remnants of neighbourhood commercial development that formerly lined Main Street

On the south side of Hawthorne Avenue is a row of two-to-three storey residential properties. The buildings show a variety of materials, construction details and ages but present a pedestrian scale character to the street. The street is several lanes wide carrying higher volumes of traffic, reducing the number of mature trees overhanging the street. On Hawthorne Avenue, east of Main Street, there remains an intact section of residential development, much of it dating from the 19th century, and pedestrian scale with mature trees overhanging the street and located close to the sidewalk.

The neighbourhood context for the Queensway bridges is varied and ranges from large scale urban developments to small scale neighbourhood streets. Many of the neighbourhood resources overlook the vegetative embankments of the Queensway. These embankments, along with the maintained park land of Ballantyne Park, are key green open spaces in the neighbourhood. At the northeast corner of the intersection of Hawthorne and Main is Old Town Hall Community Centre. This impressive building is surrounded by lawn area and abuts natural vegetation on the Queensway embankment.

Continuing south on Main Street from the intersection of Hawthorne Avenue, there is an increased amount of newer infill development with a mid-rise tower and other commercial buildings.

In the area west of the Canal on Isabella Street there is new development consisting of commercial buildings with large outdoor parking areas and mid-rise residential buildings. These buildings face a vegetative embankment across the street along the edge of the Queensway.

0.5.4.3. CIRCULATION NETWORK, ROADS, STREETS, PEDESTRIAN/CYCLING ROUTES, CANAL

Within the collection of built and landscape resources that make up the cultural landscape of the Study Area, there is a significant circulation system made up of local streets and sidewalks, in addition to the major elevated highway with its access and exit ramps.

The construction of the Rideau Canal shaped the path of development so that by the end of the century a traditional grid pattern of streets and lots was a key part of the Study Area. These components together with the Rideau Canal, Queen Elizabeth Drive, Colonel By Drive and the trail system still dominate the Study Area cultural landscape.

The railway lands have been converted to the Queensway highway corridor and the Rideau Canal remains in use as a linear recreational facility having evolved from its original military purpose. These new land uses have retained the former alignments. The proposed undertaking of repairing or replacing the bridges at four locations in the Study Area is part of the ongoing management of the current road network.

There is a hierarchy of streets within the Study Area with wider connector roads linking the area with areas beyond it. The Queensway bridges on Metcalfe, Elgin and Main Street are part of this group of major north-south roads that have been designed to enhance these connections.

The east-west streets that run parallel to the Queensway, Isabella Street on the south side and Catherine Street on the north, connect with the access and exit ramps. Isabella is a multilane street without street trees and has a narrow sidewalk on the south side. The north side of Isabella runs along the naturalized slope of the embankment. Catherine Street has on-street parking, a wider sidewalk on the north side and is also without street trees. The embankment along the Queensway that abuts Catherine Street consists of maintained turf and groupings of trees, including some conifers that have been deliberately planted as part of the past ramp construction. The visual character of these streets is impacted by the type of adjacent large-scale redevelopment, consisting of institutional and multi-unit residential buildings.

Hawthorne Avenue continues east from the Pretoria Lift Bridge which provides an important crossing of the Rideau Canal. Hawthorne Avenue between Colonel By Drive and Main Street has no street trees except for those in front yards on private property and along Ballantyne Park. There are several travel lanes with some on-street parking. Where the street runs along Ballantyne Park, the row of mature deciduous trees in the park provides a pedestrian scale to the street. The former town hall is a landmark property that is a focal point of the view east on Hawthorne Avenue. This building, along with the former gas station and the neighbourhood commercial properties at the intersection, provide a distinctive character to this part of the Study Area.

As Hawthorne Avenue continues past Main Street, the adjacent properties are generally single-family residences two to two-and-a-half storeys in height with driveways and landscaped front yards many of which contain mature deciduous trees that overhang the street. The rear yards back on the vegetated embankment of the Queensway.

Harvey Street is located on the north side of the Queensway and the primarily neighbourhood scale residential street overlooks the naturalized vegetation on the embankment. Several of the residences east of Main Street are undergoing renovation activity. However, the one to one-a-and half storey form of the residences remains generally intact. Many of the front yards contain mature trees, both coniferous and deciduous that overhang the street. There is on-street parking on a widened section of the street and a single sidewalk on the north side. On the section of Harvey Street west of Main Street the scale of the

buildings is generally larger, and they are set closer to the street. As a result, there is no opportunity for street trees, but this makes for a unique and charming "urban village" streetscape. The south side of Harvey Street runs along the Queensway embankment with a wide mown lawn, a concrete retaining wall and naturalized vegetation.

There are 2 multi-use trails used by cyclists and pedestrians that run on either side of the Rideau Canal. These Western and Eastern Pathways are part of the active transportation system that is found throughout the NCC lands. There are display beds and specimen plantings of trees and shrubs along the routes. There are standard design features for railings, signage, benches and site furniture along the paths. The paths are two-way, and the asphalt paving is divided by a painted line. Pedestrians and cyclists are able to view the Canal and the maintained parkland that separates the paths from the adjacent drives. Views of the Rideau Canal bridge are unobstructed from the north, making it a prominent structure, requiring quality design.



Figure 23 - Pedestrians, cyclists and motorists converging at the Queensway Rideau Canal Bridge *(2018)*

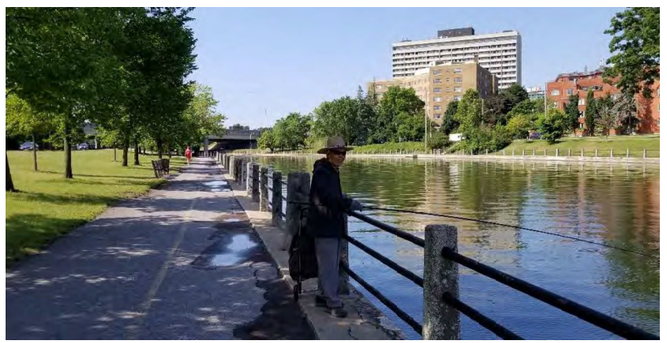


Figure 24 - East pathway showing railings, plantings and furniture along the Rideau Canal *(2018)*

0.5.4.4. VISUAL RELATIONSHIPS

All-season views from the surrounding parkways, pathways, Pretoria Bridge, as well as from the Canal waterway must all be considered in the proposed designs to ensure sensitive treatment and integration of new bridge elements.

The following are several significant views within the subject site setting that contribute to the Cultural Landscape of the area. For site context photos and additional information refer to **Section 0.2.6** above.

VIEWS WITHIN STUDY AREA

- **View to the north from Pretoria Bridge:** This panoramic view encompasses both sides of the Canal, its curving alignment in the background, and the Canal Queensway bridge in the middle ground forming a scenic visual composition;
- **View to the north from Hawthorne and Main with Town Hall and Gas Station:** This historic view of the intersection reveals the neighbourhood scale of buildings framing the view through the Main Street bridge to the north neighbourhood beyond;
- **View to the west from Hawthorne and Main:** This neighbourhood streetscape features a row of housing on the south side and the north side features mid-twentieth century plantings of ornamental, frequently non-native trees along the street, as part of the urban design initiative now known as Ballantyne Park;
- **View south from Queen Elizabeth Drive (QED):** The sequence of panoramic views along the QED encompasses the span of the Rideau Canal bridge, the Canal and the NCC designed parkland on the east side;
- **View south from Colonel By Drive (CBD):** The sequence of panoramic views along the CBD encompasses the span of the Rideau Canal bridge, the Canal and the NCC designed parkland on the west side;
- **View north from Metcalfe Queensway Bridge:** This view frames (and reveals the neighbourhood scale) the Canadian Museum of Nature.

Note: The *'NCC Rideau Canal Visual Assessment - Summary Report, 2009'* considers the **Queensway/Pretoria bridge** area as one of the lowest ranked locations with a score of 2.2 out of 5 (Conversely, the area of the Bank Street bridge is scored at 4.8 out of 5).

Since the Queensway Bridge area scored so poorly, it represents an opportunity to significantly improve the visual quality of a large portion of the Canal. Strategies could include:

1. Making the new Queensway Bridge a focal point and/or a more prominent node along the Canal (making the new bridge a positive infrastructure addition would result in a greater number of prominent, attractive views and many more focal views);
2. Shifting more emphasis to the Pretoria Bridge, make it a focal point (as opposed to hiding in the shadows of the existing Queensway Bridge);
3. Through excellent design, striking the right balance of 1 & 2 above (preferred option).

VIEWS OUT FROM STUDY AREA

- **View to the east from Hawthorne and Main:** This view reveals the neighbourhood scale of buildings framing the view, towards large residential buildings in the far background (Lees Avenue area).
- **View to the north from the Rideau Canal area:** This view reveals the Canal curvature, framed by the vegetated edge of the QED and CBD, and neighbouring low-mid rise residential buildings, with the Ottawa University campus in the far background.
- **View to the south from the Rideau Canal area:** This view also reveals the Canal curvature, framed by the vegetated edge of the QED and CBD and neighbouring low-mid rise residential buildings.



Figure 25 - View to the north from west pathway showing Canal curvature and Ottawa University campus in the background *(2018)*

0.5.4.5. LANDFORMS

The Queensway is elevated throughout the corridor. Berms for the ramps and the bridges slope up toward the Queensway and the land is generally flat in nature, except at the Canal where the lands slope down toward the multi-use paths and the Canal chain link fences separate the streets and private property from the Queensway berms and landscape.

0.5.4.6. VEGETATION

OPEN PARKLAND

The Metcalfe Street and Elgin Street Bridges are set in a developed commercial and multi-storey residential neighbourhood. The landscape of this area is

generally open and offers views to the elevated Queensway and the bermed grassed landscape with a few trees. Looking eastward, the area looks onto the Rideau Canal and the park-like landscapes of Queen Elizabeth Drive and Colonel By Drive.

SPECIMEN TREES

Several individual trees can be identified in the corridor near the Canal. These are generally in fair to good condition. Oaks highlight the northeast side of the Canal Bridge area.

Ballantyne Park along Hawthorne Avenue has many large specimen trees in fair to good condition.

Other Specimen trees along the corridor west of the Canal are in fair condition. They include maple, bur oak, crab apple and some newly planted trees near Elgin Street.

NATURALIZED WOODED AREAS

The corridor between Ballantyne Park and the Queensway and east of Main Street has naturalized and has much scrub vegetation with a small area of woodland containing mainly Manitoba maple and other deciduous trees. Some are large specimens. Small specimens of black walnut, easily confused with butternut, an endangered species, were identified at the southwest and northeast landscape areas at the bridge.

0.6. EVALUATION OF HERITAGE VALUE - ONTARIO REGULATION 9/06

Heritage value of a wide range of resources may be defined by using *Ont. Reg. 9/06* of the Ontario Heritage Act to determine heritage value or interest. There are 3 very broad categories to be considered:

- Design or Physical Value
- Historical or Associative Value
- Contextual Value

A property may satisfy only one category to have heritage value. However, for a planning evaluation it is useful to recognize that properties of heritage significance usually meet several of the criteria. These values once identified are usually summarized in a **Statement of Cultural Heritage Value** which adds the list of heritage attributes that embody the heritage values.

Ontario Regulation 9/06 Made Under the Ontario Heritage Act:

Criteria for Determining Cultural Heritage Value or Interest Criteria (1): The criteria set out in subsection (2) are prescribed for the purposes of clause 29 (1) (a) of the Act. (2) A property may be designated under section 29 of the Act if it meets one or more of the following criteria for determining whether it is of cultural heritage value or interest:
1. The property has design value or physical value because it: **i.** is a rare, unique, representative or early example of a style, type, expression, material or construction method; **ii.** displays a high degree of craftsmanship or artistic merit; or **iii.** demonstrates a high degree of technical or scientific achievement.

2. The property has historical value or associative value because it: **i.** has direct associations with a theme, event, belief, person, activity, organization or institution that is significant to a community; **ii.** yields, or has the potential to yield, information that contributes to an understanding of a community or culture; or **iii.** demonstrates or reflects the work or ideas of an architect, artist, builder, designer or theorist who is significant to a community.

3. The property has contextual value because it; **i.** is important in defining, maintaining or supporting the character of an area; **ii.** is physically, functionally, visually or historically linked to its surroundings; or **iii.** is a landmark.
Transition 2. This Regulation does not apply in respect of a property if notice of intention to designate it was given under subsection 29 (1.1) of the Act on or before January 24, 2006.

0.7. IDENTIFICATION OF HERITAGE ATTRIBUTES OF THE BRIDGE SITES/ADJACENCIES

Heritage Attributes of the bridge sites/adjacencies include:

- the existing configuration of the street grid;
- remnants of small scale 19th century residential properties on Hawthorne and Harvey Streets;
- neighbourhood commercial properties on Hawthorne particularly at the intersection of Main Street;
- the former town hall building as a neighbourhood landmark;
- the former gas station at the corner of Hawthorne & Main, and neighbouring building of modest scale as evidence of earlier commercial uses;
- the open lawn, selected specimen trees and historic plaque in Ballantyne Park;
- framed view to the north of the Canadian Museum of Nature at the Metcalfe Queensway bridge;
- views of the Rideau Canal bridge from the south from the Pretoria Lift bridge;
- views of the Rideau Canal bridge from the north from Queen Elizabeth Drive, Colonel By Drive, and the Rideau Canal Western and Eastern Pathways; and
- the maintained parkland with its design features extending between the Canal and the adjacent drives.

0.8. DESCRIPTION OF PROPOSED UNDERTAKING AND ALTERATIONS / INTERVENTIONS

0.8.1. TYPICAL RIGID FRAME BRIDGE REPLACEMENTS

0.8.1.1. ARCHITECTURAL & URBAN DESIGN

Design concepts have been considered through an extensive, comprehensive professional evaluation process discussed elsewhere in this report. For CSD criteria, the focus was on the prisms of the experience of driving, walking or cycling through the underpasses, and the immediate landscape and built fabric context, with major attention being paid to the actual look of the bridge from the cross-street below, the abutments and the circulation opportunities such as sidewalk and bike lane facilities. The emphasis has been placed upon providing for an enhanced pedestrian, cyclist, skater and boater experience, day and night and through four seasons.

Key elements for the rigid frame bridges include an articulated precast concrete façade (overhead span, pilasters and side walls), and an opened/expanded sidewalk area in front of the underpass at each of the 4 "quadrants" with a complementary low retaining wall structure that also provides seating if desired. The intention is to reduce the impact of the "enclosing" experience of moving through the underpass, to maintain visually light and bright surfaces and structures, and to allow for functional ease of using the underpasses by all modes of transit.

Lighting for the underpass structures will need to be significantly improved in order to provide safe and comfortable use at night. These concepts show a placeholder of basic lighting provided by MTO to meet public codes. However, it is strongly recommended that the City of Ottawa collaborate with MTO on lighting improvements, and with recent advancements in LED lighting, this should be able to be done effectively, in a visually appropriate and appealing manner, at reasonable cost and with minimal maintenance requirements.

0.8.1.2. LANDSCAPE DESIGN & RECOMMENDED PLANTING LIST

The soft landscaping strategy is to enhance the pedestrian space through the use of low maintenance, native plantings. A more organized planting scheme would be used directly adjacent to the pedestrian areas to provide a more comfortable and aesthetic space, while a more naturalized scheme with larger

native trees and shrubs can be used on the slopes to reduce the visual impact of the concrete abutments and reduce grass cutting maintenance. In general, **the planting will be native, hardy, and tolerant of the urban roadside conditions.**

Recommendations include:

- Improve health, safety and aesthetics through a pleasant street scape environment;
- Utilize pedestrian scale planting, fencing, and retaining/ seat walls at sidewalks;
- Set back large planting to increase useable and comfortable pedestrian space;
- Naturalized, large scale planting to be set back on slopes to increase vegetative cover and reduce grass cutting maintenance;
- Create impact through plant massing, arrangement, and colour for interest from the road, sidewalk, and the highway;
- Utilize a more architecturally appropriate fence style than the existing chain link to improve aesthetic while continuing to restrict access to highway;
- Incorporate a low retaining/ seat wall and/or benches to provide a place for pedestrians to rest/meet/wait before entering the underpass.

Recommended Plant List:

COMMON NAME	BOTANICAL NAME	SIZE (HxW)	SHAPE
Winter Interest/ Evergreens			
Red osier dogwood	Cornus sericea	2x2.5m	Loose, Broad, Spreading
White spruce	Picea glauca	25x6m	Pyramidal
Colorado spruce	Picea pungens	18x4.5m	Pyramidal
Jack pine	Pinus banksiana	20x8m	Pyramidal
Austrian pine	Pinus nigra	18x15m	Pyramidal
Spring Interest			
Shadblow serviceberry	Amalanchier canadensis	8x3m	Oval, Upright
Siberian pea shrub	Caragana arborescens	3x3m	Oval, Upright
Forsythia 'Lynwood Gold'	Forsythia x intermedia 'Lynwood Gold'	2x2m	Oval, Upright
Gold tide forsythia	Forsythia x 'Courtasol'	40cmx1m	Oval, Upright
Honey locust	Gleditsia triacanthos	17x13m	
Makamik crabapple	Malus 'Makamik'	6x4m	Loose, Spreading
Summer Interest			
Variegated reed grass	Calamgrostis arundinacea 'Overdam'	1m	Upright
Nugget ninebark	Physocarpus opulifolius 'Nugget'	2x2m	Dense, Bushy
Fall Interest			
Flame maple	Acer ginnala 'Flame'	7x7m	Rounded
Red sunset maple	Acer rubrum 'Franksred'	15x12m	Upright, Broadly Ovate
American larch	Larix laricina	26x10m	Pyramidal
White oak	Quercus alba	22x22m	Pyramidal
Red oak	Quercus rubra	16x15m	Rounded
Staghorn sumac	Rhus typhina	2.5x3m	Wide, Spreading



Red sunset maple *Acer rubrum 'Franskred'*



White spruce *Picea glauca*



American larch *Larix laricina*



Honey locust *Gleditsia triancanthos*



Shadblow serviceberry Amalanchier canadensis



Lynwood gold forsythia/ Forsythia x intermedia 'Lynwood Gold'



Staghorn sumac Rhus typhina



Red osier dogwood Cornus sericea



Variegated reed grass Calamagrostis arundinacea 'Overdam'



Low pre-cast unit retaining wall with armourstone



Low concrete retaining wall



Black steel Picket Fence (for areas with high pedestrian presence)



Black Vinyl Clad Chain Link Fence (for areas with low pedestrian presence)

0.8.1.3. PLAN, ELEVATIONS AND SECTION CONCEPTS

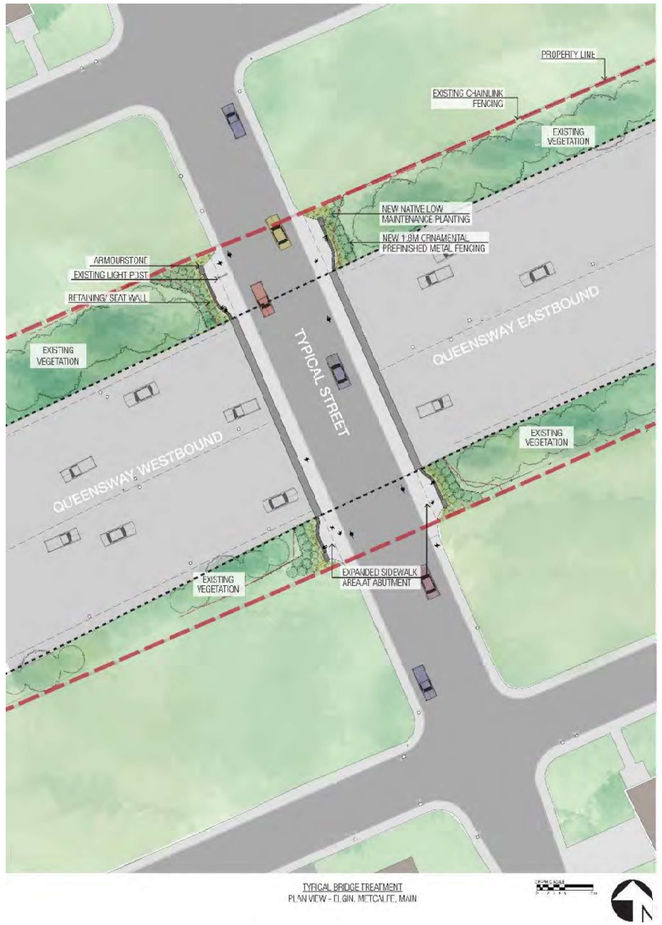
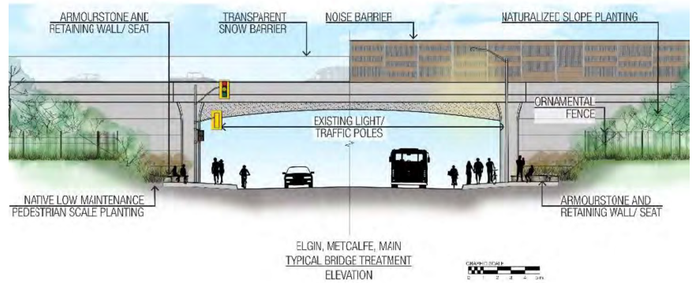


Figure 26 - Typical rigid frame bridge treatment - Plan *(Lashley + Associates)*

The typical concept arrangement:

- Expanded sidewalk area increases space and comfort for pedestrians;
- Gentle curving walls subtly and comfortably guide pedestrians through the underpass, while providing rest and meeting areas away from traffic, and providing ease of maintenance and snow-clearing;
- New ornamental fencing defines the space and restricts access to the highway in a more appealing way than the existing chain link;
- Existing traffic and light poles to remain as expanded sidewalk allows for comfortable movement around this structure;



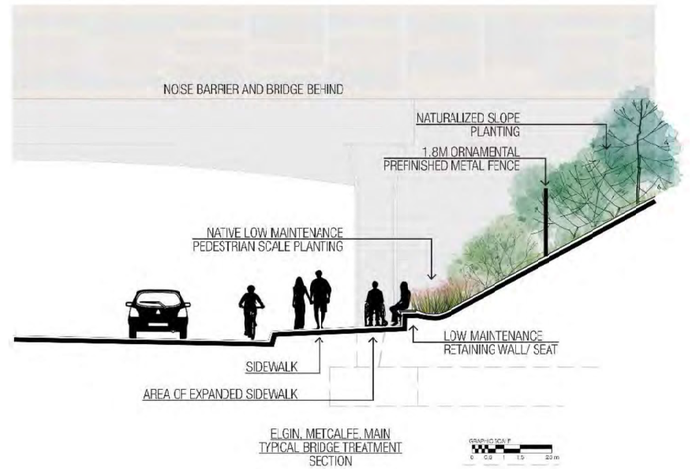


Figure 27 - Typical rigid frame bridge treatment - Elevations *(Lashley + Associates)*

- Native, low maintenance pedestrian scale planting to increase aesthetic of the space;
- Low retaining/ seat walls to provide a place for pedestrians and cyclists to rest or wait;
- Expanded sidewalk area to increase space and comfort for pedestrians;
- Ornamental fencing (to replace chain link) to create a more appealing pedestrian environment; and,
- Set back larger naturalized slope plantings to reduce grass cutting maintenance and reduce visual impact of concrete abutment walls.

0.8.1.4. 3D VIEWS - RIGID FRAME BRIDGE

A digital 3D model of the rigid frame bridge replacement sites (Metcalfe Street, Elgin Street, and Main Street) showing the existing immediate context, the

bridge concept 'architecture' and immediate surrounding landscape concept has been developed. The following images are "stills" from this model.

Note that curbs at intersection corners will be depressed (or ramped) to easily accommodate universal accessibility. For 3D views for the Rideau Canal area refer to section 0.8.2.4 below.



Figure 28 - Metcalfe Street underpass looking north (at Isabella St intersection) showing overall proposed design



Figure 29 - Metcalfe Street underpass looking south (at Catherine St)



Figure 30 - Bird's eye view showing Metcalfe Street underpass at Isabella St





Figure 31 - Proposed vs. Current (Google Earth) condition comparison - Metcalfe Street underpass at Isabella St intersection.



Figure 32 - Elgin Street underpass looking south east (at Catherine street) showing proposed concept design at northeast corner.



Figure 33 - Bird's eye view of Main Street underpass

0.8.1.5. MAIN STREET UNDERPASS - PROPOSED INTERVENTION VIEWS

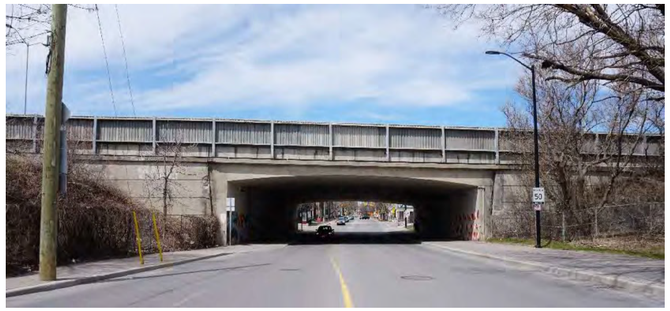


Figure 34 - Main Street underpass, current condition

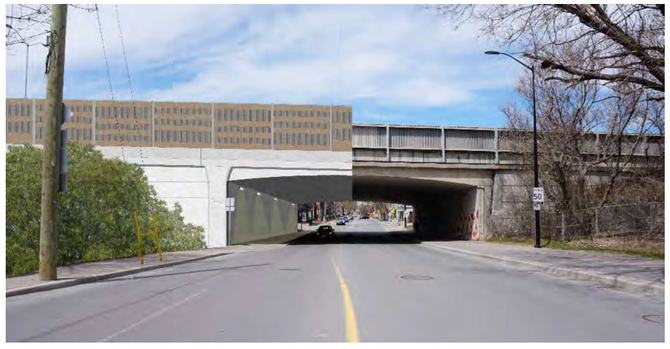


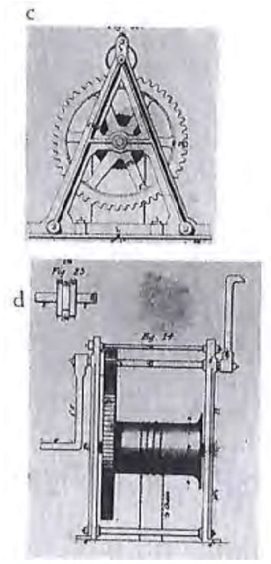
Figure 35 - Main Street underpass, showing before and after treatment



Figure 36 - Elevation of the Main Street treated bridge showing potential precast concrete facade elements and new lighting

0.8.2. RIDEAU CANAL BRIDGE REPLACEMENT TREATMENT

0.8.2.1. ARCHITECTURAL & URBAN DESIGN



Details of crank handles to control the Canal valves (Building the Rideau Canal: A Pictorial History, Robert W. Passfield)



Crank handle at Rideau Canal locks

GENERAL CONTEXT

The typical bridges at Metcalfe, Elgin and Main Streets each mark a crossing of specific interest. For example, Metcalfe is near and on axis with the Victoria Memorial Museum, now the Museum of Nature; Main is at the heart of the Old Ottawa East community; Elgin is at the foot of a key commercial street. However, the **Rideau Canal Crossing** is special for several reasons: there was, for many years, the railway crossing bridge here; the long length of the span; the nodal quality of the intersection of Elgin Street (curving around to the east, south of its project bridge), the east end of Catherine Street, Isabella/Hawthorne/Pretoria Bridge and the two canal Parkways, all of which meet/cross adjacent to this Highway 416/Queensway Crossing. It is also the literal intersection of three communities within the Capital: Centretown, the Glebe and Ottawa East. Add to that the fact that the Rideau Canal is both a National Historic Site of Canada and a UNESCO World Heritage Site, and it is obvious that this is a place of some significance. The Canal and its adjacent pathways and parkways are well-used by motorists, cyclists, pedestrians, boaters and skaters year-round and it is a unique and beloved corridor environment in the Capital.

From the highway motorist's perspective, the Queensway is a large transport facility, often filled with traffic, elevated as it moves through the City and drivers are isolated from the communities that they are moving through (for good reasons of speed and safety). There is a sameness quality that one would expect over long lengths of 400-level highways. Therefore, the highway user is quite visually unaware of when they are arriving or passing through the core of the Capital and certainly in the existing condition, totally unaware that they are passing over the nationally and globally important, historic Canal. Through sighting of exit signs and tall buildings, they can guess they are in or near the downtown, but there is no indication of crossing the Canal or any welcome-to-the-core-of-the-Capital type of portal. Local communities within the central area are not familiar or even really visible to the Highway 417 motorist.

THE PROPOSED NEW BRIDGE

The design of the proposed new Canal Crossing bridge is an opportunity to address, embrace, acknowledge and resolve these situations. It is a challenging task to be both a statement of quality design with visually strong iconic elements, and well-integrated with and not visually overwhelming to the surrounding communities. Compatible with, subordinate to and distinct from the historic place", is how the Standards and Guidelines for the Conservation of Historic Places in Canada put it (Standard 11).

For the highway user, the bridge needs all the necessary functional capability and capacity, while allowing for visual identifiers and visual connectors to the community below. For all the users under the bridge, it is important to make it interesting, as light, bright and safe as possible and to give it some meaning as a unique bridge crossing a significant waterway/corridor. This has been achieved through the following potential design considerations (to be discussed during detail design):

- a relatively light steel structure, increasing the overhead height and making for an interesting pattern of beams and voids that offer excellent lighting opportunities;
- gently arched/canted over the span, to make it visually graceful and to relate to other arched Canal crossings;
- picking up on this canted, irregular shape: the form of the bridge, through its potential facades design, also expresses these irregular yet orderly lines, through "faceting" the surface. This multi-faceted surface also expresses the diversity of the communities through which the Canal passes and the modern diversity of Canada's Capital. It is in perforated stainless steel, a durable yet visually light material that harmonizes with the steel span structure and with the notion of a light and bright place. It also provides further excellent soft-glow lighting opportunities, which could enhance its nighttime presence and improve the after-dark experience of the surrounding public realm.

Six different alternatives were developed for the Rideau Canal bridge replacement. The preferred option was determined after an extensive evaluation/consultation process and consists of a steel girder structure. The proposed piers have been relocated outside the canal, thus improving the navigability along this portion of the canal.

Potential key elements include a perforated open-able stainless steel façade with galvanized steel frames, potential improved public space area (under bridge and abutments) and vertical gateway elements at the 4 "quadrants" framing the proposed bridge. The emphasis has been placed upon providing for an enhanced motorist, pedestrian, skater, boater and cyclist experience, day and night and through four seasons.

Refer to Appendices **A.1** and **A.2** *(preliminary concept development packages)* for additional information and many contextual images of the bridge concept design. A video of the preliminary concept may be viewed at: https://vimeo.com/343470402

GATEWAY MARKERS

Greatly adding to the ability to see and understand the sense of being in a special place, is the potential "gateway" presence that reinforces a sense of having "arrived" at the Capital Core and/or the Rideau Canal. Gateways can act as virtual "doorways" into or out of a place; you know when you pass through it whether you are now "in" or "out" of somewhere. The pair of gateways (one east; one west of the canal) signify the Canal Crossing.

> *"In looking at options for gateway [design], the Committee felt that some kind of iconic element, either representational or abstract, at an appropriately large scale, should be used to demarcate a figurative gateway or "entrance". … It was noted that these features would be seen and used for orientation purposes as well and thematic integration into the City.*
>
> *"The TAC also noted that particularly in the downtown area, single span bridges serve as gateways between communities in the corridor. Extra attention must be paid to their detailed design and their ability to join bifurcated communities."*
>
> ***~ 'Context Sensitive Design Concepts for the Queensway - Highway 417' report by Stantec, April 2011.***

Though the design development of a specific iconic element was not part of this project, both the design team and NCC ACPDR felt strongly that any design developed for the Queensway Canal Bridge should be "aware" of its location and allow for the possible introduction and placement of some form of iconic element at the perceived "crossing point" of the National Historic Site Canada and World Heritage Site.

Commercial navigation c.1892, Lumber barge on Rideau Canal near Ottawa East (Library and Archives Canada)



Recreational navigation 2018 on Rideau Canal

For the design concept, the CSD team looked at inspiration and options for a "gateway" that would come to symbolize, for the Queensway Highway user, the Canal crossing and for the Parkway/pathway/Canal user, a significant node along the Canal. Urbanistically, these iconic elements would be noticeable within the district but not visually overpowering.

To gain inspiration, the CSD team studied the **history of the Rideau Canal and the evolution of its use over time**, to possibly find a way to give meaning to this layer of managed change over time. A great symbol of the Canal is the hand-winch cranks that to this day still power the operation of the locks. This is a unique feature and character-defining element that survives. However, in the context of the highway environment where the gateway elements must be placed, these would not be suitable due to available space and "readability" for motorists speeding by at 100 km/hour. On the other hand, a larger scale replica of this geared apparatus would be most suitable for the potential circular landscaped "island" within the potential Elgin-Canal Plaza, adjacent to the proposed new bridge. The circular gear piece further emphasizes the circular



East bank of Rideau Canal, note that banks were natural and not concrete - c.1898 (Library and Archives Canada)



East bank of the Rideau Canal from Pretoria Bridge (2018)

landscaped island, which is itself an homage to the traffic circle that used to be at this location. The current concept design simply has a placeholder at this location, which would also be suitable.

A very visible feature of the Canal in the 19th and into the early 20th century, but no longer, are the old **navigation markers that helped waterway travelers find their way** and avoid danger zones. These were usually founded upon a base of stones and were simple wood posts that towered up to various heights depending on the situation at the location and the local availability of tree size. In the early days, when there would be many miles between any settlement or village along the Canal, they were important parts of the Rideau Canal experience.

The contemporary gateway features are, in fact, a type of navigation marker. They help motorists understand that they are crossing the Canal, and help those in the area or on the Canal understand that they are approaching a place or node of significance, along their journey or travel through the area. It became obvious to the CSD team that the gateway elements should therefore represent a contemporary interpretation of the early markers.

The **gateway elements are an integral part** of the proposed replacement bridge design. The potential perforated stainless steel of the bridge façade extends along and turns up into the vertical markers. The same faceted or folded surface and concealed light steel framing are also employed. Should the LED lighting be desired on the bridge, placed behind the potential perforated steel skin to create a soft night glow, this would also be done for the gateway markers.

Further design development of these iconic elements should be coordinated with the MTO, the NCC, Parks Canada, the City of Ottawa and other stakeholders.

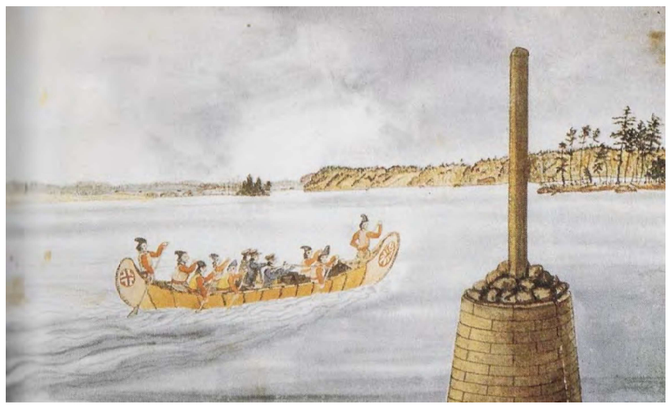


Figure 37 - Canoe en route to Bytown; Westport in the distance; post 1832 (Thomas Burrowes, watercolour, *Archives of Ontario)*

ENHANCED ADJACENT PUBLIC SPACE

A potential design concept was shown to the Municipal Technical Advisory Committee (City of Ottawa) and Federal Advisory Committee (NCC and Parks Canada) that modifies the sloped west bridge abutment (between Elgin Street and Queen Elizabeth Drive) to allow for the potential Elgin-Canal Plaza including:

- Programable open space with hard surfaces and urban furnishings
- Circular element to reflect the original traffic circles removed before the highway construction. A small stage and a featured sculpture can be included at this location
- Enhanced lighting and landscaping

Since the Rideau Canal (UNESCO heritage site), is one of the few public spaces that is used year-round, the potential new plaza could be an excellent addition to the canal pathway system. The potential Elgin-Canal Plaza would act as a "bridge" between several bustling neighbourhoods, including the Glebe, Ottawa East and Centretown, acting as a staging place, support space or public meeting area for events like Winterlude and the Great Glebe Garage Sale.

In addition, this section of the canal also sees many recreational runners going through on a daily basis and is a key point along the race routes of some of Ottawa's most popular, and tourist garnering, running events (Ottawa Race Weekend and the Army Run). The potential Elgin-Canal plaza would be a great venue for cheering/fans, as well as for services such as water stations, food, medical services and services for the runners and the public.

Other agencies, such as the NCC or City of Ottawa, would need to co-ordinate with MTO on this and likely fund it as well.

ELGIN-CANAL BIKEWAY

One of the additional enhancements to potential public space through retaining walls and re-greening landscape is at the north side of the Queensway, at the west side of the new bridge. It is the potential opening up of the width of the Catherine Street connector between Elgin Street and Queen Elizabeth Driveway. This could allow for greatly improving pedestrian and cycling opportunities in the downtown core by better connecting the busy commercial Elgin corridor (and its direct connection with the Central Business District and key institutional/tourist nodes such as the Museum of Nature, the Parliament Buildings, Confederation Park & Square and City Hall) to the cyclist and pedestrian-friendly NCC Canal parkways, through the potential newly-enhanced public space around the bridge and new Elgin-Canal Plaza.

LIGHTING

Lighting for under-bridge area structures will need to be significantly improved in order to provide safe and comfortable use at night. A collaboration between the City of Ottawa and MTO on lighting improvements is strongly recommended. The deep recesses between girders offer great opportunity to provide interesting, non-glare, indirect light that would enhance the visual perception of the bridge while providing a pleasing, bright and safe environment, day and night.

The potential concept design provides opportunities for LED lighting behind perforated stainless steel 'façade' panels for a nighttime "glow" and other illumination options. There are opportunities for community and/or professional competition participation in this and collaboration with the NCC, Parks Canada, City of Ottawa is necessary. It is envisioned that others (not MTO) would fund this and that it would be very low-maintenance. All lighting will be the subject of further design development, a future phase.

0.8.2.2. LANDSCAPE DESIGN & RECOMMENDED PLANTING LIST

The soft landscaping strategy at the canal bridge site is meant to provide an impactful and visually unique treatment to enhance the overall impression of this important bridge site as an 'entrance' to downtown Ottawa and as a good setting for the gateway featured at the east and west sides. The grove planting scheme (small number of species planted in a dense group) would be applied to the retained embankment and more formal tree planting would occur at pedestrian level. In general, **the planting will be native, hardy, and tolerant of the urban roadside conditions.**

Recommendations include:

- Improve health, safety and aesthetics through an enhanced street scape environment;
- Utilize pedestrian scale planting, retaining walls, and site furnishings at pedestrian plaza;
- Naturalized, large scale grove planting to be set back on slopes to increase vegetative cover and reduce grass cutting maintenance;
- Create impact through plant massing, arrangement, and colour for interest from the road, sidewalk, and the highway; and
- Incorporate tiered retaining walls to create an expanded, comfortable pedestrian space.

Recommended Plant List:

COMMON NAME	BOTANICAL NAME	SIZE (HxW)	SHAPE
Grove/ Embankment Planting			
Trembling aspen	Populus tremuloides	15x7m	Upright, Oval
White spruce	Picea glauca	25x6m	Pyramidal
Eastern red cedar	Juniperus virginiana	7x3m	Pyramidal
American larch	Larix laricina	26x10m	Pyramidal
Street Trees			
Honey locust	Gleditsia triacanthos	17x13m	Upright, Oval
Red sunset maple	Acer rubrum 'Franksred'	15x12m	Upright, Broadly Ovate
Spreading Shrubs/ Groundcover			
Gro-Low sumac	Rhus aromatica 'Gro-Low'	100x200cm	Low, Spreading
Grey owl juniper	Juniperus virginiana 'Grey Owl'	100x200cm	Low, Spreading
Ornamental Shrubs/ Grasses			
Feather reed grass	Calamagrostis acutiflora 'Karl Foerster'	1m	Upright
Prairie dropseed	Sporoblous heterolepis	60cm	Mounding

All of this landscaping is proposed as part of a potential concept for enhanced public realm. Collaboration with NCC, Parks Canada and City of Ottawa would be required. The of the construction of the replacement bridge is the best opportunity to address common goals of all these Authorities Having Jurisdiction. It is envisioned that funding would be by others (not MTO) and the final installation would be one of very low maintenance.



Trembling aspen
Populus tremuloides



Trembling aspen
Populus tremuloides



White spruce
Picea glauca



American larch
Larix laricina



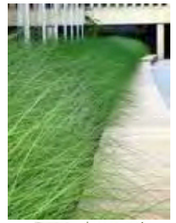
Red sunset maple
Acer rubrum 'Franskred'



Honey locust
Gleditsia triancanthos



Feather reed grass
Calamagrostis acutiflora 'Karl Foerster'



Prairie dropseed
Sporobolus heterolepis



Spreading juniper
Juniperus horizontalis



Gro-Low sumac
Rhus aromatica 'Gro-Low'

0.8.2.3. PLAN, ELEVATIONS AND SECTION CONCEPTS

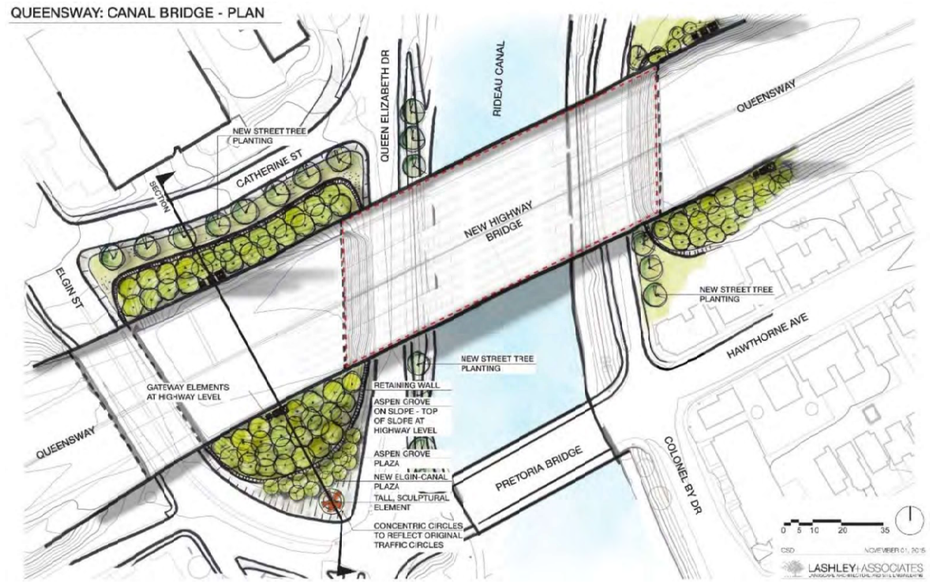




Figure 38 - Rideau Canal bridge treatment - Concept Landscape Plans *(Lashley + Associates)*



Roundabout at Pretoria bridge area c.1910 *(Department of Interior)*

Concept arrangement:

- Sloped embankment planted with a dense grove of poplar (aspen), spruce and larch to create a mass effect emulating an Eastern Ontario landscape;
- Tree mass on embankment will provide a visual foundation for the tall pier gateway feature structures;
- Naturalized grove is to extend into the pedestrian plaza in a more formalized planting arrangement surrounded by hardscape. This will help to soften the predominately car-dominant, hardscape environment that exists today;
- New tiered concrete retaining walls to retain embankment and provider larger, functional plaza space and enhance pedestrian realm;
- Expanded plaza space allows for small gatherings and a more comfortable through-space for pedestrians travelling across the site;
- Central concentric circle plaza feature is to represent historical roundabout islands and provide a space for public art/ sculpture/ visual landmark;
- Additional pedestrian scale lighting is to be considered to complement the plaza space and provide safe, effective lighting under the highway. Well planned lighting can improve safety, increase use of the site, and improve site aesthetics and visibility. This will make it a much more welcoming part of the community;
- Native, low maintenance pedestrian scale planting to increase aesthetic of the space;
- Expanded sidewalk area to increase space and comfort for pedestrians; and
- Set back, large, retained sloped planting to reduce grass cutting maintenance and increase useable pedestrian space.

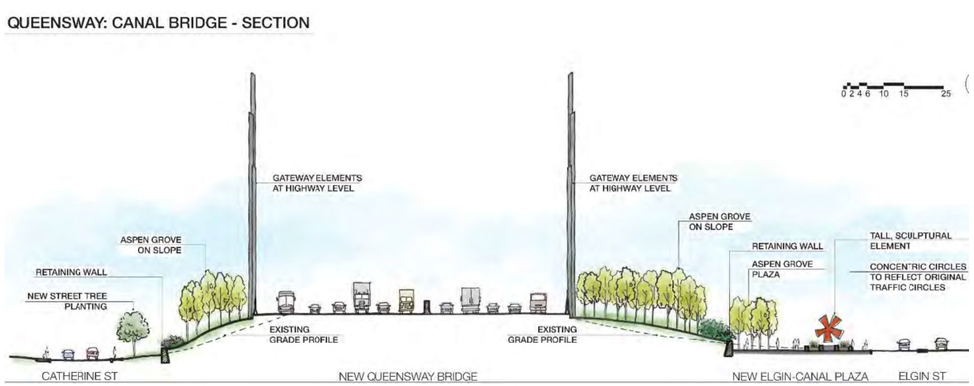


Figure 39 - Rideau Canal bridge treatment - overall section *(Lashley + Associates)*

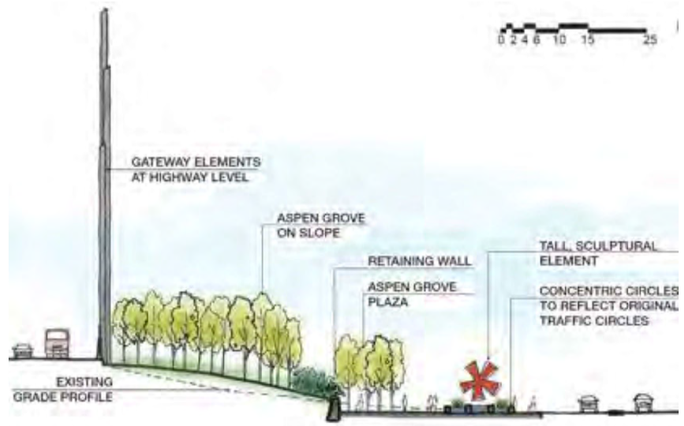


Figure 40 - Rideau Canal bridge treatment - detail section at Elgin-Canal Plaza *(Lashley + Associates)*

0.8.2.4. 3D VIEWS - RIDEAU CANAL BRIDGE

After extensive evaluations of options, a digital 3D model of the selected preferred option replacement bridge concept was created to illustrate the existing immediate context, the bridge concept 'architecture' and immediate surrounding landscape. The following images are "stills" from this model.



Figure 41 - View from southeast of the proposed Rideau Canal bridge replacement includes potential new surrounding landscape and vertical "gateway piers" that mark the Queensway's crossing of the Rideau Canal World Heritage Site



Figure 42 - Bird's eye view from southwest with potential Elgin-Canal Plaza



Figure 43 - Bird's eye view of potential Elgin-Canal plaza and green space



Figure 44 – From northeast, potential new heavily-planted embankment and potential wider pedestrian and cyclist path



Figure 45 - Bird's eye view looking west showing proposed new bridge and potential Elgin-Canal plaza on left



Figure 46 - View from Queen Elizabeth Drive at Pretoria Bridge looking east



Figure 47 - View along Rideau Canal looking east



Figure 48 - View from potential Elgin-Canal plaza looking north showing proposed new bridge

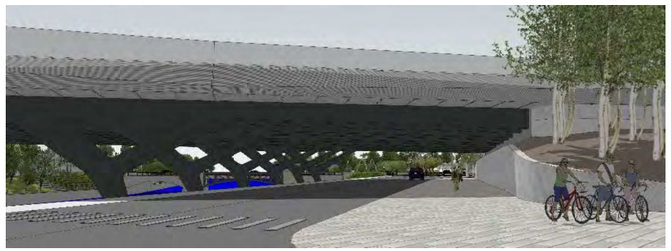


Figure 49 - View from potential new Elgin-Canal Bikeway, looking south under new bridge, showing expanded pedestrian/cycling area at embankment

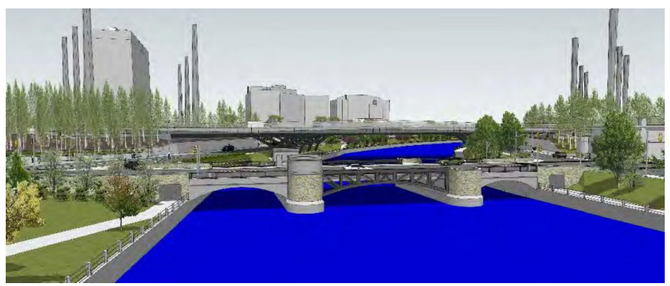


Figure 50 – Proposed bridge in in background, behind Pretoria Bridge



Figure 51 - View from west bike path looking NE - approaching new bridge



Figure 52 - View from west bike path looking east - under new bridge



Figure 53 - Bridge from approaching Queensway motorist, the gateway piers indicated the crossing of the Rideau Canal World Heritage Site as the motorist enters downtown Ottawa

0.8.2.5. KEY PROPOSED VS. CURRENT VIEWS



Figure 54 - Proposed vs. Current *(MTBA & Google Earth)* - Catherine St looking southeast at Queen Elizabeth Dr intersection



Figure 55 - Proposed vs. Current *(MTBA & Google Earth)* – The potential Elgin Canal Plaza provides better pedestrian and cycling connectivity and humanizes the "leftover" space surrounding the intersections of Isabella, Elgin and Hawthorne Streets near the Canal Queensway Bridge



Figure 56 - Proposed vs. Current *(MTBA and Google Earth)* - Queen Elizabeth Dr looking north at Hawthorne Ave intersection



Figure 57 - Proposed vs. Current *(MTBA and Google Earth)* - Colonel By Dr looking north at Hawthorne Ave intersection.

0.9. CONSIDERATION OF ALTERNATIVE AND MITIGATION STRATEGIES

Using a sophisticated multi-disciplinary evaluation system of all the various identified alternatives, the selected preferred alternative was based on consideration of many factors, including impacts on cultural heritage resources (refer to Appendix **A.3** for a list of the factors affecting Context Sensitive Design). Within the category of Cultural Heritage, several criteria were developed to assist in detailed evaluation of the alternatives and how they would likely impact the heritage resources.

Impacts ranged from minor or temporary to a permanent loss or long-term alteration. It was evaluated for both visual and physical impact. The preferred alternative was selected as having, on balance, the least overall impact on the identified heritage resources.

Further mitigation strategies for the heritage resources include:

- Full pre-intervention documentation of the resources;
- Reinstatement of heritage features that are damaged during construction;
- Professionally specified Heritage Fabric Protection at the Rideau Canal Bridge, during implementation, including monitoring;
- Interpretation signage and activities that share the stories of the historic context and their significance with the public.

Refer to Appendix **A.4** for the proposed construction staging/detours and mitigation strategies using creative screening at staging sites.

0.10. MEASUREMENT OF IMPACTS: BRIDGES, STAGING AREAS AND CONTEXT

During the analysis process, the 6 different intervention options were studied and evaluated. One option included the reuse of the existing bridge; therefore, the first step was to evaluate rehabilitation versus replacement. Engineering analysis determined that replacement was the preferred direction, leaving the consulting team with 5 replacement options to evaluate.

The detailed evaluation process included all the disciplines working in harmony with Heritage and CSD consultants. This process resulted in a preferred replacement option.

The following are examples of Heritage factors considered in the detailed evaluation system:

RIDEAU CANAL WHS/NHS

This sub-factor evaluates how the bridge alternatives fit in the designated cultural heritage landscape context in terms of their scale, form, and overall massing. It measures major design details such as the depth of deck, height above the water level and openness of the view below the bridge. Design details such as railings, barriers, lighting fixtures etc. are not part of the evaluation under this sub-factor since they will not be designed until a later phase and their design will be required to follow a low-impact, context-sensitive approach. The future design's visual composition and cohesion of the bridge as part of the landscape setting of this World Heritage Site/National Heritage Site will be further evaluated at that time.

Design alternatives that are more modest in scale, form and massing and as a result, have low impact on the WHS/NHS setting are preferred.

Alternatives that are the same or similar in scale and form with the existing bridge are preferred since the Rideau Canal WHS/NHS designations were established with this current bridge in place, as part of the collection of crossings that make up the designated place. Alternatives that comply with the Standards and Guidelines for the Conservation of Historic Places in Canada and that meet the definition of acceptable new design in terms of subordinate to, compatible with and distinguishable from the existing heritage setting are preferred.

Alternatives that overwhelm or dominate the visual composition of the cultural heritage landscape setting are the least preferred. The landscape context consists of the canal waterway, and the adjacent designed and maintained parkland and parkways. The bridge forms a part of this overall composition. The potential Canal-Elgin Plaza solution southwest of the Rideau Canal Bridge serves to enhance and interpret the heritage landscape of the NCC Parkway (Queen Elizabeth Driveway)

IMPACTS TO CULTURAL HERITAGE LANDSCAPE AND ADJACENT CONTEXT

Several indicators of Visual Character were considered in the impact evaluation for the Rideau Canal WHS area. These include unity/harmony, variety/complexity, spatial characteristics, maintenance/condition, adjacent scenery, infrastructure additions and meaning.

The visual character of this area is a result of the close proximity of the 2 bridges, allowing for a defined and framed view below the existing bridge of the canal as it curves to the east in the background. The various circulation routes of boaters/skaters, cyclists, pedestrians and parkway vehicles animate the view, adding variety and complexity in the middle ground. The foreground of the view is accented with parkland plantings and the new Canal-Elgin plaza that add to the scenic value of the view. Bridge design alternatives that provide for widening of this view below the bridge are preferred. Bridge design alternatives that have dominant structures above the deck are not considered in the evaluation under this sub-factor.

The following are some of the positive impacts of the preferred bridge replacement option:

- The gentle curve on the lower profile of the bridge adds to the scenic quality of the bridge design;
- The piers are located outside the Canal on the adjacent bank, which when combined with the variable depth of the bridge deck, increases/enhances the view below the bridge (and navigability at this Canal segment);
- This alternative has low impact on the cultural landscape setting because of its spacious view below the bridge, the broad curve of the lower edge of the bridge and the neutral colour of the perforated metal façade material;
- There is opportunity to backlight these bridge facades to provide a "soft glow" of light that would highlight the bridge within the long, natural setting, during evening hours;
- The addition of slender gateway pier markers at either end of the bridge do not overwhelm the view of the bridge and are appropriate new design elements that are compatible, somewhat subordinate and distinguishable from the heritage setting. One can see in the animated 3D contextual model, these tall slim simple elements do not visually dominate or overwhelm the setting and in fact are harmonicus with the many other slim and (not as) tall elements such as light posts. Surrounding highrise buildings mediate the visual scale of the gateways, as do the potential aspen groves at the base of each gateway marker grouping. The design of these pier elements is inspired by historic canal markers. Refer to **Section 0.8.2** above for more details.

Negative impacts/opportunities for improvement:

- The structure may potentially be more evident as the dark metal girders and the piers contrast against the light concrete deck underside – mitigation exploration would include using a dark deck underside;
- Adjacent vegetation and open parkland areas (i.e. Ballantyne Park), will be affected during the staging and construction/replacement bridge process – mitigation measures and reinstatement will be required;
- Sidewalks and pathways closures during the staging process will disrupt the normal flow of cyclist and pedestrians along the Canal area – mitigation measures will be required, to be fully arranged during future design development phase;
- Minor impact to the character-defining materials, assemblies and physical fabric of the Rideau Canal wall structure – mitigation measures include protection of the Canal structure during the construction process and contracting repairs as necessary.

0.11. IMPLEMENTATION AND MONITORING

HERITAGE FABRIC PROTECTION - RIDEAU CANAL

The construction planning for the Rideau Canal bridge will be required to include detailed protection methodologies, including drawings and specifications, for parkway and pathway landscapes and canal walls.

As well, monitoring of this protection will be required during the construction phase.

The planning for the conservation and interpretation of the cultural heritage resources that will be indirectly or directly impacted by the bridge replacement works will be undertaken in the subsequent phases of detailed design and implementation. These phases of work will have the participation of a consultant team (including Heritage Specialists), the MTO and the appropriate approval agencies.

It is important that the identification and evaluation of the heritage resources already undertaken, be considered in the detailed design work. It is at this stage in the planning when minor adjustments may be made that could further reduce the impacts on the heritage resources in the context of the bridge. During the construction phase, monitoring of works should ensure that the identified heritage resources are considered with appropriate setbacks and protective measures, such as for blasting vibration.

Reinstatement requirements should be included in the scope of work for implementation as part of the contract.

0.12. CONSERVATION RECOMMENDATIONS AND SUMMARY

The cultural heritage landscape setting of the bridges is made up of several components, including built heritage and landscape features, such as visual relationships and circulation patterns. Safeguarding, enhancing or reinstating these resources is recommended in the subsequent phase of planning, design development and implementation.

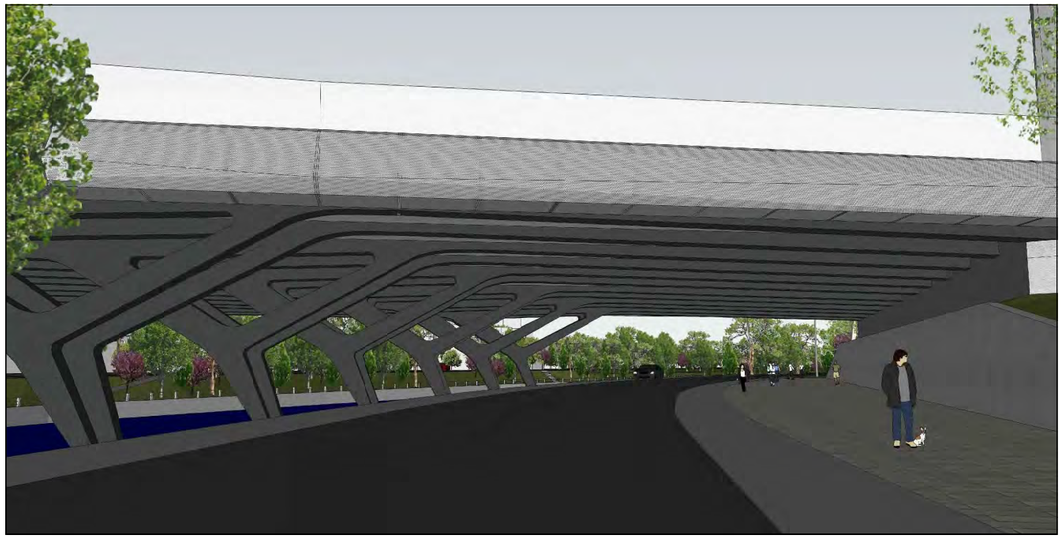
The conservation activities for the Rideau Canal crossing should continue to be guided by the best practices contained in the Standards and Guidelines for the Conservation of Historic Places in Canada as well as by the principles contained in the management plans for the designated World Heritage Site and National Historic Site of Canada, as they have for this Study.

This Study's evaluation process incorporated principles and best practices from the Standards and Guidelines as well as other recognized provincial and international standards. These have generally applied to the entire study area within its urban context. The concept design for the Rideau Canal Crossing proposed replacement bridge also abided by these principles and guidelines, in the consultant's view. The design addressed concerns heard directly from stakeholders (the public, the City, the NCC and Parks Canada) and was developed through collaboration between the Structural Engineer (principal bridge designer) and the Conservation Architect & Urbanist (assist with bridge design). It is strongly recommended that this canal bridge concept, when going forward into design development, continue to be guided by a collaboration of multiple discipline expertise and in particular the disciplines mentioned above.

A.1. RIDEAU CANAL BRIDGE REPLACEMENT: PRELIMINARY BRIDGE CONCEPT OPTION

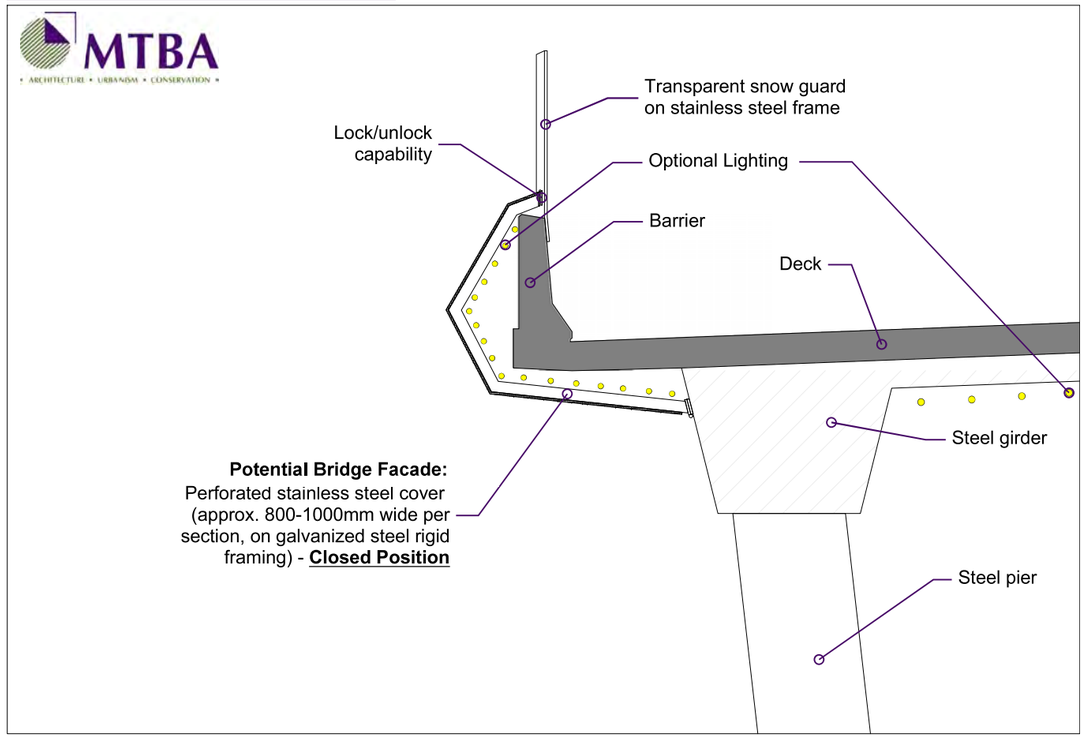
A | **Rideau Canal Bridge Replacement - Potential Bridge Concept Option** **Detail View**

MTBA
ARCHITECTURE • URBANISM • CONSERVATION

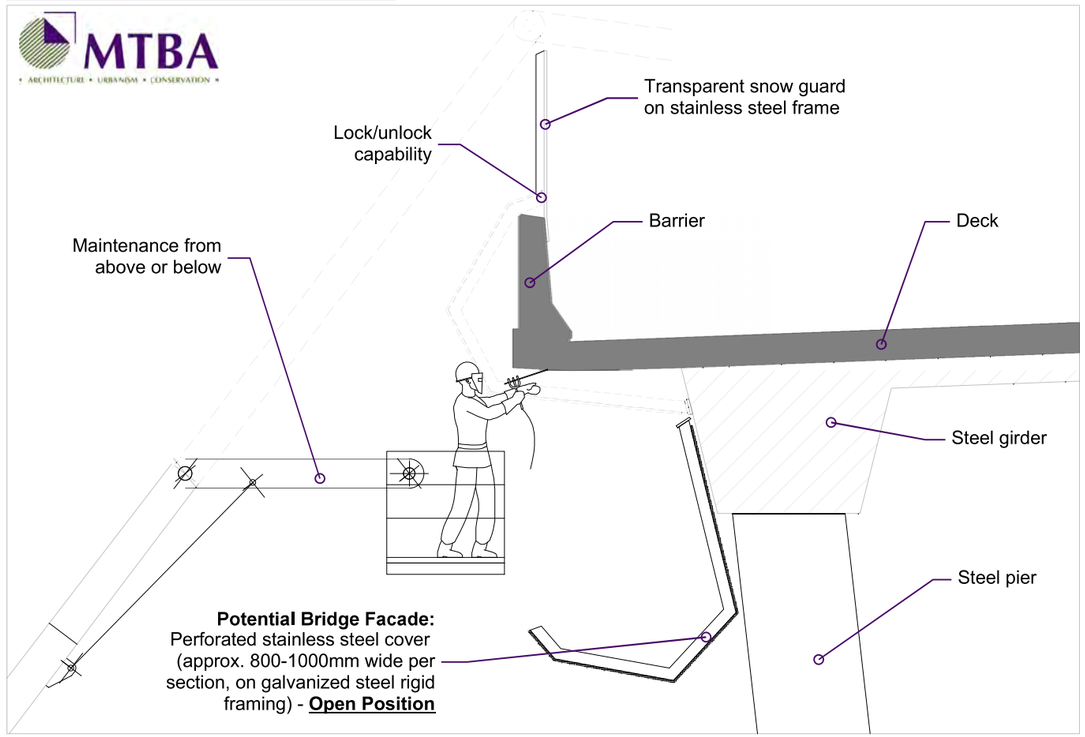


View looking north on Colonel By Drive, prior to driving under potential new bridge, made up of glass/lexan (snow guards), stainless steel (facade) and painted steel (girders and open double wishbone piers). Potential Widened pedestrian/cyclist area on left (East) side with potential new retaining wall.

A | Rideau Canal Bridge Replacement - Potential Bridge Concept Option

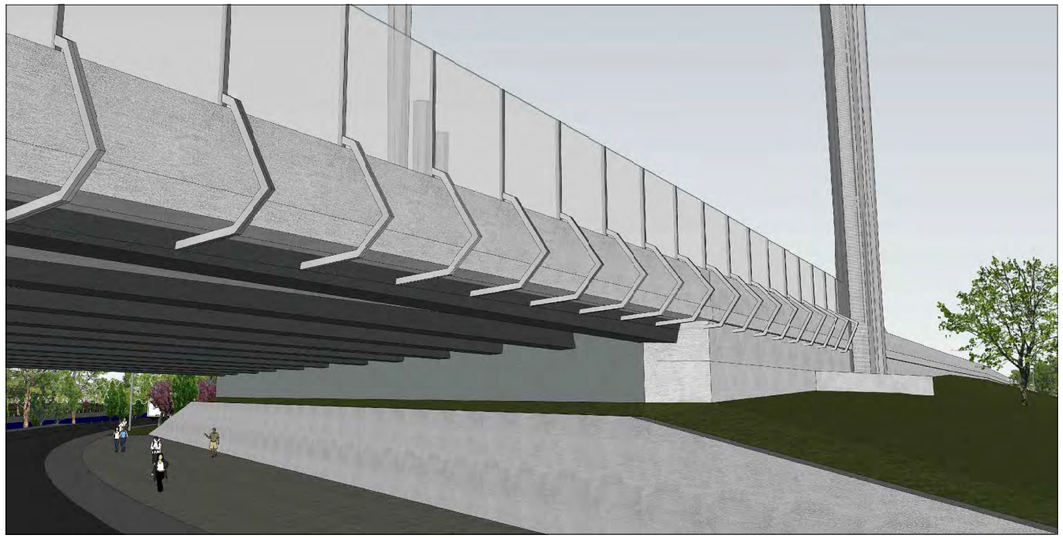


B | Rideau Canal Bridge Replacement - Potential Bridge Concept Option



C | Rideau Canal Bridge Replacement - Potential Bridge Concept Option

MTBA
ARCHITECTURE • URBANISM • CONSERVATION



Concept view showing potential steel framework for perforated open-able stainless steel bridge facade cover (not shown). The framework would align with stainless steel glazing mullions of the transparent splash protectors. Potential vertical gateway elements would have similar galvanized framing and perforated stainless steel skins to match bridge facade. Potential opportunities for LED lighting behind perforated stainless steel panels provide abilities for night time "glow" and other illumination options. Under-bridge LED lighting would be indirect, between girders, to emphasize the structure and provide a bright, non-glare, pleasing lighting environment.

D | Rideau Canal Bridge Replacement - Potential Bridge Concept Option

Similar Examples

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Fig. 1 - Choisy-le-roi Bridge, France



Fig. 2 - Choisy-le-roi Bridge, France



Fig. 3 - Ballet Center Pedestrian Skybridge, Houston





Fig. 4 - Ottawa Art Gallery, Ottawa

E | Rideau Canal Bridge Replacement - Potential Bridge Concept Option

Materials and Systems

MTBA
• ARCHITECTURE • URBANISM • CONSERVATION •

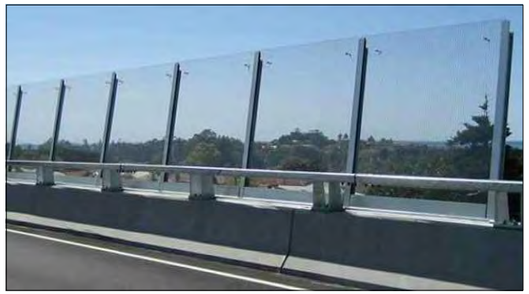


Fig. 1 - Transparent snow guard

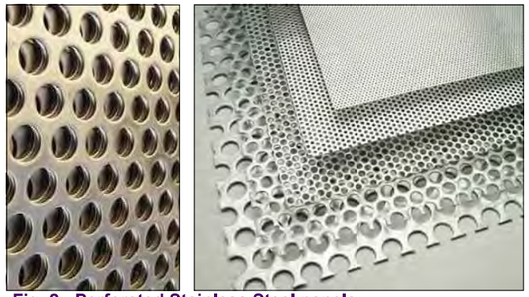


Fig. 2 - Perforated Stainless Steel panels

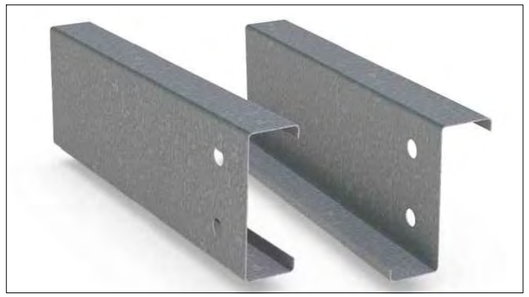
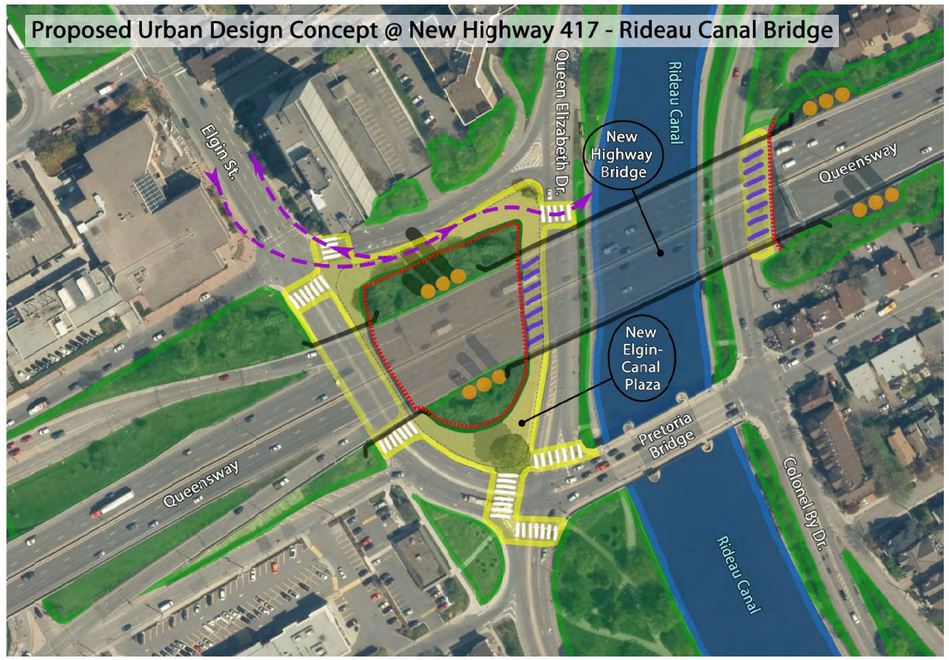


Fig. 3 - Galvanized metal frame



Fig. 4 - Bridge Gateway Element



A.2. RIDEAU CANAL BRIDGE REPLACEMENT: PRELIMINARY DESIGN - OPTIONAL CONCEPT DEVELOPMENT



1 Overall view looking northeast showing poten
bridge structural/architectural design.



2 View of bridge from approaching Queensway motorist.



3 Motorist view entering bridge on Queensway. The potential aspen groves on north and south sides provide a green setting and form a visual foundation for the two pairs of potential gateway markers. The design development of these simple gateway markers could possibly include “CANAL RIDEAU CANAL” and/or other Queensway identity graphics. This will be determined in Design Development.



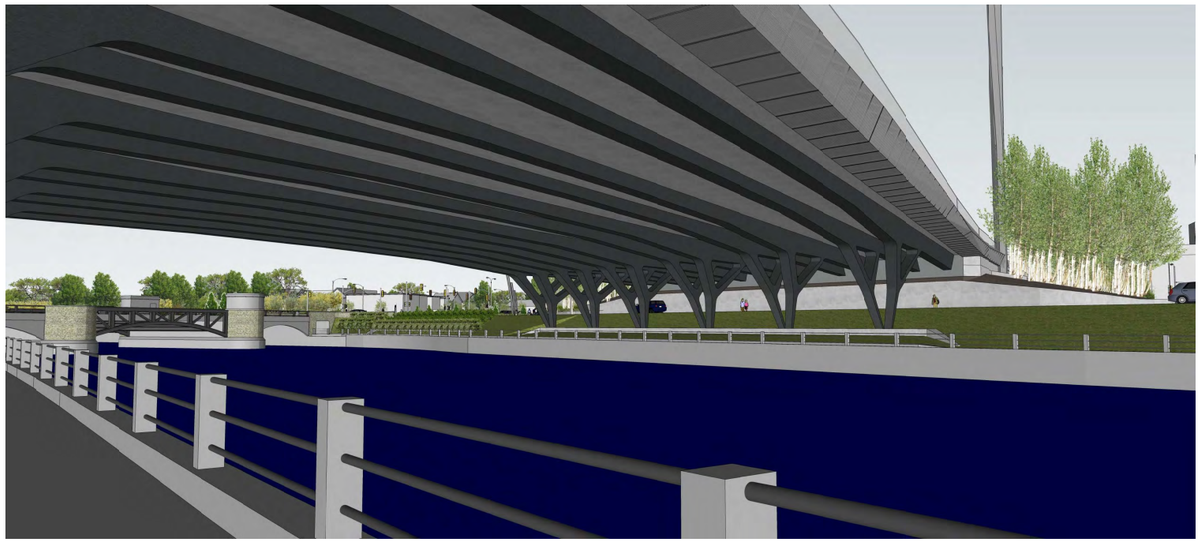
4 Bird’s eye view approaching new bridge from the north, along the Canal. The potential gateway markers are a memory-node of this location for Canal and Parkway users.

MTBA

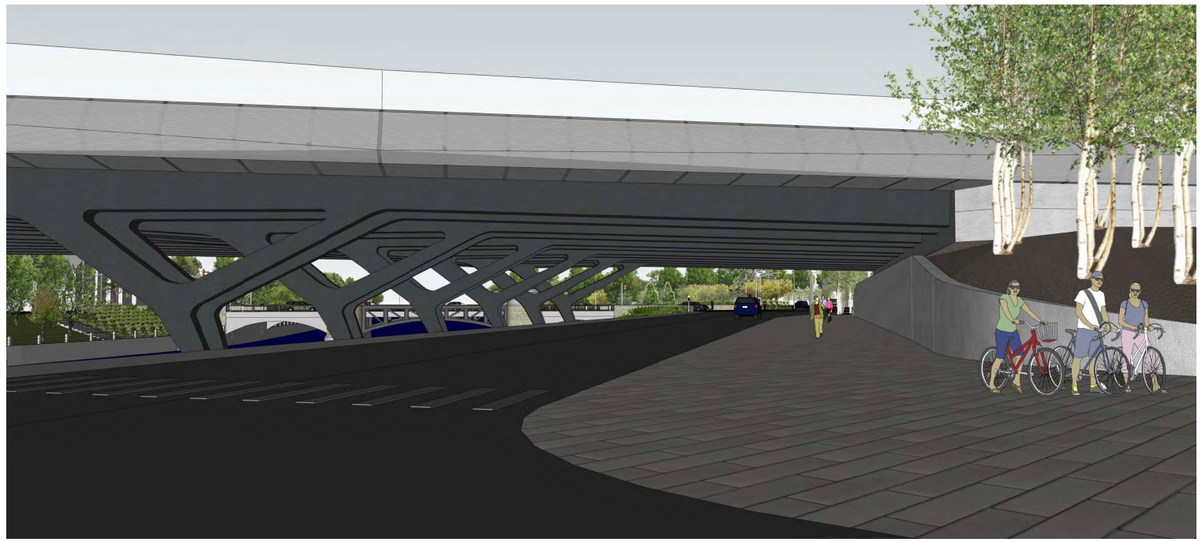


5 View from boater/skater moving south, about to pass under new bridge. Existing Pretoria Bridge is framed, in the distance. Note potential faceted steel façade, gateway markers, and piers now moved out of the Canal waters.

MTBA



6 View under bridge from east side path, showing new potential stainless steel and glass façade and steel girders on piers.



7 View from potential new Elgin-Canal Bikeway, looking south under new bridge, showing potential expanded pedestrian and cycling area at retained embankment.



8 View looking southeast from Elgin Street showing new Elgin bridge on right, new potential Elgin-Canal bikeway with green space in centre and new Queensway bridge on left, in distance.

MTBA



9 View looking southwest showing new potential Elgin-Canal bikeway with new potential aspen grove green space and new Queensway Rideau Canal Crossing on left. To the right are high-rise apartments and office buildings.

MTBA



10 Detail view of potential bridge concept design, looking east across Canal. Note the glass snow barriers would potentially have stainless steel framing at the same places as the façade joints.

MTBA



11 New potential “Elgin-Canal Plaza” with options for programing and/or other uses as well as green space and performance space. Looking northwest, the proposed Rideau Canal Crossing replacement bridge is at centre background and the Pretoria Bridge is on the right.

MTBA

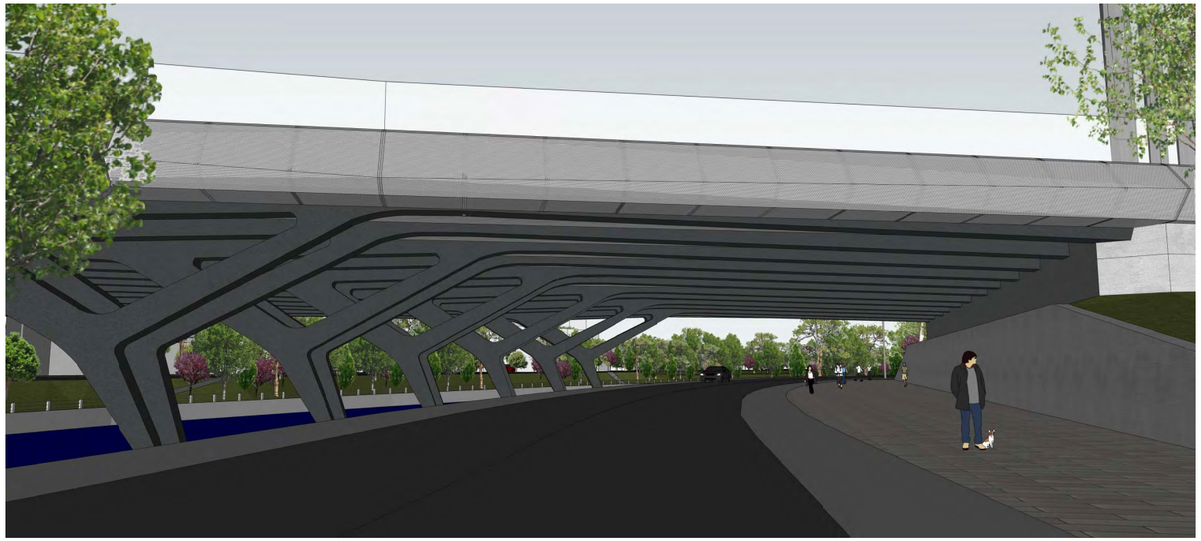


12 View looking north from Queen Elizabeth Driveway at Pretoria Bridge (on right) and new potential “Elgin-Canal Plaza” on left. Proposed new bridge and potential gateway markers are in the centre.



13 View looking northwest from Queen Elizabeth Driveway at Hawthorne Avenue and Colonel By Drive. Pretoria Bridge is on the left, then the aspen groves of the potential new Elgin-Canal Plaza and bikeway below on the lower left.

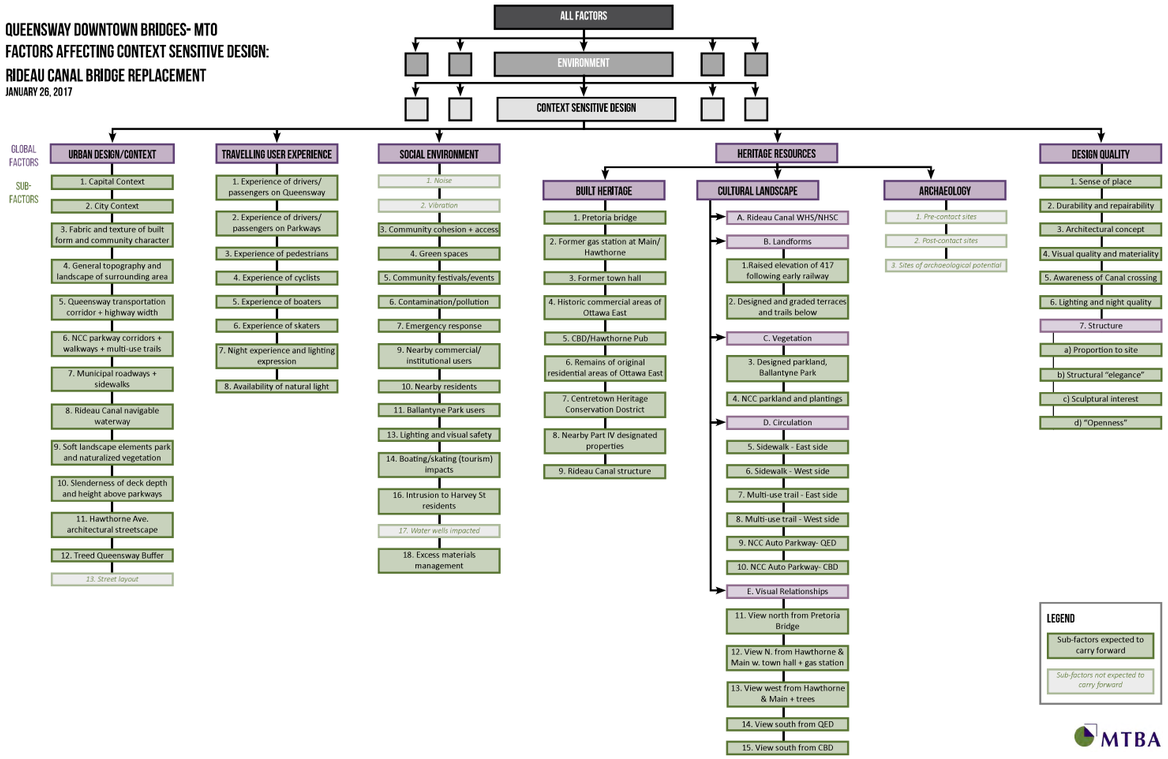
A.3. FACTORS AFFECTING CONTEXT SENSITIVE DESIGN: RIDEAU CANAL BRIDGE REPLACEMENT



14 View looking north on Colonel By Drive, prior to driving under new bridge.

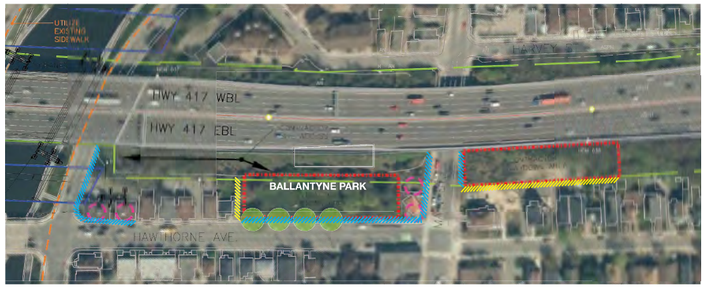
MTBA

A.4. CONSTRUCTION STAGING AND MITIGATION CREATIVE SCREENING



CONSTRUCTION SCREENING/ HOARDING - CONCEPTS

STAGING AREAS



LEGEND

- EXISTING MTO PROPERTY
- PROPERTY ACQUISITION
- PROPOSED BRIDGE CONSTRUCTION
- CONTRACTOR LAYDOWN AREA
- PROPOSED CREATIVE HOARDING
- PROPOSED LIVING SCREENS
- EXISTING TREES ALONG HAWTHORNE TO BE PROTECTED



EXISTING MURAL/ PUBLIC ART AT MAIN STREET HIGHWAY UNDERPASS

LIVING SCREENS



LIVE WILLOW FENCE PROVIDES: SOUND ABSORPTION, DETERS GRAFFITI, FILTERS POLLUTANTS, PROVIDES A NATURAL, GREEN SCREEN, AND ESTABLISHES QUICKLY. (*SOURCE: THELIVINGWALL.NET*)



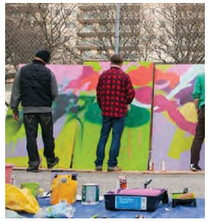
CREATIVE CONSTRUCTION HOARDING



INTERACTIVE - ALLOW USERS TO VIEW CONSTRUCTION ACTIVITIES SAFELY



INTERACTIVE - DISGUISES CONSTRUCTION ACTIVITIES COMPLETELY



PROVIDE OPPORTUNITY FOR MORE PUBLIC ART/ COMMUNITY INVOLVEMENT

LASHLEY + ASSOCIATES

SCREENING AT BALLANTYNE PARK

QUEENSWAY DOWNTOWN BRIDGES FROM METCALFE TO MAIN

L+A PROJECT NO.: 17675-1
JUNE 07, 2019

A.5. PRELIMINARY HERITAGE EVALUATIONS

QUEENSWAY BRIDGES – METCALFE STREET TO MAIN STREET

PRELIMINARY HERITAGE EVALUATION, BALLANTYNE PARK, OTTAWA

Revision 2 – February 12, 2018

CURRENT CONTEXT

Today Ballantyne Park is a small city park in Ottawa measuring approximately 100 m long by 30 m deep. It is bounded by Hawthorne Avenue to the south, the embankments of the Queensway to the north, a former gas station and another Main Street building to the east, and an antiques firm to the west at 27 Hawthorne Avenue.

HISTORY

PHYSICAL

Before it was Ballantyne Park, 54 Main Street was the home of James Ballantyne, a notable member of the community. At the request of his daughter, Mae, the home was demolished in 1929 and the land donated to the community which became Ballantyne Park.

ASSOCIATIVE

The park is associated with James Ballantyne (1835-1925), a successful businessman and Councillor in Ottawa East who was credited with transforming the community from a "motley collection of homes and businesses to a thriving successful village." Born in Scotland on May 9, 1835, James moved to Smiths Falls when he was 5 years old. Upon settling in Ottawa East in the 1870s: he established schools; became the first village reeve (later treasurer); was elected to Council; incorporated the Ottawa East Water Company; built the Town Hall; founded the Ottawa Camera Club; and helped establish the Ottawa Literary and Scientific Society (precursor to the Ottawa Field Naturalists Club). Additionally, in 1892, James Ballantyne discovered a 3000-5000 year old adze (woodworking tool) in the nearby Graham Brickyard 10 metres below the surface. The important artifact was donated to the Museum of History and is now part of the Kichi Sibi exhibit there. As a "visionary" photographer of "ordinary life" in the village of Ottawa East the "James Ballantyne Photographic Collection" is a significant contribution to Library and Archives Canada.

PRELIMINARY LIST OF CHARACTER-DEFINING ELEMENTS

- Specimen trees along Main Street
- Specimen trees from early residential development
- Relationship between the park and former town hall
- Relationship between the park and former rail line (now the Queensway)
- Three antique gas lanterns (to be verified)*
- Monument commemorating the works of James Ballantyne
- Maintained lawn and open green space

Please refer to the Stage 1 Archaeological Assessment, page 30 which identifies that although the Study Area (including Ballantyne Park) had general archaeological potential, this potential has been removed through significant disturbance during Highway 417 construction in the 1960s.

* The lanterns currently use light bulbs similar to what is typically used in streetlamps. More research is required to determine if they are retrofitted gas lanterns or simply made to look like antique gas lanterns. Reference to antique gas lanterns from Wikipedia, last edited 7 August 2016. https://en.wikipedia.org/wiki/Ballantyne_Park . (accessed February 12, 2018)

VALUES

PHYSICAL/DESIGN

Ballantyne Park is significant for its vegetation patterns, street trees, other specimen trees and antique street lamps, which contribute to the neighbourhood character of Hawthorne Avenue.

ASSOCIATIVE

Ballantyne Park is associated with James Ballantyne, the "Ballantyne adze" in the Museum of History, and the "James Ballantyne photographic collection" in Library and Archives Canada. James Ballantyne played an integral role in the development of the village of Ottawa East as a prominent businessman, reeve, County Councillor, and builder of Town Hall (across the street). A monument and plaque in his honour takes pride of place in the middle of the part.

CONTEXTUAL

Ballantyne Park is an important public space within Old Ottawa East which contributes to the neighbourhood character and contributes to the memory of the former village.

CONCLUSION

Ballantyne Park is likely worthy of designation under the Ontario Heritage Act, should the City choose to pursue same.

REFERENCES

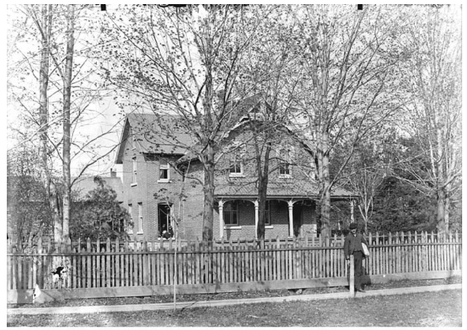
Stage 1 Archeological Assessment Preliminary Design and Environmental Assessment Rehabilitation/Replacement, Highway 417 Bridges from Metcalfe Street easterly to Main Street, September 7, 2017, Laura McRae, The Central Archaeology Group Inc, PIF No. P248-0291-2017.

Wallace, Rick, and Old Ottawa East Community Association. "James Ballantyne." A History of Ottawa East. 2004. http://history.ottawaeast.ca/HTML%20Documents/Notables/James%20Ballantyne.htm (accessed February 12, 2018)

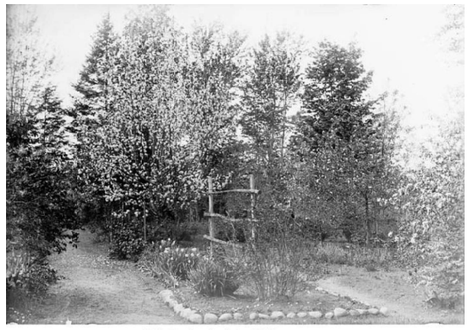
—. "The Ballantyne Adze." A History of Ottawa East. 2004. http://history.ottawaeast.ca/HTML%20Documents/History/Prehistoric%20Adze%20-%20Ballantyne.htm (accessed February 12, 2018)

—. "James Ballantyne Obituary." A History of Ottawa East. 2004. http://history.ottawaeast.ca/HTML%20Documents/Notables/Ballantyne%20Obituaries.htm#Isa (accessed February 12, 2018)

PHOTOS



PA131957



PA131958



PA133422



PA133670



2017 view looking west from near Main Street



2017 view looking east



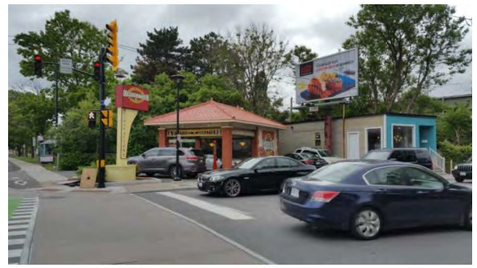
2017 view looking east; James Ballantyne monument in foreground



2017 view of James Ballantyne monument close-up



2017 view looking east, former gas station behind trees



2017 view from former town hall looking west to former gas station and Ballantyne Park beyond

QUEENSWAY BRIDGES – METCALFE STREET TO MAIN STREET

PRELIMINARY HERITAGE EVALUATION, 60 MAIN STREET, OTTAWA

April 11, 2018

CURRENT CONTEXT

60 Main Street is located on the northwest corner of Main Street and Hawthorne Avenue in Old Ottawa East. It houses Gordon and McGovern, a construction and renovation company. Although it is not designated under the Ontario Heritage Act or under the Municipal List, it is a significant neighbourhood landmark and a rare example of a 1930's gas station.

HISTORY

PHYSICAL

Given its proximity to the former home of James Ballantyne at 54 Main Street, it is likely that this property was part of the former Ballantyne estate. At the request of his daughter, the home was demolished in 1929 and the land donated to the community which became Ballantyne Park. The gas station was built in the 1930s and has subsequently been converted into an office for a construction company. 60 Main Street maintains the heritage character of the gas station through its scale, massing, carport, materials, and historic signage.

ASSOCIATIVE

Not investigated at this time.

CONTEXTUAL

The property's small lot is characteristic of the fine grain historic development and pedestrian scale of the former village of Ottawa East. It is situated on a prominent street corner across from the former Town Hall and beside Ballantyne Park.

PRELIMINARY LIST OF CHARACTER-DEFINING ELEMENTS

- Its placement on the site including its relationship to the street corner, to former Old Town Hall and to Ballantyne Park;
- overall form including the carport;
- massing;
- materials:
  - tile roof
  - brick and plaster siding
  - storefront windows;
- size, form and location of signage;
- gas pumps (more info required);
- its continuous operation as a commercial enterprise.

VALUES

PHYSICAL/DESIGN

The building's eclectic vernacular architectural style is a pleasant and unique composition of enclosed space, covered space and unique signage reflecting many layers of evolution. Its form, siting and architecture responded to the needs during the time of early automobile growth in the Capital.

ASSOCIATIVE

Not investigated at this time.

CONTEXTUAL

This former gas station is a unique neighbourhood landmark which responds well to its context. It is characteristic of the historic fine grained scale of the former village of Ottawa East.

CONCLUSION

60 Main Street is potentially worthy of designation as a Category 2 property in a Part V Heritage Conservation District under the Ontario Heritage Act, should the community choose to pursue the same.

PHOTOS



Gordon Construction (Former Gas Station). *BTE, 2017*



South Side of Gordon Construction. *MTBA, 2017.*

DRAFT

QUEENSWAY BRIDGES – METCALFE STREET TO MAIN STREET

PRELIMINARY HERITAGE EVALUATION, 221 ECHO DRIVE, OTTAWA

April 11, 2018

CURRENT CONTEXT

221 Echo Drive is located on the northeast corner of Colonel By Drive and Hawthorne Avenue in Old Ottawa East. It houses the Royal Oak Pub as well as residential apartments. Although it is not designated under the Ontario Heritage Act or under the Municipal List, it is a significant neighbourhood and Canal landmark. Also, the westernmost 3 m of the property falls within the 30 m buffer zone of the Rideau Canal's World Heritage Site Designation.

HISTORY

PHYSICAL

The building's eclectic vernacular architectural style is a pleasant and unique composition of historic and modern materials reflecting many layers of evolution. It was built sometime prior to 1912[1] with major additions circa 1928-1958 and again in the 1980s. The curved form of the 1980s addition is of similar size, scale and proportion as the piers of the nearby Pretoria Bridge.

ASSOCIATIVE

Not investigated at this time.

CONTEXTUAL

This pub is a unique neighbourhood landmark which responds well to its context. The property's small lot is characteristic of the fine grain historic development and pedestrian scale of the former village of Ottawa East.

It is situated on a prominent street corner overlooking the Rideau Canal World Heritage Site and picturesque Colonel By Drive and is highly visible by those passing along the Rideau Canal corridor from all modes of transportation. It acts as a "gateway" to Old Ottawa East for those travelling across the Pretoria Bridge or along the Rideau Canal corridor and contributes to the visual setting of the Canal. It provides an excellent vantage point from which people can experience and appreciate the Rideau Canal and Pretoria Lift Bridge.

PRELIMINARY LIST OF CHARACTER-DEFINING ELEMENTS

- Its visual and physical relationship to the Rideau Canal, Pretoria Bridge, Colonel By Drive, and Hawthorne Avenue;
- Its eclectic vernacular style of architecture reflecting many layers of history;
- Overall form, massing and placement of the building:
  - Small scale corresponding to fine grain development of Ottawa East;
  - Curved form 1980s addition of similar size and scale as the piers of the Pretoria Bridge;
  - Bow window on second floor;
- Materials including:
  - Local clay brick;
  - Glass block.

[1] Fire Insurance Plan 1912 vol 2: e010689446-v8. Library and Archives Canada. This region was not included on the earlier insurance maps

VALUES

PHYSICAL/DESIGN

The building's eclectic vernacular architectural style is a pleasant and unique composition of historic and modern materials reflecting many layers of evolution.

ASSOCIATIVE

Not investigated at this time.

CONTEXTUAL

This pub is a unique neighbourhood landmark which responds well to its context. It is characteristic of the historic fine grained scale of the former village of Ottawa East. Its prominent location by the Rideau Canal contributes to the urban setting of the Canal and provides opportunities for the public to appreciate the Canal and Pretoria Lift Bridge.

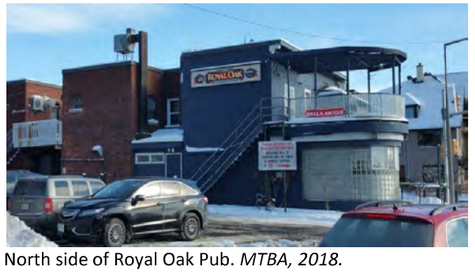
CONCLUSION

221 Echo Drive is potentially worthy of designation as a Category 2 property in a Part V Heritage Conservation District under the Ontario Heritage Act, should the community choose to pursue the same.

PHOTOS



Royal Oak Pub at corner of Colonel By Drive and Hawthorne Avenue. *MTBA, 2018.*



North side of Royal Oak Pub. *MTBA, 2018.*

DRAFT



Detail of glass block wall with Canal bridge in background. *Aran G. on Yelp.ca, 2010*


Royal Oak Pub from the Pretoria Bridge, *Google Streetview 2017*

QUEENSWAY BRIDGES – METCALFE STREET TO MAIN STREET

PRELIMINARY HERITAGE EVALUATION, PRETORIA BRIDGE, OTTAWA

April 11, 2018

CURRENT CONTEXT

The Pretoria Bridge crosses the Rideau Canal just south of the Queensway. It connects Pretoria Avenue in the Glebe and Elgin Street in Centretown with Hawthorne Avenue in Old Ottawa East. It is a significant node and crossing point on the Rideau Canal for vehicles travelling along the parkways (Queen Elizabeth Driveway and Colonel By Drive) and pedestrians, cyclists and others using the NCC multi-use trails. A lift bridge, it is also a significant passage for tall watercraft on the Canal.

HISTORY

PHYSICAL

The first bridge connecting Ottawa East and Elgin Street was a swing bridge built in 1890 from Argyle Avenue to Cedar Street (Harvey Street projected). This was replaced with the Pretoria Bridge in 1915-1917; a “direct lift” bridge connecting Pretoria Avenue with Hawthorne Street. The bridge deck was rebuilt in 1956 and the traffic approaches were altered in 1958, followed by more extensive repairs in 1963. In 1979-1981 the bridge was demolished and rebuilt with a widened deck while preserving the original design concept and stonework. (Wallace, 2004)

Designed by the Strauss Bascule Bridge Company of Chicago, the original Pretoria Bridge was a complex feat of engineering of its time and featured a central span which lifted 6m vertically to allow boats to pass below. The unique design concealed the counterweights and operating mechanism in the piers of the bridge below the floor to protect from weather and reduce maintenance. (Heritage Ottawa, 2017)

The heritage bridge was one of the only surviving examples in the world of a Strauss direct-lift type of vertical lift bridge. Joseph Strauss's typical direct-lift bridges used two counterweighted arms that rotated around a trunnion (or axle), each resting on a tower. The rotation of these arms pulled a truss span up vertically. The novelty of the design is it is a vertical lift bridge without cables. The Pretoria Avenue Bridge is unique however because Strauss apparently adapted the design to omit the towers, and instead hid the counterweights in the piers.

ASSOCIATIVE

The bridge is named after Pretoria Avenue which was a major street at the time. Pretoria Avenue was named in 1902 after the capital of South Africa, to commemorate the British victory in the Boer War. (Wallace, 2004)

The original Pretoria Bridge is part of a historic layer of movable bridge building along the Rideau Canal. Other significant bridges from this time period include: the La Salle Causeway Bridge in Kingston built in 1917 and also designed by the Strauss Bascule Bridge Company; and the Smiths Falls Bascule Bridge National Historic Site of Canada built in 1913 designed by the Scherzer Rolling Lift Bridge Company.

CONTEXTUAL

Although the Argyle Bridge met the needs of those commuting to downtown, it was not able to carry heavy loads. The Pretoria Bridge significantly impacted the development of Ottawa East as it connected the village to the City of

Ottawa via public transit. The Children's Garden site at the corner of Main and Clegg was originally used for the electric trolley to turn around. (Wallace, 2004)

Additionally, the Pretoria Bridge contributed to the industrial character of Old Ottawa South by accommodating truckloads of coal, wood and brick. It also enabled a garbage incinerator to be built, circa 1920, followed by a series of landfill sites around Lees Avenue and the Rideau Canal. (Wallace, 2004)

PRELIMINARY LIST OF CHARACTER-DEFINING ELEMENTS

- Overall form, massing and placement of the bridge;
- Its relationship to Rideau Canal, adjacent parkland, flowerbeds and parkways;
- Construction of the piers using Nepean sandstone ashlar masonry;
- The rounded-face of the piers, their crenellations, east side pedestrian lookouts, and west side turret/control rooms;
- Mechanical system to lift the centre span;
- Arched steel trusses in centre span;
- Concrete arches on side spans;
- Nepean sandstone walls and basket arches over NCC multi-use trails.

VALUES

PHYSICAL/DESIGN

Although it is a reconstruction, many character-defining elements and materials of the original Pretoria Bridge have been retained or re-created. The bridge is valued for its picturesque form, arched steel truss, crenellated sandstone piers, and the ability of the bridge to accommodate boat traffic by raising its centre span.

ASSOCIATIVE

The Pretoria Bridge is associated with the development of the village of Ottawa East.

The existing Pretoria Bridge is a 1981 recreation of the original, which was a rare example of a surviving direct-lift type of vertical lift bridge by the Strauss Bascule Bridge Company.

CONTEXTUAL

The Pretoria Bridge is an important connection between the communities of Centretown/Glebe and Old Ottawa East. It also contributes to the character of the Rideau Canal World Heritage Site.

CONCLUSION

The Pretoria Bridge is potentially worthy of designation under Part IV of the Ontario Heritage Act, should its owner choose to pursue same.

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PHOTOS



Pretoria Avenue Bridge, open and closed, ca. *Catalogue for The Strauss Bascule Bridge Company / Bascule and Direct Lift Bridges, 1920, Chicago U.S.A*



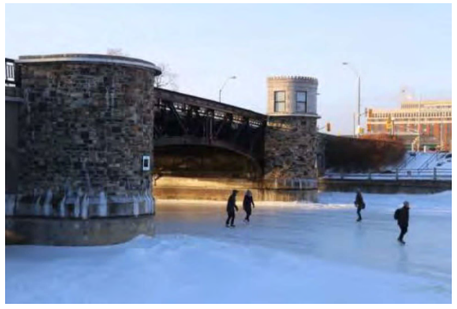
Historic view looking northeast across bridge from Pretoria Avenue and Queen Elizabeth Driveway. *PA034317*



Pretoria Avenue Bridge ca. 1979, prior to 1980 reconstruction. *Bedouin / History of Ottawa East / Creative Commons License*



After 1980 reconstruction. Note several minor differences from the original 1917 bridge but an overall very similar character. *BytownMuseum / Creative Commons License*

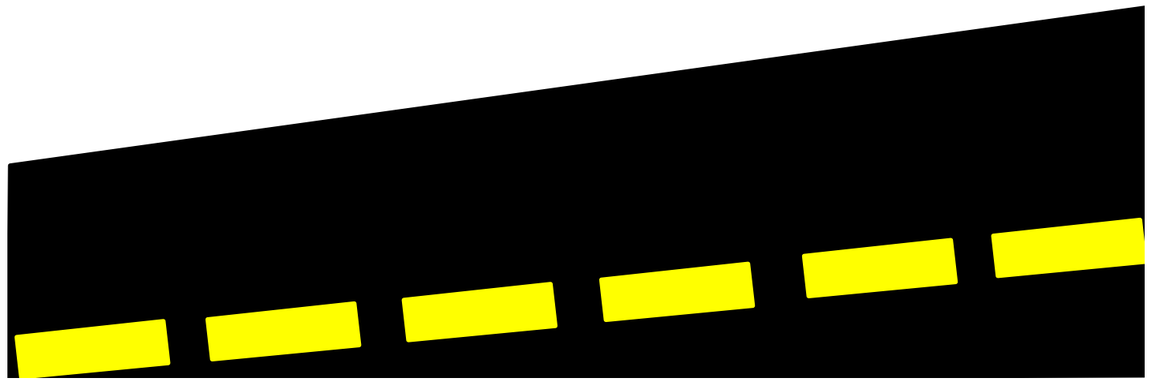


North side of Pretoria Bridge, winter 2018. *MTBA*



South side of the Pretoria Bridge, winter 2018. *MTBA*

Appendix C
Land Use Report



Ottawa Queensway Downtown Bridges Preliminary Design and Environmental Assessment Study for Rehabilitation/Replacement GWP 4170-13-00

Land Use Report





August 9, 2017

BT Eng Project 17-010

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Appendix A – City of Ottawa's Official Plan (OP) Schedules

1.0 Introduction

BT Engineering Inc. (BTE) was retained by the Ministry of Transportation (MTO) to prepare a Land Use Planning Report as part of the Class Environmental Assessment for Provincial Transportation Facilities (MTO Class EA) for the rehabilitation or replacement of 7 bridges at 4 locations on the Ottawa Queensway (Highway 417) from Metcalfe Street to Main Street. The land use review examined the current and future land uses in the Study Area.

2.0 Study Area

The area under study is located in Downtown Ottawa. The study area has been divided to allow for three levels of analysis. The "Broader Study Area" (BSA) includes the geographic area of the City where temporary short term offsite detour routes are being considered for freeway closures. **Figure 1** illustrates the BSA. The "Immediate Study Area" (ISA) will include a focus on the Queensway Corridor generally within or adjacent to the MTO right-of-way that will include the bridge alternatives. The "Local Study Areas" (LSAs) will focus on the bridges at each individual site location. The Immediate and Local Study Areas can be seen in **Figure 2**. Additional LSAs considered include potential staging areas for alternative construction staging sites, as shown in **Figure 3** and **Figure 4**.

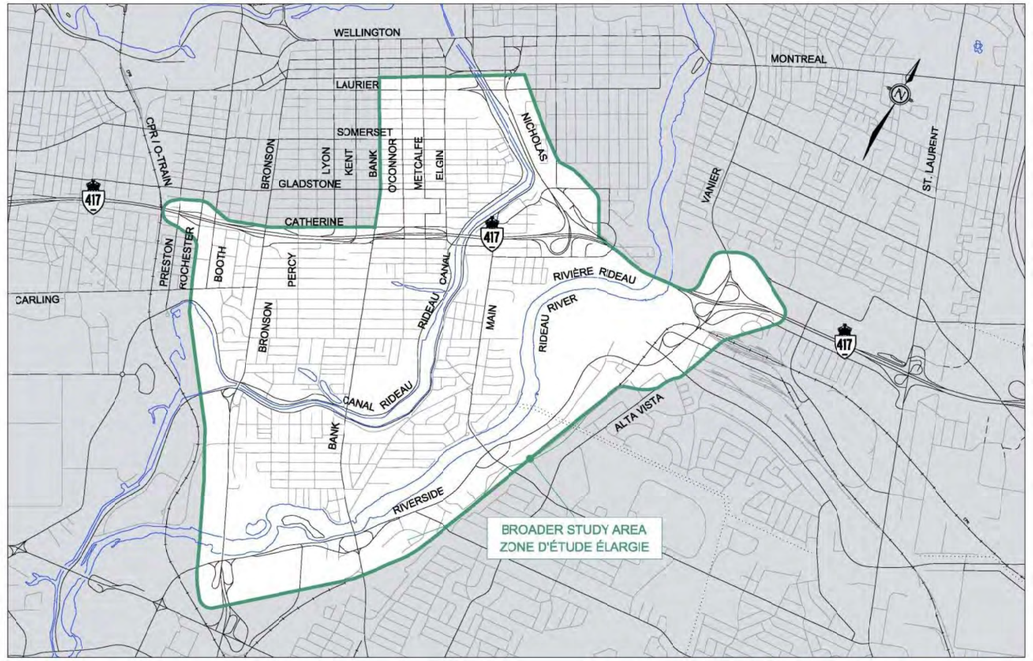

Figure 1: Broader Study Area

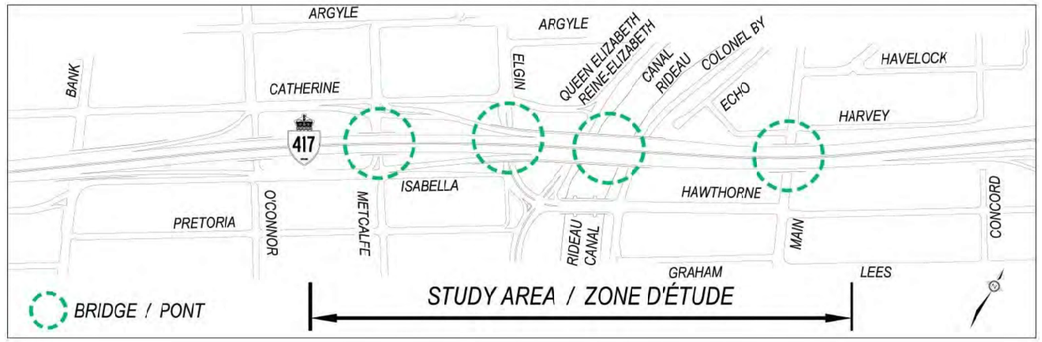

Figure 2: Study Area and Local Study Areas/Bridge Sites

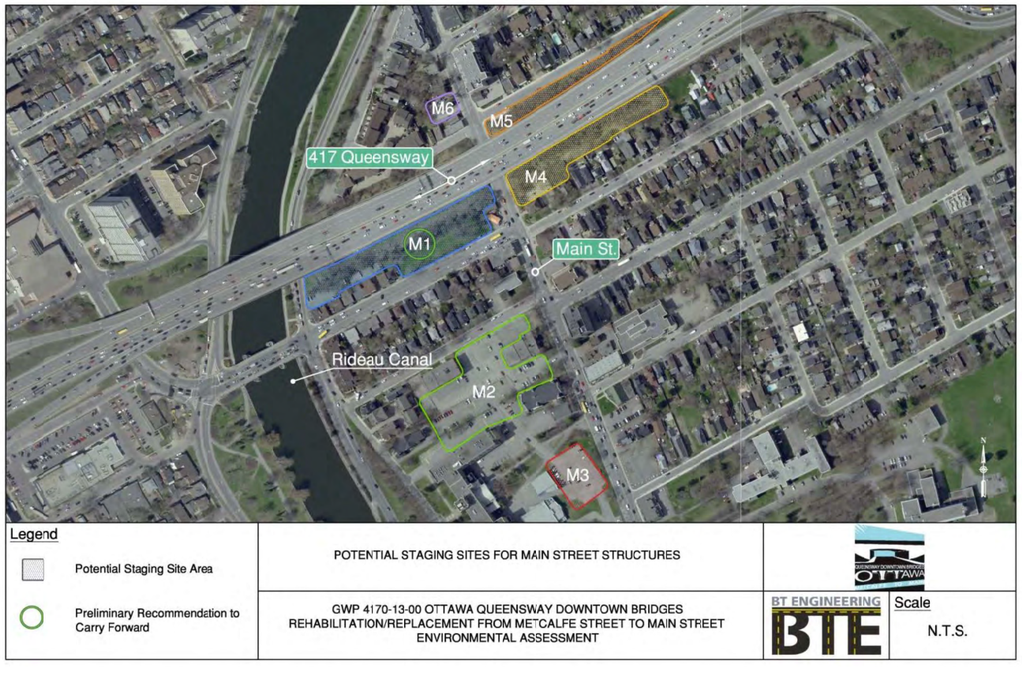

Figure 3: Potential Staging Sites for Main Street

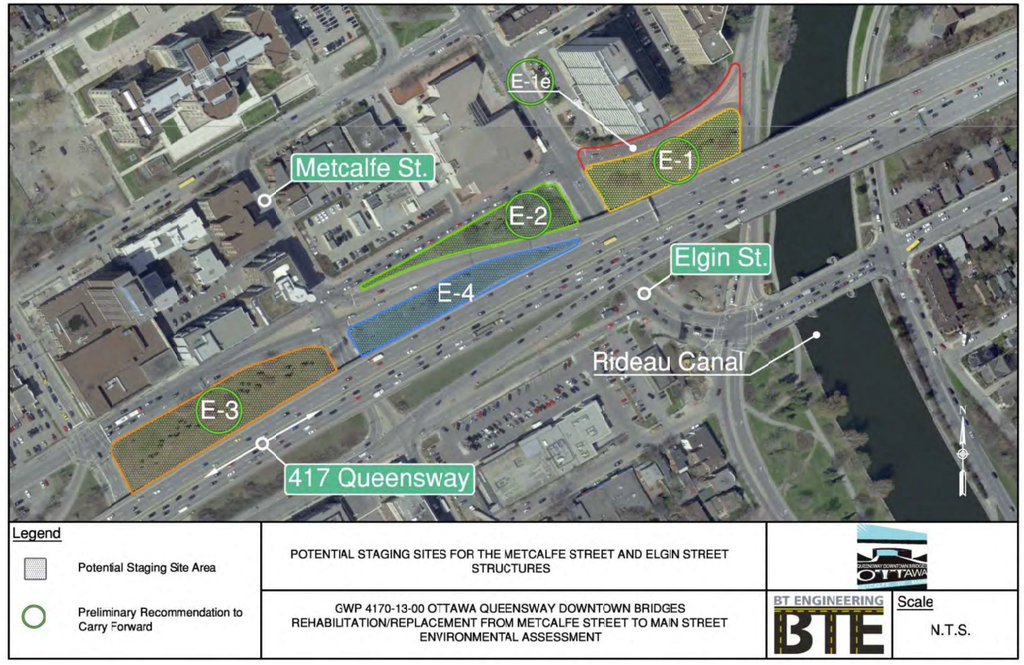

Figure 4: Potential Staging Sites for Metcalfe and Elgin Street

3.0 Land Uses in the BSA

3.1 City of Ottawa Official Plan

The Official Plan (OP) of the City of Ottawa has been prepared to better manage the growth and change that the City will experience over the next 20 years. The OP provides direction to several supporting plans that provide a greater level of detail on important issues than is practical in the Official Plan itself. These plans contain infrastructure program elements and strategies supportive of the policy directions contained in the OP.

The main supporting plans that have been or are being developed are:

- Transportation Master Plan – A comprehensive plan that sets out the City's approach to managing and meeting the demand for transportation facilities, including walking, cycling, transit and roads;
- Infrastructure Master Plan – An integrated planning and system management document which coordinates the City's efforts in meeting the demand for public water, wastewater, and stormwater services;
- Greenspace Master Plan – Characterizes and evaluates all components of greenspace in the City as a basis for a range of policies related to protection, acquisition and management.

Throughout the OP are references to studies and plans that will enhance existing land-use policies. OP policies or land-use schedules may be needed to implement any of these plans. There are 14 schedules for policies or schedules, as per the OP, as follow:

- Schedule A – Rural Policy Plan
- Schedule B – Urban Policy Plan
- Schedule C – Primary Urban Cycling Network
- Schedule D – Rapid Transit Network
- Schedule E – Urban Road Network
- Schedule F – Central Area/Inner City Road Network
- Schedule G – Rural Road Network
- Schedule H – Road Network – Select Villages
- Schedule I – Multi-Use Pathways and Scenic/Entry Routes – Urban
- Schedule J – Cycling, Multi-Use Pathways and Scenic/Entry Routes – Rural
- Schedule K – Environmental Constraints
- Schedule L1 – Natural Heritage System Overlay (East)
- Schedule L2 – Natural Heritage System Overlay (South)
- Schedule L3 – Natural Heritage System Overlay (West)

3.1.1 Land Use Designations

The lands within the BSA are designated as General Urban Area, Central Area, Major Open Space, Mixed Use Centre, Urban Natural Features, Employment and Traditional Mainstreet by the City of Ottawa's OP Schedule B, Urban Policy Plan, as shown in **Figure 5**. The full Schedule B can be found in Appendix A.

The following is a brief description of the land use designations as found in the OP; refer to the OP for full description and details on permitted uses and policies:

- **General Urban Area:** This designation permits all types and densities of housing, as well as employment, retail uses, service, industrial, cultural, leisure, greenspace, entertainment and institutional uses.
- **Central Area:** This area is recognized as the economic and cultural heart of the City and the symbolic heart of the nation. This designation establishes a vision and detailed policies for the desired future of the Central Area as the focus of government, tourism, business, retail, housing, major community facilities, entertainment and cultural activities.
- **Major Open Space:** This designation is to protect the larger open spaces in Ottawa that are to be generally available for public use and enjoyment. These areas include open space corridors along the Ottawa and Rideau Rivers and the Rideau Canal, parkway corridors and corridors reserved for rapid-transit and major roads. Most Major Open Spaces are already in public ownership. The Rideau River and Canal are national historic sites. Major Open Spaces are a key component of the Greenspace Network, which contributes to the quality of life in neighbouring communities as well as to the overall integrity of the natural environment.

- **Mixed Use Centre:** These areas are strategically located with respect to the transportation system and accessible by transit, walking, cycling and automobile. The designation permits transit-supportive land uses, such as offices, secondary and post-secondary schools, hotels, hospitals, large institutional buildings, community recreation and leisure centres, daycare centres, retail uses, entertainment uses, services (such as restaurants), high- and medium-density residential uses and mixed-use development.
- **Urban Natural Features:** This designation is to preserve natural features that are currently managed for conservation or passive leisure uses. These features provide a valuable contribution to biodiversity and wildlife habitat in the urban area and are enjoyed by residents. Urban Natural Features are natural landscapes and may include woodlands, wetlands, watercourses and ravines. These features may occur on City, federal, provincial and privately-owned lands.
- **Employment:** This designation provides for the concentration of at least 2,000 jobs at a range of densities. They are distributed throughout the urban area to support the potential to achieve a balance of housing and jobs. These areas must have access to designated truck routes.
- **Traditional Mainstreet:** These areas are planned as compact, mixed-use, pedestrian-oriented streets that provide for access by foot, cycle, transit and automobile.

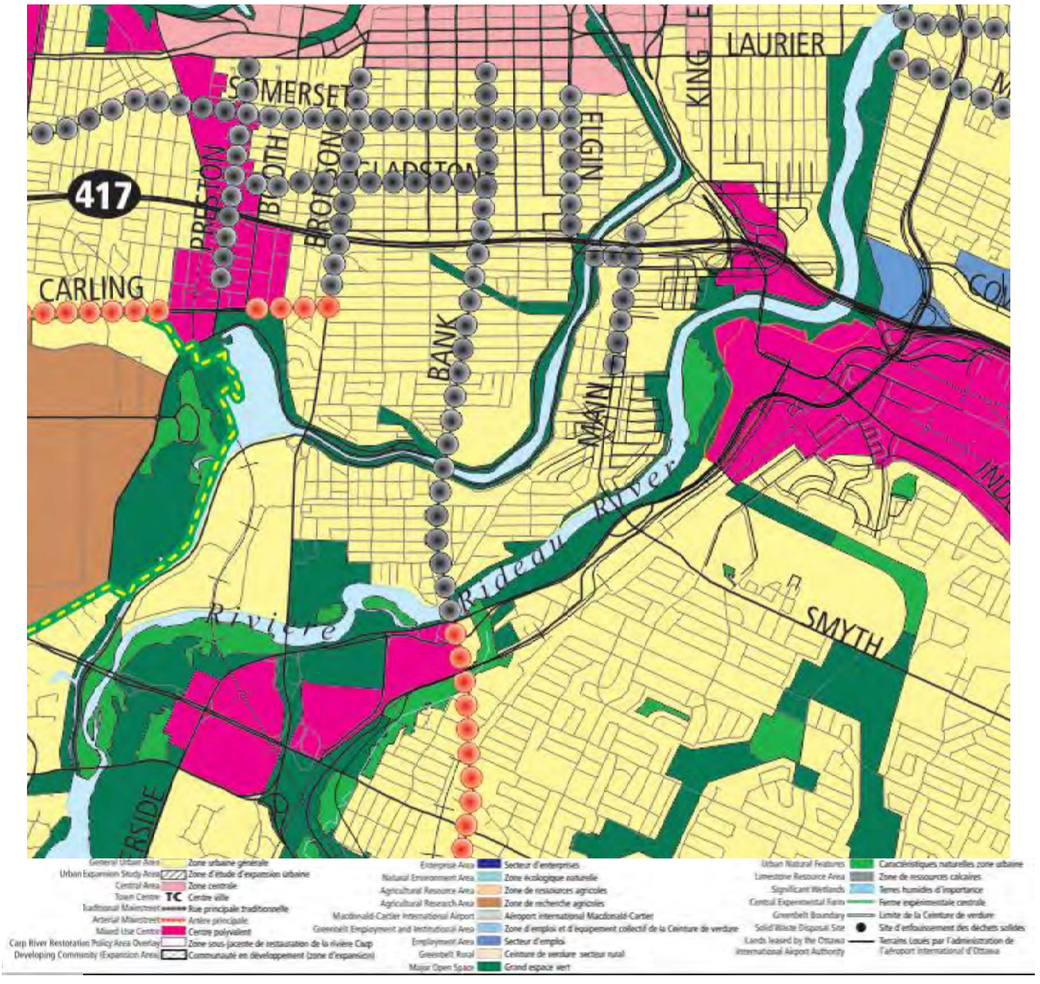

Figure 5: City of Ottawa Official Plan Schedule B: Urban Policy Plan in vicinity of BSA

3.1.2 Road Networks

The road network within the BSA are a mix of provincial Highway, federally owned roads, and municipal owned roads (including Major Collector, Arterial and Collector roads) as per the City of Ottawa's OP, as shown in **Figure 6** and **Figure 7**. The full Schedules E and F can be found in **Appendix A**.

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Figure 6: City of Ottawa Official Plan Schedule E: Urban Road Network in vicinity of BSA



Figure 7: City of Ottawa Official Plan Schedule F: Central Area/Inner City Road Network in vicinity of BSA

3.1.3 Environmental/Natural Features

The BSA is highly urbanized and do not contain significant environmental constraints within the OP, as shown in **Figure 8** and **Figure 9**. Based on Schedules K and L1, the only noted feature is the presence of floodplains and natural heritage features in the vicinity of the Rideau River and Dow's Lake, at the southern and eastern limits of the BSA. Note: no environmentally sensitive areas, areas of natural or scientific interest, provincially significant wetlands or wetland habitat were identified for the LSAs. The full Schedules K and L1 can be found in **Appendix A**.

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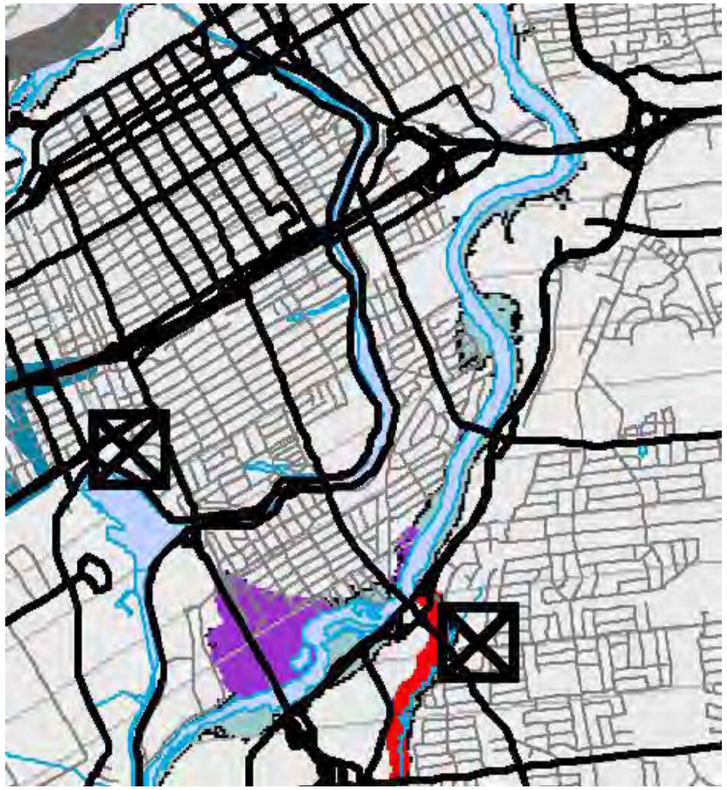

Figure 8: City of Ottawa Official Plan Schedule K: Environmental Constraints in vicinity of BSA



Figure 9: City of Ottawa Official Plan Schedule L1: Natural Heritage System Overlay (East) in vicinity of BSA

3.2 BSA Existing Land Use

Land uses found to apply within the BSA are described in the following sections.

3.2.1 Residential

There are many residential areas within the BSA. Neighbourhoods within the BSA are defined by the community associations or historical delineations, the main neighbourhoods (and their representative associations) are:

- Action Sandy Hill/Action Cote-de-Sable
- Lowertown Community Association
- Centretown Citizens' Community Association
- Dalhousie Community Association
- Dow's Lake Residents' Association
- Glebe Annex Community Association
- Glebe Community Association

- (Old) Ottawa East Community Association
- Old Ottawa South Community Association
- Rideau River Residence Association

Municipal wards are defined by the City of Ottawa political boundaries. Ward boundaries in the vicinity of the BSA are shown in **Figure 10**. There are three (3) main municipal wards within the BSA:

- Ward 12 – Rideau-Vanier
- Ward 14 – Somerset
- Ward 17 – Capital

The eastern/southern limits of the BSA also encroach onto to adjacent wards of: Ward 13 – Rideau-Rockcliffe and Ward 18 – Alta Vista.

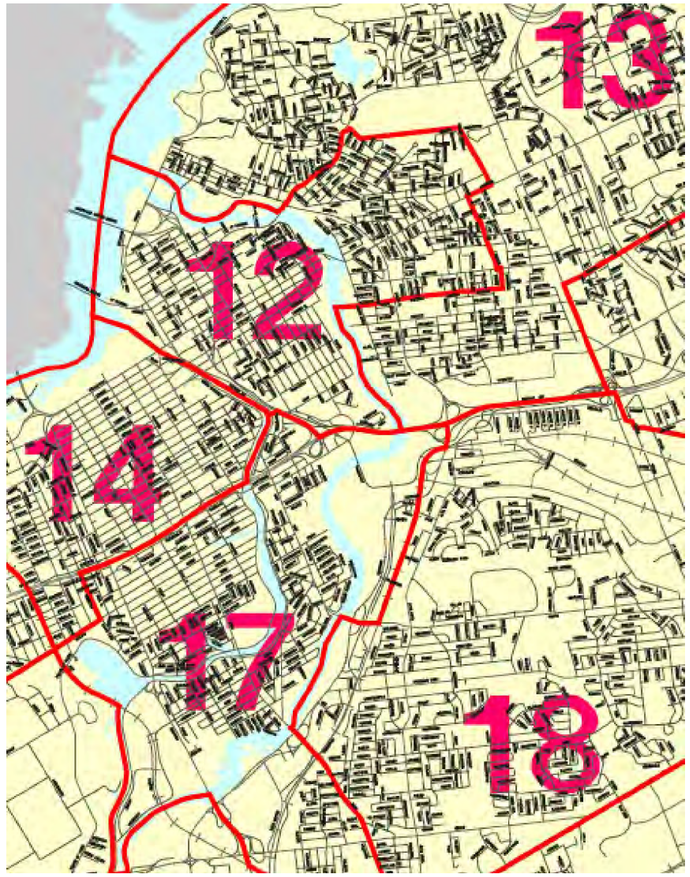

Figure 10: City of Ottawa Ward Boundaries (2006) in vicinity of BSA

3.2.2 Commercial and Tourism

There are many commercial and tourism areas throughout the BSA. Commercial areas are generally concentrated in lands designated general urban area, central area, mixed use centre, and traditional mainstreet. Some facilities of importance include:

- Ottawa City Hall at 110 Laurier Avenue West
- Lansdowne Park at 945 Bank Street

Tourism areas are found throughout the BSA; downtown Ottawa is a tourism destination for the National Capital. The Rideau Canal, Rideau River and Dow's Lake are all tourist attractions. The Canadian Museum of Nature and

Billing's Estate National Historic Site are within the BSA and numerous other museums and national historic sites are present north of the BSA in the vicinity of Parliament Hill.

Vibrant commercial and tourism areas are promoted by local business improvement areas (BIA's) as recognized by the City of Ottawa. BIA's established in the vicinity of the BSA are shown in **Figure 11**. There are six (6) BIA's within the BSA:

- Downtown Rideau BIA
- Bank Street BIA
- Preston Street BIA
- Somerset Street Chinatown BIA
- Somerset Village BIA
- Glebe BIA

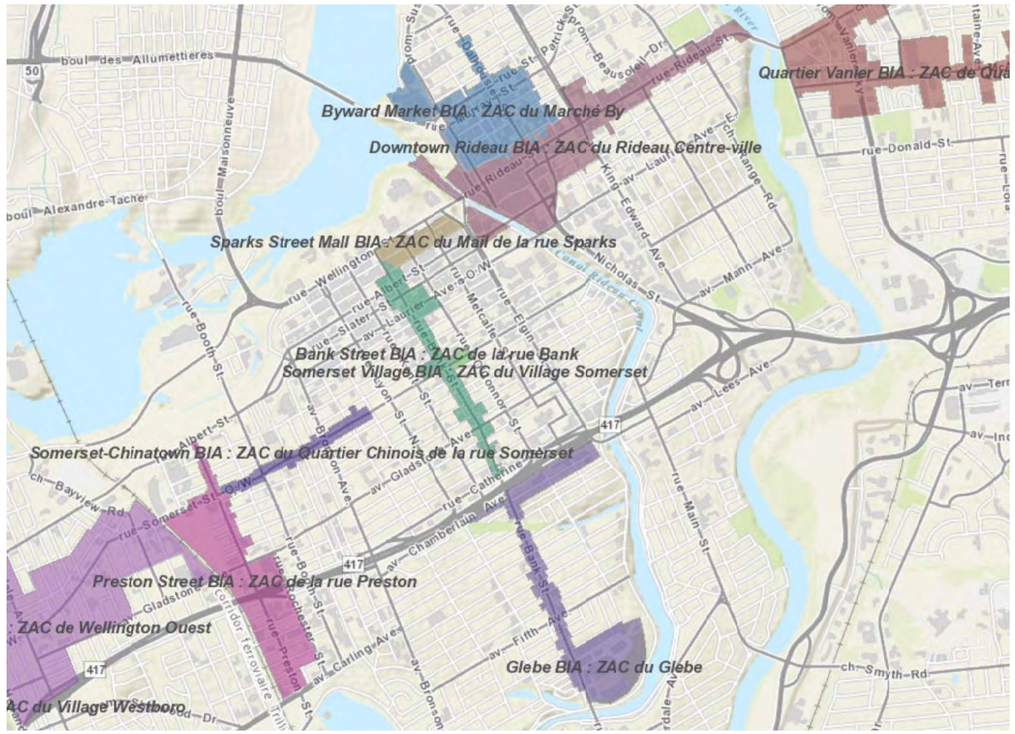

Figure 11: City of Ottawa BIAs in vicinity of BSA

3.2.3 Community, Institutional and Leisure

Community, institutional and leisure land uses may include such facilities as: schools, places of worship, community centres, libraries and recreation facilities, as provided in **Table 1**.

Table 1: Community, Institutional and Leisure Facilities:

Facility	Name and Location
Schools	• Adult High School, 300 Rochester Street • Astolot Education Centre, 1159 Bank Street • Corpus Christi School, 798 Lyon Street • Ecole Lycee Claudel, 1633 Riverside Drive • Elgin Street Public School, 310 Elgin Street • First Avenue Public School, 73 First Avenue • Glebe Collegiate Institute, 212 Glebe Avenue • Glebe Montessori School, 269 First Avenue • Hopewell Avenue Public School, 17 Hopewell Avenue • Immaculata High School, 140 Main Street • Lady Evelyn Alternative School, 63 Evelyn Avenue • Lisgar Collegiate Institute, 29 Lisgar Street • Mutchmor Public School, 185 Fifth Avenue • Ottawa Montessori School, 945 Bank Street • Saint Paul University, 223 Main Street • St Nicholas Adult High School, 88 Main Street • University of Ottawa, 75 Laurier Ave E • Viscount Alexander Public School, 55 Mann Avenue • Westboro Academy, 100 Brewer Way
Places of Worship	• All Nations Church - Central Ottawa, Church, 119 Osgoode St • Calvary Baptist Church, Baptist Church, 107 Main St • Calvary Fellowship of Ottawa, Church, 315 Lisgar St • Canadian Martyrs Parish, Catholic Church, 100 Main St • Centretown United Church, Christian Church, 507 Bank St • Christian Science, Church, 141 Laurier Av W • Christian Science, Church, 288 Metcalfe St • Church Council On Justice and Corrections, Religious Organization, 223 Main St • Church of the Ascension, Religious Institution, 253 Echo Drive • Church of the Blessed Sacrament, Catholic Church, 194 Fourth Avenue • Diocese Anglican D'Ottawa, Religious Organization, 154 Somerset St W • Dominion-Chalmers United Church, Church, 355 Cooper St • Ecclesiax, Church, 2 Monk St • Eglise Unie St-Marc, Church, 142 Lewis St • First Baptist Church, Baptist Church, 140 Laurier Ave W • First Church of Christ, Scientist, Christian Church, 288 Metcalfe St • Fourth Avenue Baptist Church, Baptist Church, 109A Fourth Ave • Grace City Church Ottawa, Church, 380 Elgin St • Holy Korean Martyrs, Religious Organization, 254 Argyle Ave

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Facility	Name and Location
	• Iblates of Mary Immaculate, Church, 100 Main St • Immaculate Heart of Mary Roman Catholic Church, 1758 Alta Vista Dr • Knox Presbyterian Church, Presbyterian Church, 120 Lisgar St • Metropolitan Andrey Sheptytsky Institute of Eastern Christian Studies, St Paul University, 223 Main St • Mountain of Fire and Miracles Ministries Ottawa, Place of Worship, 202 Terminal Ave • myChurch, Church, 425 Marché Way • New Covenant Apostolic Church, Apostolic Church, 174 First Ave • Ottawa Chinese Bible Church, Evangelical Church, 31 Graham Ave • Ottawa Chinese United Church, Church, 600 Bank St • Peace Latvian Ev Lutheran Church, Church, 83 Main St • Sacré-Coeur, Catholic Church, 591 Cumberland St • Sagrada Familia Parish/ Holy Family Parish, Catholic Church, 152 Glenora St • Saint Margaret Mary Parish, Catholic Church, 7 Fairbairn St • Southminster United Church, Church, 15 Aylmer Ave • St James United Church, United Church of Canada, 650 Lyon St S • St John the Evangelist Anglican Church, Anglican Church, 154 Somerset Street West • St Matthew's Anglican Church, Anglican Church, 217 First Ave • St. Giles Presbyterian Church, Christian Church, 174 Bank St • St. Joseph's Church, Catholic Church, 174 Wilbrod St • St. Peter & St Paul's Church (Anglican), Anglican Church, 152 Metcalfe St • St. Theresa's Catholic Church, Catholic Church, 95 Somerset St W • Sunnyside Wesleyan Church, Wesleyan Church, 58 Grosvenor Ave • The Journey, Christian Church, 15 Aylmer Ave • The Meeting House Ottawa, Church, 325 Marché Way • Trinity Anglican Church, Anglican Church, 1230 Bank St • Union City Church, Church, 2 Monk St
Community Centres	• Ottawa South Community Centre, 260 Sunnyside Avenue • Ottawa East Community Centre, 61 Main Street • Sandy Hill Community Centre, 250 Somerset Street • St Lukes Community Centre: Bethell Fieldhouse, 166 Frank Street • Jack Purcell Community Centre, 320 Jack Purcell Lane • Glebe Community Centre, 175 Third Avenue
Libraries	• Ottawa Public Library, Sunnyside Branch, 1049 Bank Street
Recreation Facilities (swimming pools, parks, skating rinks, tennis courts, sports fields, etc)	• Ballantyne Park, 31 Hawthorne Avenue • Bellwood Parkette, 100 Bellwood Avenue • Brantwood Park, 39 Onslow Crescent • Brewer Park, 100 Brewer Way • Brighton Beach Park, 30 Brighton Avenue • Brown’s Inlet Park, 65 Craig Street • Capital Park, 10 Ela Street • Cancer Survivors Park, 1480 Alta Vista Drive • Chamberlain Park, 80 Chamberlain Avenue

Facility	Name and Location
	• Central Park, 19 Clemow Avenue • Dale Park, 1590 Alta Vista Drive • Dalhousie South Park, 343 Bell Street South • Exploration Garden, 661 Bank Street • Fifth Avenue Parkette, 183 Forth Avenue • Glebe Memorial Park, 75 Glendale Avenue • John Murphy Park, 120 Rodney Crescent • Lansdowne Park Complex, 945 Bank Street • Lansdowne Park, 450 Queen Elizabeth Drive • Linda Thom Park, 1324 Bank Street • Lionel Britton Park, 19 Fifth Avenue • Marion Dewar Plaza, 110 Laurier Avenue West • Minto Park, 315 Elgin Street • Osborne Park, 21 Osborne Street • Patterson's Creek Park, 524 O'Connor Street • Percy Taverner Park, 130 Woodbine Place • Raymond Chabot Grant Thornton Park, 300 Conventry Road • Rideau River Islands, 2308 Riverside Drive • Rideau River Trail, 166 Lees Avenue • Robert F. Legget Park, 321 Main Street • Sandy Hill Arena, 60 Mann Avenue • Sandy Hill Park, 250 Somerset Street • Senator Eugene Forsey Park, 964 Bronson Avenue • Sylvia Holden Park, 641 O'Connor Street • Springhurst Park, 24 Brunswick Street • St. Germain Park, 86 Templeton Street • St James Tennis Courts, 690 Lyon Street South • Jack Purcell Park, 320 Jack Purcell Lane • St. Luke's Park, 166 Frank Street • Windsor Park Ottawa, 1B Windsor Avenue

3.2.4 Emergency Services

Emergency service facilities include emergency medical services (EMS) stations, fire stations, hospitals, police centres and polices stations. The emergency service facilities within the BSA include:

- EMS, 103 Catherine Street
- Fire Station 12 – Glebe, 10 Fifth Avenue
- Fire Station 56 – Overbrook, 275 Coventry Road
- Ottawa Hospital – Riverside Campus, 1919 Riverside Drive
- Police Provincial Court Office, 161 Elgin Street
- Police Centre Centretown Community, 110 Laurier Avenue West
- Police Central Headquarter, 474 Elgin Street

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4.0 Land Uses in the Immediate Study Area

Given the geographically close proximity of the four LSAs and the continuity of the land uses between the LSAs, documentation of the land use in the Immediate Study Area will provide minimal benefit and possibly result in misunderstanding. Accordingly, documentation of the Immediate Study Area is to be considered as the same as that of the adjacent LSAs.

5.0 Land Uses in the LSAs

5.1 City Of Ottawa Land Use Zoning

The City of Ottawa Zoning By-law No. 2008-250 implements many of the policies of the City's Official Plan. The City of Ottawa Zoning By-law details the day-to-day administrative duties and puts into effect the policies set out in the City's OP. The Zoning By-law states in detail:

- What uses are permitted on the lands;
- Where buildings and structures can be located;
- The types of buildings and specific uses of the building;
- The lot area and dimensions, setbacks and height restrictions; and
- The amount of landscaped open space and parking required for the use.

The following is a brief description of the land use zoning in the vicinity of the LSAs as found in the City of Ottawa Zoning By-law; refer to the City of Ottawa Zoning By-law for full description and details on permitted uses and provisions:

- **Residential (R):** The residential zones include R1- Residential First Density (detached dwellings), R2- Residential Second Density (two unit dwellings), R3- Residential Third Density (townhouse dwellings), R4- Residential Fourth Density (low rise apartments), R5- Residential Fifth Density (mid/high-rise apartments) and RM- Mobile Home. These zones are all considerer residential for this study.
- **Institutional (I1):** The purpose of the I1-Minor Institutional Zone is to permit a range of community uses, institutional accommodation and emergency service uses to locate in areas designated as General Urban Area or Central Area in the Official Plan, and minimize the impact of these minor institutional uses located in close proximity to residential uses by ensuring that the such uses are of a scale and intensity that is compatible with neighbourhood character.
- **Open Space (O):** The purpose of the O1- Parks and Open Space Zone is to permit parks, open space and related and compatible uses to locate in areas designated as General Urban Area, General Rural Area, Major Open Space, Mixed Use Centre, Village, Greenbelt Rural and Central Area as well as in Major Recreational Pathway areas and along River Corridors as identified in the Official Plan, and ensure that the range of permitted uses and applicable regulations is in keeping with the low scale, low intensity open space nature of these lands.
- **Leisure (L):** The leisure zones include L1- Community Leisure (urban local facilities), L2- Major Leisure Facility (urban City-wide facilities) and L3- Central Experimental Farm Zones. The purpose of the L1- Community Leisure Facility Zone is to: permit recreational uses that meet the needs of the surrounding

community to be located on land designated as General Urban Area, Major Open Space, Mixed Use Centre and Central Area in the Official Plan; and impose regulations which ensure that the scale and intensity of these uses is compatible with any adjacent residential uses. The purpose of the L2- Major Leisure Facility Zone is to: accommodate major, urban City-wide sports, recreational and cultural facilities addressed under the Major Urban Facilities policies of the Official Plan; permit a broad range and intensity of leisure, recreational, cultural and related uses; and allow a moderate density and scale of development.

- **General Mixed (GM):** The purpose of the GM – General Mixed-Use Zone is to: allow residential, commercial and institutional uses, or mixed use development in the General Urban Area and in the Upper Town, Lowertown and Sandy Hill West Character Areas of the Central Area designations of the Official Plan; limit commercial uses to individual occupancies or in groupings in well-defined areas such that they do not affect the development of the designated Traditional and Arterial Mainstreets as viable mixed-use areas; permit uses that are often large and serve or draw from broader areas than the surrounding community and which may generate traffic, noise or other impacts provided the anticipated impacts are adequately mitigated or otherwise addressed; and impose development standards that will ensure that the uses are compatible and complement surrounding land uses.
- **Local Commercial (LC):** The purpose of the LC– Local Commercial Zone is to: allow a variety of small, locally-oriented convenience and service uses as well as residential uses in the General Urban Areas and in the Residential Character Areas of the Central Area designations of the Official Plan; restrict the non-residential uses to individual occupancies or in groupings as part of a small plaza that would meet the needs of the surrounding residential areas; provide an opportunity to accommodate residential or mixed uses development; and impose development standards that will ensure that the size and scale of development are consistent with that of the surrounding residential area.
- **Traditional Mainstreet (TM):** The purpose the TM– Traditional Mainstreet Zone is to: accommodate a broad range of uses including retail, service commercial, office, residential and institutional uses, including mixed-use buildings but excluding auto-related uses, in areas designated Traditional Mainstreet in the Official Plan; foster and promote compact, mixed-use, pedestrian-oriented development that provides for access by foot, cycle, transit and automobile; recognize the function of Business Improvement Areas as primary business or shopping areas; and impose development standards that will ensure that street continuity, scale and character is maintained, and that the uses are compatible and complement surrounding land uses.

In addition to the provisions of the underlying zone, the following is a brief description of the overlays for land use zoning in the vicinity of the LSAs as found in the City of Ottawa Zoning By-law; refer to the City of Ottawa Zoning By-law for full description and details on permitted uses and provisions:

- **Heritage:** The heritage overlay applies to land uses in order to encourage the retention of existing heritage buildings by offering zoning incentives to reuse the buildings, and to limit the size and location of additions to preserve the heritage character of the original building. General provisions include: where a building in an area to which a heritage overlay applies is removed or destroyed it must be rebuilt with the same character and at the same scale, massing, volume, floor area and in the same location as existed prior to its removal or destruction.
- **Mature Neighbourhoods:** The mature neighbourhoods overlay applies to all residential uses other than mid-rise and high-rise apartment building, in all zones where the proposed dwelling type is permitted but

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does not apply to non-residential development. In the Mature Neighbourhoods, "Your street gives you your rules". In addition to the regular zoning that applies to a residential property, certain rules are based on the streetscape. To determine zoning requirements and permissions, a Streetscape Character Analysis is required. An innovative way of thinking about what really matters in mature neighbourhoods, the planning focus is on the similarities between the many lots along the street and on methods to emphasize and reinforce those key attributes that give the street its sought-after look.

5.2 Metcalfe Street Bridge LSA Specific Land Uses

City of Ottawa zoning and land use are shown in **Figure 12** and described below.

North of the Queensway, the land is zoned general mixed, leisure and institutional. Within the general mixed zone to the northeast are residences and commercial office buildings (subject to the heritage overlay), and to the northwest are multi-story buildings with mixed residential/commercial use (subject to the heritage overlay), including an EMS station. Within the leisure zone to the north/northwest is a YMCA and the Canadian Museum of Nature (subject to the heritage overlay). Within the institutional zone to the northeast is the Ottawa Police Central Headquarters.

South of the Queensway, the land is zoned general mixed and residential. Within the general mixed zone to the southeast are commercial buildings including a Loblaws, LCBO and TD Canada Trust Bank, and to the southwest are condos, a retirement residence and commercial use including an automotive service station and restaurants. Within the residential zones to the southwest are detached houses.



Figure 12: Land Use in vicinity of Metcalfe Street Bridge LSA

5.3 Elgin Street Bridge LSA Specific Land Uses

City of Ottawa zoning and land use are shown in **Figure 13** and described below.

North of the Queensway, the land is zoned general mixed, institutional, leisure, open space and residential. Within the general mixed zone to the northwest are residences and office buildings. Within the institutional zone to the northwest is the Ottawa Police Central Headquarters. Within the residential zones to the northeast are detached residences and apartment buildings. Within the leisure and open space zones to the north/northeast is open space/park with pathways.

South of the Queensway, the land is zoned general mixed and open space. Within the general mixed zone to the southwest are commercial buildings including a Loblaws, LCBO and TD Canada Trust Bank. Within the open space zone to the southeast is open space/park with pathways.



Figure 13: Land Use in vicinity of Elgin Street Bridge LSA

5.4 Rideau Canal Bridge LSA Specific Land Uses

City of Ottawa zoning and land use are shown in **Figure 14** and described below.

North of the Queensway, the land is zoned leisure, open space and residential. Within the residential zones to the northeast are row housing and condo/apartment buildings. Within the residential zones to the northwest are detached residences and apartment buildings. Within the leisure and open space zones to the northeast/northwest is open space/park with pathways.

South of the Queensway, the land is zoned open space, general mixed and traditional mainstreet. Within the general mixed zone to the southeast the land is vacant. Within the traditional mainstreet zone to the southeast is vacant land adjacent to the highway as well as mixed retail, commercial, office and residential properties, including Royal Oak restaurant, bicycle shop, travel agency and dental office. Within the open space zone to the southeast/southwest is open space/park with pathways.

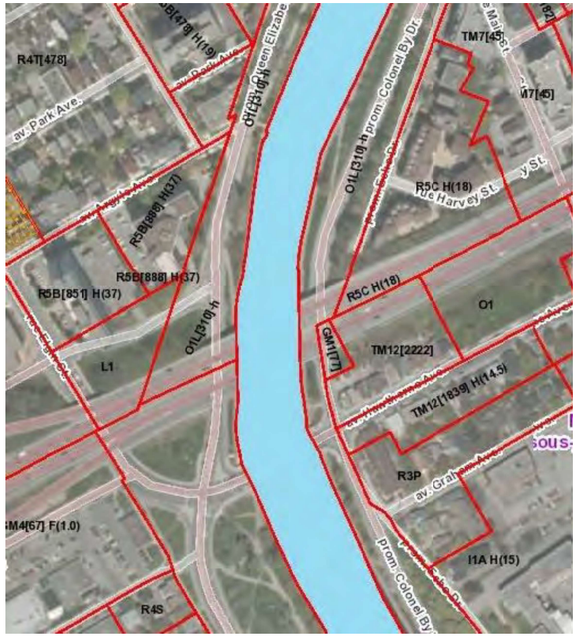

Figure 14: Land Use in vicinity of Rideau Canal Bridge LSA

5.5 Main Street Bridge LSA Specific Land Uses

City of Ottawa zoning and land use are shown in **Figure 15** and described below.

North of the Queensway, the land is zoned residential and traditional mainstreet. Within the residential zones to the northeast are detached/semi-detached residences. Within the residential zones to the northwest are row housing and condo/apartment buildings. Within traditional mainstreet zone to the north are mixed retail and residential properties, including a furniture store, detached residences and condos.

South of the Queensway, the land is zoned open space, leisure, traditional mainstreet and residential. Within the open space zone to the southwest is Ballantyne Park. Within the traditional mainstreet zone to the southeast is vacant land adjacent to the highway as well as mixed retail, commercial and community properties including construction office, Scotiabank, fitness studio, hair cutters, restaurants, bicycle shop, nail salon, Ottawa Chinese Bible Church and Peace Latvian Ev Lutheran Church. Within the leisure zone to the southeast is the Old Town Hall

and community centre (subject to the heritage overlay). Within the residential zone to the southeast is vacant land adjacent to the highway as well as detached/semi-detached residences.



Figure 15: Land Use in vicinity of Main Street Bridge LSA

5.6 Metcalfe and Elgin Streets Potential Staging Areas Specific Land Uses

The specific land uses at, and adjacent to, each potential staging area are shown in **Figure 16** and described as follows:

- **Staging Area E-1 (E-1e):** The land within the staging area is zoned leisure and open space, and is currently vacant as well as a portion of Catherine Street. The potential staging area is bordered by residential zoned apartment buildings to the north, Queen Elizabeth Drive and open space zoned park with pathways to the east, Queensway to the south and Elgin Street and institutional zoned vacant land/Ottawa Police Central Headquarters to the west.
- **Staging Area E-2:** The land within the staging area is zoned institutional, and is currently vacant. The potential staging area is bordered by Catherine Street and institutional zoned vacant land/Ottawa Police Central Headquarters to the north, Elgin Street and leisure/open space zoned vacant land to the east, Queensway/vacant land to the south and Metcalfe Street and general mixed zoned vacant land/multi-story buildings with mixed residential/commercial use, including an EMS station, to the west.
- **Staging Area E-3:** The land within the staging area is zoned general mixed, and is currently vacant. The potential staging area is bordered by general mixed and leisure zoned YMCA and multi-story buildings with mixed residential/commercial use, including an EMS station, Metcalfe Street, vacant land and a highway off-ramp to the east, Queensway to the south and Elgin Street and general mixed zoned parking lots to the west.

- **Staging Area E-4:** The land within the staging area is zoned institutional, and is currently vacant. The potential staging area is bordered by institutional zoned vacant land, Catherine Street and the Ottawa Police Central Headquarters to the north, Elgin Street and leisure/open space zoned vacant land to the east, Queensway to the south and Metcalfe Street and general mixed zoned vacant land/multi-story buildings with mixed residential/commercial use, including an EMS station, to the west.



Figure 16: Land Use in vicinity of Metcalfe and Elgin Streets Potential Staging Areas

5.7 Main Street Potential Staging Areas Specific Land Uses

The specific land uses at, and adjacent to, each potential staging area are shown in **Figure 17** and described as follows:

- **Staging Area M-1:** The land within the staging area is zoned general mixed, traditional mainstreet and open space, and is currently vacant and Ballantyne Park. The potential staging area is bordered by Queensway to the north, Main Street and traditional mainstreet/leisure zoned vacant land, construction office, restaurant, and Old Town Hall and community centre to the east, Hawthorne Avenue and traditional mainstreet zoned mixed retail, commercial, office and residential properties to the south and Colonel By Drive and open space zoned park with pathways to the west.
- **Staging Area M-2:** The land within the staging area is zoned institutional, and is currently paved parking lots at 20 Graham Avenue, 88 Main Street, 100 Main Street and a portion of 140 Main Street. The potential staging area is bordered by Graham Avenue and institutional and residential zoned residences, St. Nicholas Adult High School Central Campus and the Ottawa Chinese Bible Church to the north, Main Street and

traditional mainstreet/residential zoned mixed residential/retail and the Peace Latvian Ev Lutheran Church to the east, institutional zoned Canadian Martyrs Catholic Church and Immaculata High School to the south and institutional/residential zoned Church of the Ascension and residences to the west.

- **Staging Area M-3:** The land within the staging area is zoned institutional, and is currently paved parking lots of a portion of 140 Main Street. The potential staging area is bordered by institutional zoned Canadian Martyrs Catholic Church and Immaculata High School property to the north, Main Street and traditional mainstreet zoned mixed residential/commercial, automotive service centre and the Calvary Baptist Church to the east, institutional zoned Canadian Martyrs Catholic Church and Immaculata High School athletic field to the south and institutional zoned Immaculata High School buildings to the west.
- **Staging Area M-4:** The land within the staging area is zoned residential, and is currently vacant. The potential staging area is bordered by Queensway to the north, residential zoned residences to the east and south and Main Street and traditional mainstreet/open space zoned, vacant land, construction office, and restaurant to the west.
- **Staging Area M-5:** The land within the staging area is zoned residential and traditional mainstreet, and is currently vacant. The potential staging area is bordered by Harvey Street and residential zoned residential to the north and east, Queensway to the south and Main Street and traditional mainstreet zoned vacant land/mixed retail and residential properties to the west.
- **Staging Area M-6:** The land within the staging area is zoned traditional mainstreet, and is currently the parking areas from 40 to 48 Main Street and the detached residence at 44 Main Street. The potential staging area is bordered by traditional mainstreet zoned residences/condos to the north, Main Street and traditional mainstreet zoned mixed retail and residential properties to the east, traditional mainstreet zoned residential/commercial to the south and residential zoned detached/semi-detached residences to the west.

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Figure 17: Land Use in vicinity of Main Street Potential Staging Areas

6.0 Future Land Uses

6.1 City Of Ottawa Design and Planning Guidelines

The City of Ottawa has numerous guidelines which have completed their public consultation phase and have been approved by City Council for implementation. They include:

- Building Better and Smarter Suburbs: Strategic Directions and Action Plan
- Complete Streets in Ottawa and Multi-Modal Level of Service (MMLOS) Guidelines
- Consolidated Design Guidelines for New Development Application Gateway Features
- Downtown Moves: Transforming Ottawa's Streets
- Environmental Noise Control Guidelines
- Gateway Design
- Johnston Road Concept Plan
- Outdoor Patio Design Guidelines
- Park and Pathway Development Manual
- Regional Road Corridor Design Guidelines
- Right-of-Way Lighting Policy
- Road Corridor Planning & Design Guidelines
- Rural Village Design Guidelines
- Transit-Oriented Development Guidelines
- Urban Design Guidelines for Development along Arterial Mainstreets
- Urban Design Guidelines for Development along Traditional Mainstreets
- Urban Design Guidelines for Drive-Through Facilities
- Urban Design Guidelines for Gas Stations
- Urban Design Guidelines for Greenfield Neighbourhoods
- Urban Design Guidelines for High-Rise Housing
- Urban Design Guidelines for Large-Format Retail
- Urban Design Guidelines for Low-rise Infill Housing

Several guidelines may apply to works within the Study Area. Refer to the individual guidelines for full descriptions and details on policies.

6.2 City Of Ottawa Functional Redesign

City Council has approved the functional designs for Elgin Street (Laurier Avenue to Queen Elizabeth Driveway), Waverley Street (Elgin Street to Jack Purcell Lane) and Hawthorne Avenue (Pretoria Bridge to Main Street). The watermains and deep sewers under these streets are among the oldest in the city, dating back to the late 1800s. The need to replace this aging infrastructure created a unique opportunity to assess the road surfaces and redesign them to meet the City of Ottawa's Traditional Mainstreet designation in the Official Plan, Complete Streets policy and Accessibility Design Standards.

The redesign will include:

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- Widening the sidewalks on Elgin Street and Hawthorne Avenue;
- A two-lane cross-section with turning lanes at select intersections on Elgin Street between Lisgar Street and Argyle Avenue;
- A westbound bicycle lane, two eastbound and one westbound vehicle lanes on Hawthorne Avenue between Colonel By Drive and Main Street;
- A posted speed limit of 30 km/h on Elgin Street between Lisgar and McLeod Streets;
- Traffic calming measures and flexible space for on-street parking, patios and seasonal uses on Elgin Street; and
- Six flexible on-street parking spaces, trees and seating areas on Waverley Street between Elgin Street and Jack Purcell Lane.

The City plans to begin working on the detailed designs of the roads, sewers and watermains, with construction planned to begin in 2019. The City will work to provide additional temporary public parking within close vicinity of Elgin Street during reconstruction.

6.3 City Of Ottawa Site Plan Control Area

The community of Sandy Hill is designated as a special Site Plan Control Area. The site plan control bylaw designates Sandy Hill as a Special Site Plan Control Area. This by-law applies to all new residential development in Sandy Hill, but is limited to a review of the design and elevations, the location and layout of on-site parking, landscaping, grading and drainage, and waste management.

6.4 City Of Ottawa Design Priority Areas:

Development proposals located within the Design Priority Areas (DPA's) are subject to the Ottawa's Urban Design Review Panel process. Ottawa's Urban Design Review Panel is an independent advisory panel of volunteer professionals who provide an objective peer review of both capital and private sector development projects throughout the City's DPA's. The Panel is an important addition to the City's formal design review process and is intended to enhance the City's capabilities in achieving architectural and urban design excellence.

DPA's within the BSA are shown in **Figure 18**. DPA's include areas as detailed below:

- Downtown Precincts as defined by the Downtown Ottawa Urban Design Strategy (DOUDS) (see **Section 6.4.1**);
- Traditional and Arterial Mainstreets as identified on Schedule B of the OP;
- Mixed Use Centres as identified on Schedule B of the OP;
- Other areas with special design needs such as the mainstreets within Villages designated on Schedule 'A' of the OP, Village core areas identified in Volume 2C of the OP, community core areas identified in community design plans or secondary plans approved by City Council.

The Panel will provide urban design advice and input on the following, with some exceptions (see City of Ottawa application process for details):

- Zoning By-law applications proposed within Design Priority Areas (DPA's) where there is a request for a change in density or height.

- Site Plan Control applications proposed within DPA's.
- Public capital projects occurring in DPA's such as new buildings, major renovations to public buildings, major infrastructure projects and streetscaping projects.

Note: Projects in DPA's that require design approval from the Ottawa Built Heritage Advisory Committee (OBHAC) or National Capital Commission (NCC) will be subject to Panel design review; however, Panel recommendations will be forwarded to the applicable organizational body for information and final design approval.

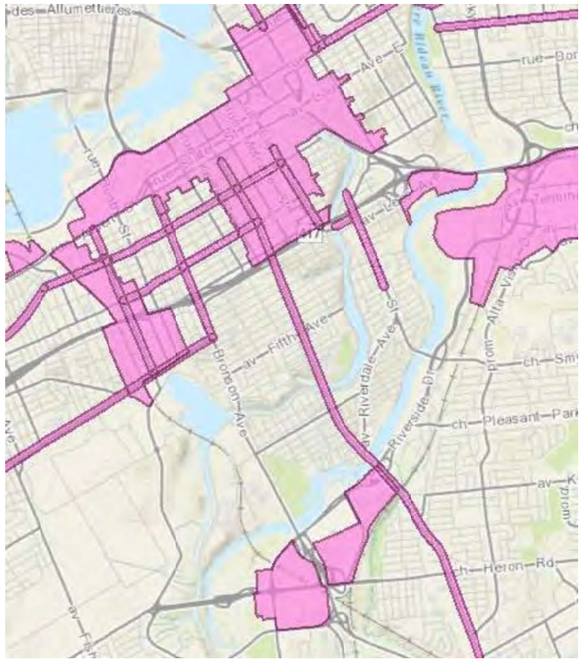

Figure 18: Design Priority Areas in the vicinity of the BSA

6.4.1 Downtown Ottawa Urban Design Strategy (DOUDS)

The Downtown Ottawa Urban Design Strategy 20/20 is built around four complementary approaches. Each approach contains a bundle of projects to address different urban issues at different geographic scales.

Each approach contributes to the realization of an improved Downtown Ottawa. This structure has been prepared to ensure that there is a logical sequence in the progression of the design guidance from large downtown-wide initiatives to smaller scale targeted projects. The approaches identified include Area-Wide Strategies appropriate for the entire downtown area, Precinct Strategies that address the general conditions and larger issues within each precinct and Targeted Strategies that focus on very specific design issues within each precinct. An NCC-led approach to downtown improvements has also been included.

In the vicinity of the LSAs, DOUDS Strategy #37: Metcalfe Gateway and Canadian Museum of Nature Block Restoration applies, as shown in **Figure 19**. This approach Strategy identifies seven targeted actions:

- Restore the urban grid and block structure to allow for an expanded park. This can be achieved through the elimination of the Metcalfe Street continuation between McLeod Street and Argyle Avenue.
- Re-landscape the park to bring it up to a significantly higher standard.
- Special treatment at the intersection of McLeod and Metcalfe.
- Convert Metcalfe and O'Connor Streets to two-way.
- Reconstruct Metcalfe Street as a Civic Boulevard for Ottawa.
- Consider a reconfigured Highway 417/Metcalfe/O'Connor ramp system to realign and/or consolidate access ramps and bring them closer to Highway 417.
- Improve the existing road network access system from Highway 417 and Elgin Street to the Queen Elizabeth Driveway.



Figure 19: DOUDS in the vicinity of the LSAs

6.5 City Of Ottawa Community Design Plans

City of Ottawa Community Design Plans (CDP's) are intended to guide change in areas of Ottawa targeted for growth and improvement as directed by the Official Plan, including the Central Area, Town Centres, Mixed-Use Centres, Mainstreets, Developing Communities, Employment Areas, and Urban Expansion Study Areas. CDP's recognize that each community is unique and has distinct opportunities and challenges for managing change. Their purpose is to translate the principles and policies of the OP to the community scale. Once Council approves a CDP, the plan becomes Council's policy for public and private development in the planning area.

While all CDP's focus on land use and development they also address transportation and elements of the public realm, including parks and streetscapes. They may produce related initiatives such as design guidelines, zoning amendments, a greening strategy or any number of other strategies that are required to address the physical development of the study area. CDP's may be implemented through a Secondary Plan.

A CDP is a Council-approved policy document and generally focuses on the planning and design of the physical environment and may address a wide range of topics. However, a CDP is not a statutory document.

A Secondary Plan is a statutory policy document approved under the Ontario Planning Act. It forms part of the Official Plan and typically focuses on land use planning matters. The process to adopt and amend a Secondary Plan is regulated by the Planning Act. The decision by Council on the adoption and amendment to a Secondary Plan is appealable to the Ontario Municipal Board.

Community Design Plans are intended to be used by organizations and individuals who will play a role in shaping future development in the CDP areas, including City departments, City Council, federal agencies, landowners, business owners, community associations and residents. Specifically,they should be used as follows:

- To inform landowners, business owners, developers and the general public about the urban design vision and objectives for the area;
- As the basis for a Secondary Plan setting out policies respecting land use, built form, the public realm and other matters;
- As the basis for amendments to the City's Zoning By-law;
- To guide detailed planning of public capital projects identified in the plan and updates to the City's plan for capital projects;
- As a guideline document when preparing and reviewing site-specific rezoning, site plan and Committee of Adjustment applications as well as capital projects.

Community Design Plans and Secondary Plans within the BSA are shown in **Figure 20** and **Figure 21**. There are two communities which include LSAs (local bridge sites and/or potential staging areas). These are the Centretown and Old Ottawa East plans.

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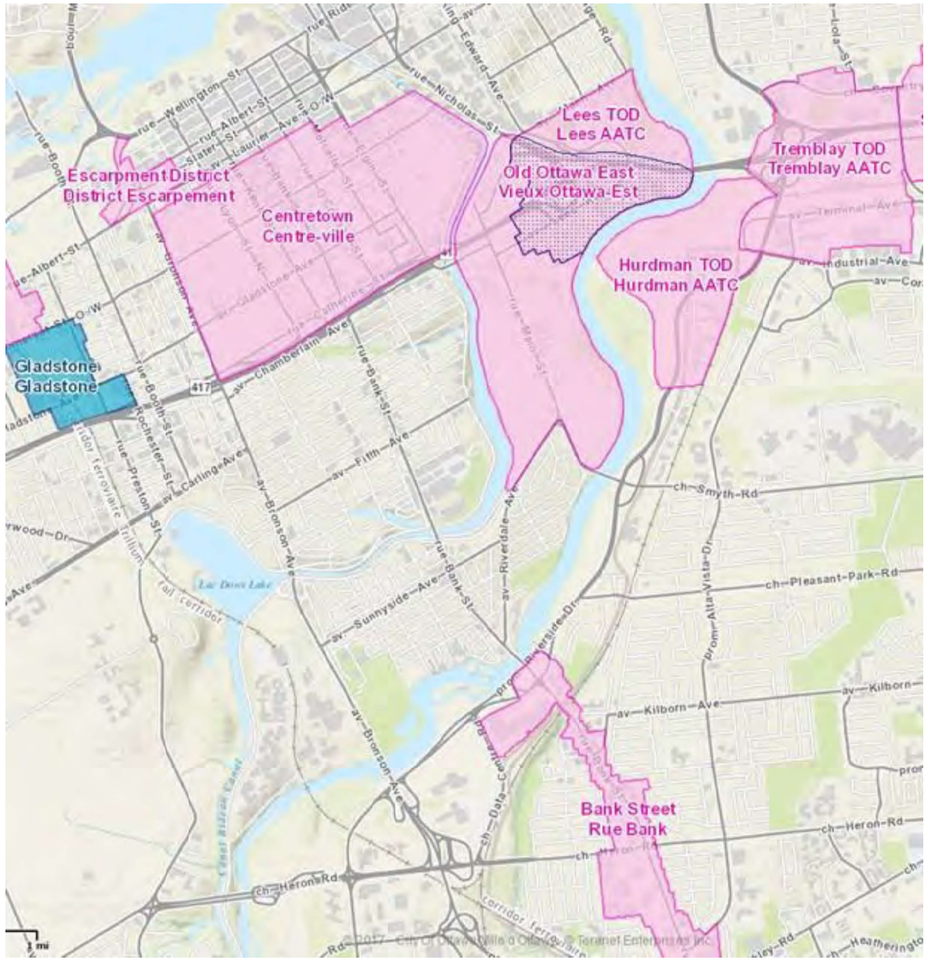


Figure 20: Community Design Plans in the vicinity of the BSA

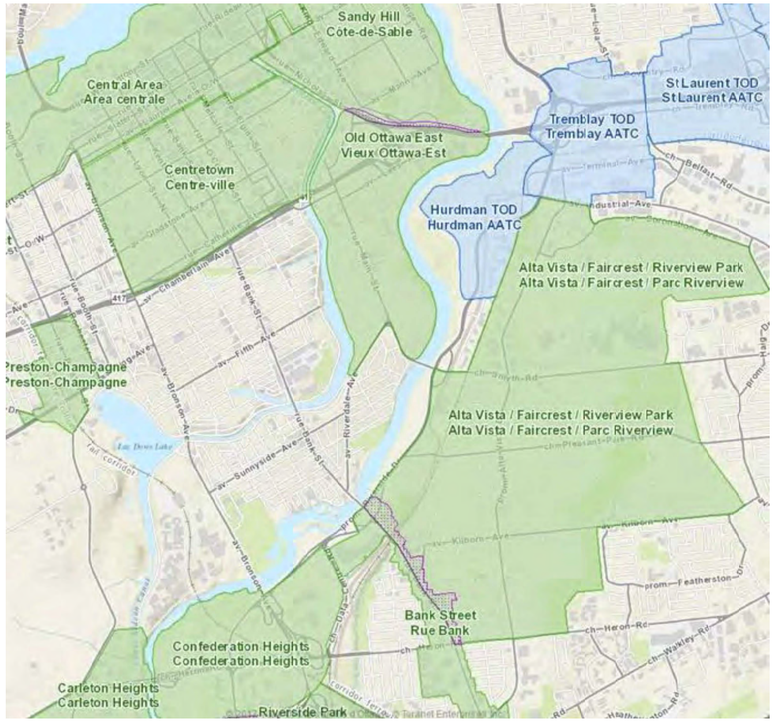


Figure 21: Secondary Design Plans in the vicinity of the BSA

6.5.1 Centretown Community Design Plan

The Centretown CDP and accompanying Secondary Plan was completed on May 8, 2013. They include discussion of streetscape design, pedestrian, cycling and transit priorities/strategies, as well as parking. The CDP addresses many land use, design and implementation strategies. Some of the elements of the Centretown CDP and Secondary Plan that may be relevant to the current study include:

- Proposed exclusive bus lanes and busways and to encourage research into other methods and modes of transit which will increase use of the public system and decrease reliance on the private automobile.
- Proposed design and development of a safe and attractive system of pedestrian and bicycle paths, including Metcalfe Street, designed to ensure linkages into existing networks.
- Potential conversion of Metcalfe Street one-way north-south to two-way traffic considering the impacts on the existing Queensway ramping system and changes to the Queensway corridor proposed by the Ministry of Transportation as well as the priorities identified by the National Capital Commission Core Area Master Plan.

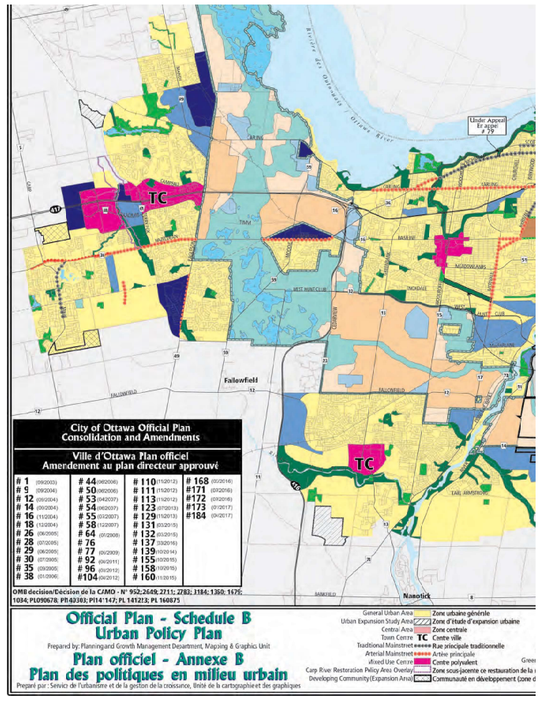
- Proposed definition of Metcalfe Street as a major civic boulevard and capital gateway and reinvent as a green boulevard that links the civic realm with the capital realm.
- Proposed streetscape, landscape and public realm improvements on Metcalfe Street for any road and infrastructure renewal program, including cycling strategies and the evolution of Metcalfe Street into a Civic Boulevard.
- Proposed street beautification and streetscaping for Elgin Street and Metcalfe Street.
- Potential streetscaping along Catherine Street, requiring significant tree planting as well as the relocation and/or camouflaging of surface parking lots.
- Proposed Metcalfe Gateway and Canadian Museum of Nature Block Restoration including: elimination of the Metcalfe Street continuation between McLeod Street and Argyle Avenue to create a single expanded park space; re-landscaping the park; create a public gathering space at the front entrance to the museum; and, reconstruction of Metcalfe Street as a civic boulevard.

6.5.2 Old Ottawa East Community Design Plan

The Old Ottawa East CDP and accompanying Secondary Plan were completed on August 25, 2011. They include discussion of urban design strategy, streetscape design, pedestrian and cycling routes, sewer/water/storm capacity and management and park and open space planning. The CDP addresses many land use, design and implementation strategies. Some of the elements of the Old Ottawa East CDP and Secondary Plan that may be relevant to the current study include:

- Proposed for Main Street north of the Queensway: Rationalize the width of travelled lanes in the roadway and transfer any excess to the sidewalks when the City undertakes reconstruction of Main Street in order to provide wider and more attractive sidewalks and to encourage pedestrian traffic along Main Street and Hawthorne Street.
- Proposed for Main Street south of Highway 417 to Springhurst and Immaculata High School: Adapt and reuse the existing school buildings and infill with built form compatible with the contiguous area in the redevelopment of the Ottawa Catholic School Board properties located at 88 Main Street and 20 Graham Street.
- Proposed streetscape improvements, to encourage pedestrian use, that have a traffic function include: widen sidewalks on Main Street; permit parking in the “non-peak” direction on Main Street during peak hours; install angle parking on Harvey Street just east of Main Street; and consider options for the fourth lane should Main Street be narrowed from 4 to 3 lanes.
- Proposed continuing on-street bicycle routes sharing the lane with vehicles. Lane widths for the travelled roadway to be designed to accommodate bicycles at the time of road reconstruction.
- Priority for pedestrian linkages will be given to connect to transit stations and bus stops.
- Potential footbridge over the Rideau Canal as set out in the Cycling and Pedestrian Plans.
- Potential to develop Ballantyne Park for leisure use and as an ornamental landmark.
- Priority to integrate green space and ensure connectivity by: integrate existing trees in the development to the extent possible; and establish east-west pedestrian/cycle paths between Main Street and the Rideau River.

Appendix A
City of Ottawa's
Official Plan (OP) Schedules



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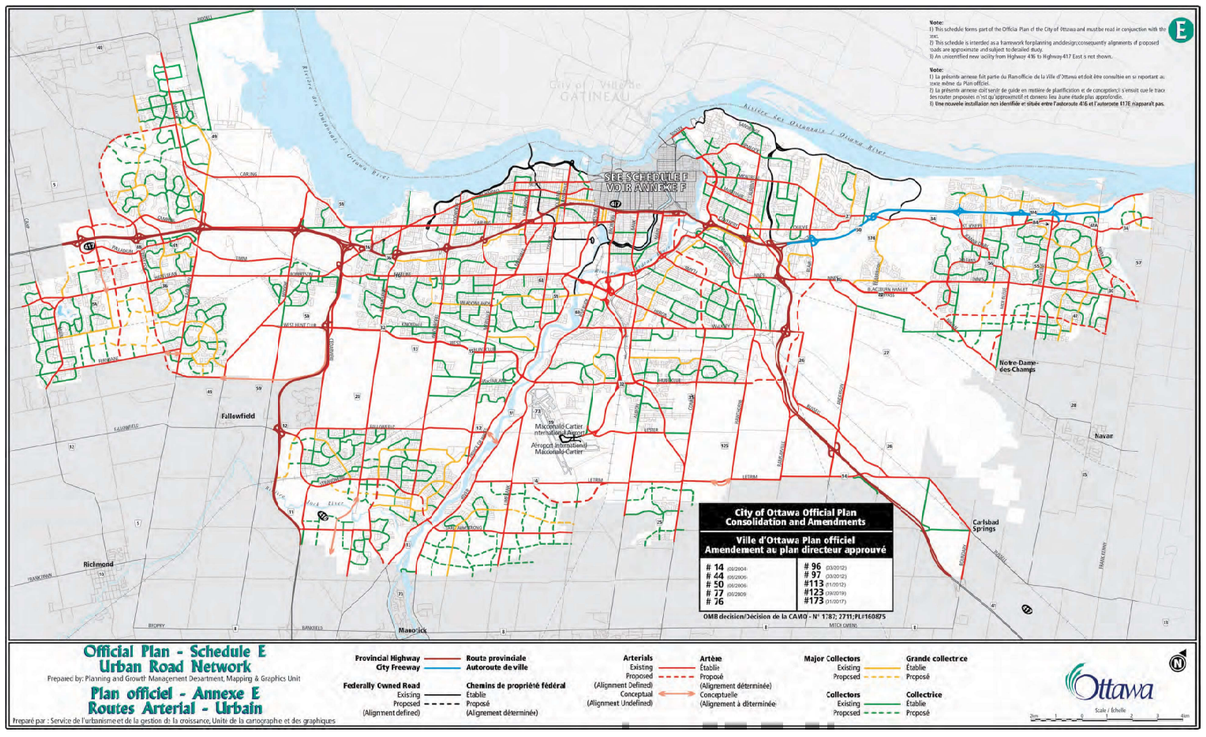
Note:
1) This schedule forms part of the Official Plan of the City of Ottawa and must be read in conjunction with the text.
2) This schedule is intended as a framework for planning and design;consequently alignments of proposed roads are approximate and subject to detailed study.
3) An unidentified new facility from Highway 416 to Highway 417 East is not shown.
Note:
1) La présente annexe fait partie du Plan officiel de la Ville d'Ottawa et doit être consultée en se reportant au texte même du Plan officiel.
2) La présente annexe doit servir de guide en matière de planification et de conception;il s'ensuit que le tracé des routes proposées n'est qu'approximatif et donnera lieu à une étude plus approfondie.
3) Une nouvelle installation non identifiée et située entre l'autoroute 416 et l'autoroute 417E n'apparaît pas.
E
City of Ottawa Official Plan
Consolidation and Amendments
Ville d'Ottawa Plan officiel
Amendement au plan directeur approuvé
14 (09/2004)
44 (09/2005)
50 (09/2005)
27 (05/2009)
76
96 (03/2012)
97 (03/2012)
#113 (01/2012)
#123 (09/2019)
#173 (01/2017)
OMB decision/Décision de la CAMO - N° 1182; 2711;PL160805
Richmond
Fallowfield
Manotick
Navan
Carlsbad Springs
Notre-Dame-des-Champs
Macdonald-Cartier International Airport
Aéroport international Macdonald-Cartier
Official Plan - Schedule E
Urban Road Network
Prepared by: Planning and Growth Management Department, Mapping & Graphics Unit
Plan officiel - Annexe E
Routes Arterial - Urbain
Prepare par : Service de l'urbanisme et de la gestion de la croissance, Unite de la cartographie et des graphiques
Provincial Highway
City Freeway
Route provinciale
Autoroute de ville
Federally Owned Road
Existing
Proposed
(Alignment defined)
Chemins de propriété fédéral
Etablie
Proposé
(Alignement déterminé)
Arterials
Existing
Proposed
(Alignment Defined)
Conceptual
(Alignment Undefined)
Artère
Etablie
Propoé
(Alignement déterminé)
Conceptuelle
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Major Collectors
Existing
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Collectors
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Grande collectrce
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Collectrice
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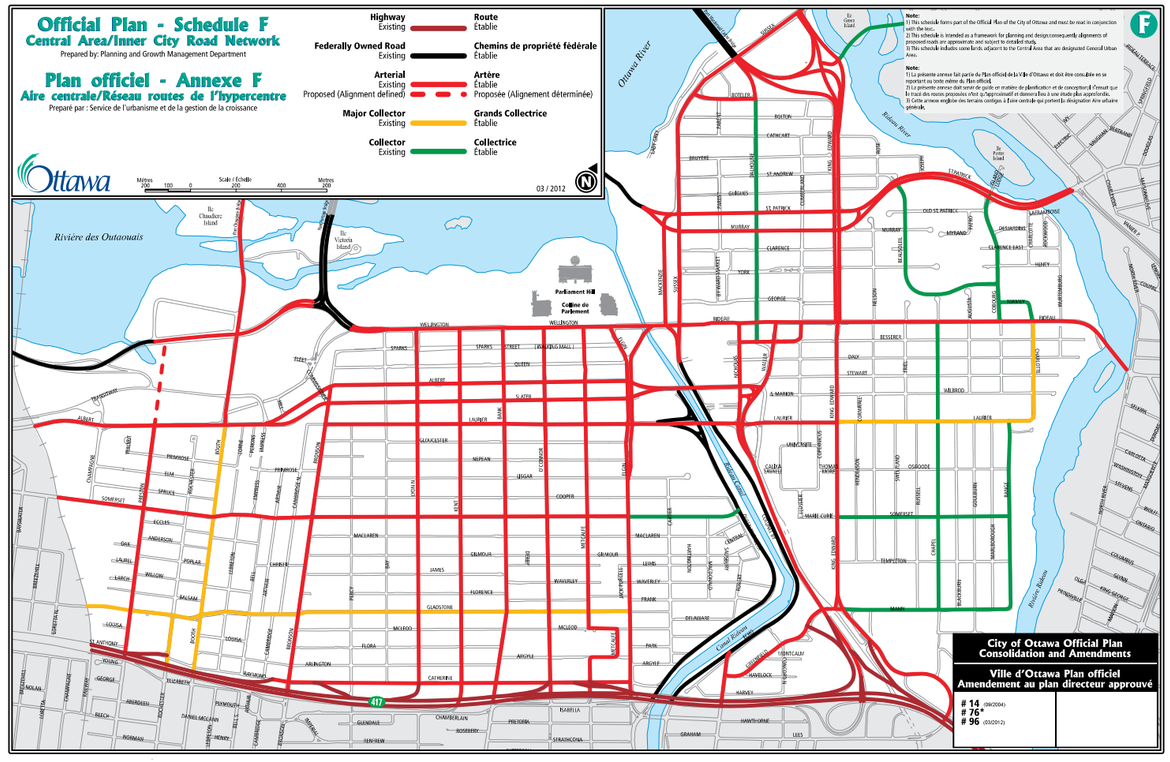
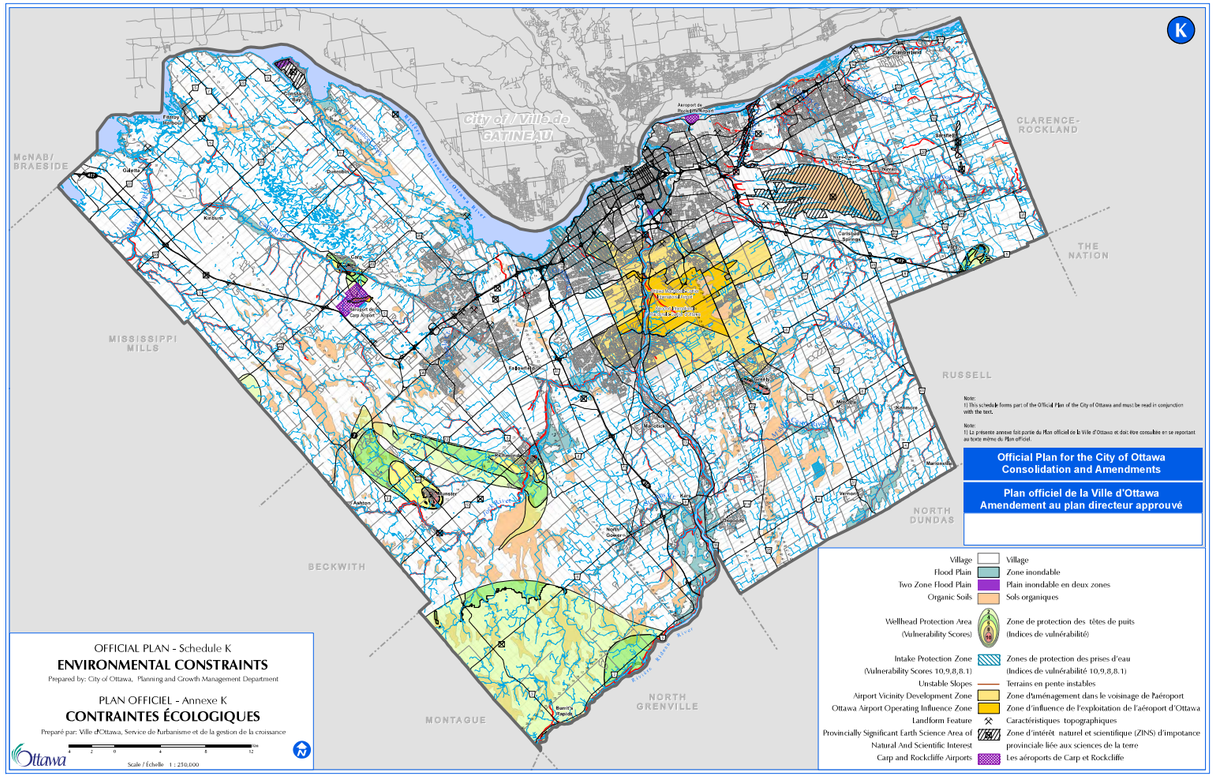
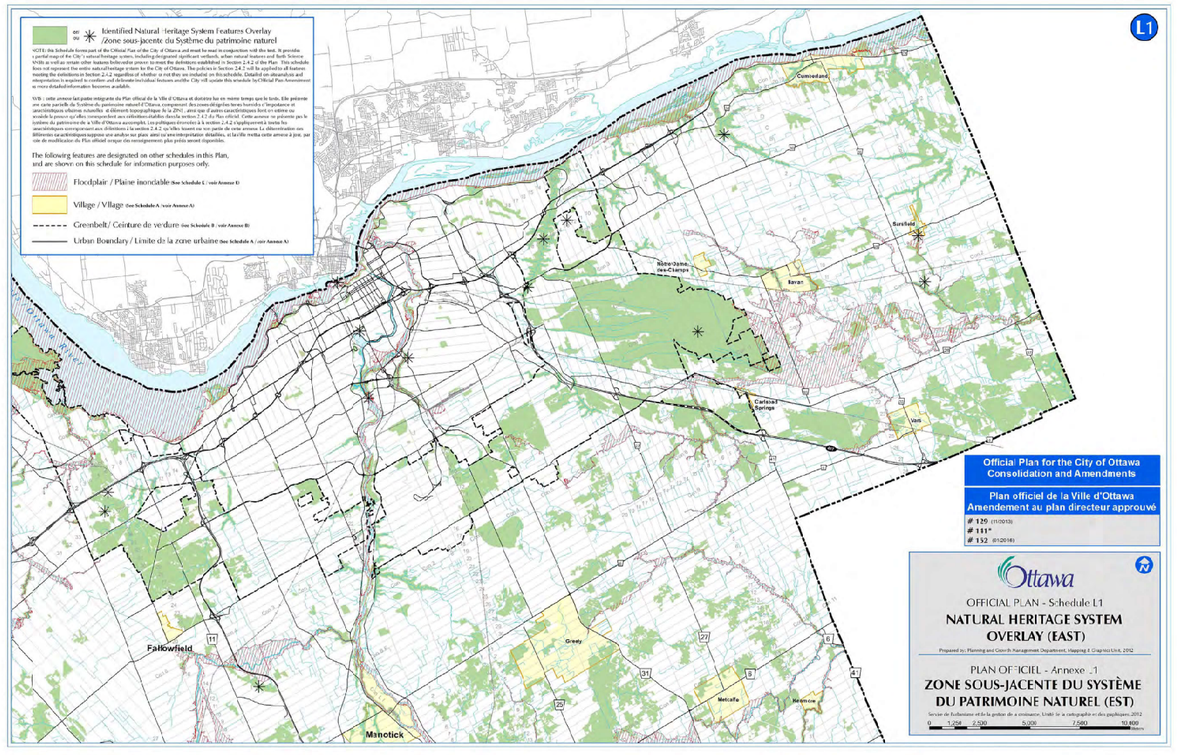
Ottawa
Scale / Échelle


Official Plan - Schedule F
Central Area/Inner City Road Network
Prepared by: Planning and Growth Management Department
Plan officiel - Annexe F
Aire centrale/Réseau routes de l'hypercentre
Preparé par : Service de l'urbanisme et de la gestion de la croissance
Highway
Existing
Route
Établie
Federally Owned Road
Existing
Chemins de propriété fédérale
Établie
Arterial
Existing
Proposed (Alignment defined)
Artère
Établie
Proposée (Alignement déterminée)
Major Collector
Existing
Grands Collectrice
Établie
Collector
Existing
Collectrice
Établie
03 / 2012
Ottawa
Scale / Échelle
Metres
Mètres
Note:
1) This schedule forms part of the Official Plan of the City of Ottawa and must be read in conjunction with the text.
2) This schedule is intended as a framework for planning and design;consequently alignments of proposed roads are approximate and subject to detailed study.
3) This schedule includes some lands adjacent to the Central Area that are designated General Urban Area.
Note:
1) La présente annexe fait partie du Plan officiel de la Ville d'Ottawa et doit être consultée en se reportant au texte même du Plan officiel.
2) La présente annexe doit servir de guide en matière de planification et de conception;il s'ensuit que le tracé des routes proposées n'est qu'approximatif et donnera lieu à une étude plus approfondie.
3) Cette annexe englobe des terrains contigus à l'aire centrale qui portent la désignation Aire urbaine générale.
F
Rivière des Outaouais
Ottawa River
Rideau River
Île Chaudière Island
Île Victoria Island
Île Nepean Island
Parliament Hill
Colline du Parlement
Canal Rideau
Rideau Canal
417
City of Ottawa Official Plan
Consolidation and Amendments
Ville d'Ottawa Plan officiel
Amendement au plan directeur approuvé
14 (09/2004)
76*
96 (03/2012)


K
City of / Ville de GATINEAU
McNAB/ BRAESIDE
CLARENCE-ROCKLAND
THE NATION
MISSISSIPPI MILLS
RUSSELL
NORTH DUNDAS
BECKWITH
NORTH GRENVILLE
MONTAGUE
Note:
1) This schedule forms part of the Official Plan of the City of Ottawa and must be read in conjunction with the text.
Note:
1) La présente annexe fait partie du Plan officiel de la Ville d'Ottawa et doit être consultée en se reportant au texte même du Plan officiel.
Official Plan for the City of Ottawa
Consolidation and Amendments
Plan officiel de la Ville d'Ottawa
Amendement au plan directeur approuvé
Village
Flood Plain
Two Zone Flood Plain
Organic Soils
Wellhead Protection Area (Vulnerability Scores)
Intake Protection Zone (Vulnerability Scores 10,9,8,8,1)
Unstable Slopes
Airport Vicinity Development Zone
Ottawa Airport Operating Influence Zone
Landform Feature
Provincially Significant Earth Science Area of Natural And Scientific Interest
Carp and Rockcliffe Airports
Village
Zone inondable
Plain inondable en deux zones
Sols organiques
Zone de protection des têtes de puits (Indices de vulnérabilité)
Zones de protection des prises d'eau (Indices de vulnérabilité 10,9,8,8,1)
Terrains en pente instables
Zone d'aménagement dans le voisinage de l'aéroport
Zone d'influence de l'exploitation de l'aéroport d'Ottawa
Caractéristiques topographiques
Zone d'intérêt naturel et scientifique (ZINS) d'importance provinciale liée aux sciences de la terre
Les aéroports de Carp et Rockcliffe
OFFICIAL PLAN - Schedule K
ENVIRONMENTAL CONSTRAINTS
Prepared by: City of Ottawa, Planning and Growth Management Department
PLAN OFFICIEL - Annexe K
CONTRAINTES ÉCOLOGIQUES
Préparé par: Ville d'Ottawa, Service de l'urbanisme et de la gestion de la croissance
Scale / Échelle 1 : 210,000


L1
Identified Natural Heritage System Features Overlay
Zone sous-jacente du Système du patrimoine naturel
NOTE: this Schedule forms part of the Official Plan of the City of Ottawa and must be read in conjunction with the text. It provides a partial map of the City's natural heritage system, including designated significant wetlands, urban natural features and Areas of Natural and Scientific Value as well as certain other features believed to meet the definitions established in Section 2.4.2 of the Plan. This schedule does not represent the entire natural heritage system for the City of Ottawa. The policies in Section 2.4.2 will be applied to all features meeting the definitions in Section 2.4.2 regardless of whether or not they are included on this schedule. Detailed on-site analysis and interpretation is required to confirm and delineate individual features and the City will update this schedule by Official Plan Amendment as more detailed information becomes available.
Nb : cette annexe fait partie intégrante du Plan officiel de la Ville d'Ottawa et doit être lue en même temps que le texte. Elle présente une carte partielle du Système du patrimoine naturel d'Ottawa comprenant des zones désignées de terres humides d'importance et provinciales d'intérêt scientifique et d'intérêt topographique de la ZINS, ainsi que d'autres caractéristiques dont on estime ou souhaite la présence qu'elles correspondent aux définitions établies dans la section 2.4.2 du Plan officiel. Cette annexe ne présente pas le système du patrimoine de la Ville d'Ottawa au complet. Les politiques énoncées à la section 2.4.2 s'appliqueront à toutes les caractéristiques correspondant aux définitions à la section 2.4.2 qu'elles soient ou non parties de cette annexe. La délimitation des différentes caractéristiques suppose une analyse sur place ainsi qu'une interprétation détaillées, et la Ville mettra cette annexe à jour, par voie de modification du Plan officiel lorsque des renseignements plus précis seront disponibles.
The following features are designated on other schedules in this Plan, and are shown on this schedule for information purposes only.
Floodplain / Plaine inondable (See Schedule L / voir Annexe I)
Village / Village (See Schedule A / voir Annexe A)
Greenbelt / Ceinture de verdure (See Schedule B / voir Annexe B)
Urban Boundary / Limite de la zone urbaine (See Schedule A / voir Annexe A)
Cumberland
Rideau-Jasmine-Osgoode
Sarsfield
Rideau-Jasmine-Navan
Carlsbad Springs
Vars
Fallowfield
Greely
Metcalfe
Manotick
Notes:
129 (17/07/13)
151* (01/06/16)
Official Plan for the City of Ottawa
Consolidation and Amendments
Plan officiel de la Ville d'Ottawa
Amendement au plan directeur approuvé
OFFICIAL PLAN - Schedule L1
NATURAL HERITAGE SYSTEM OVERLAY (EAST)
PLAN OFFICIEL - Annexe L1
ZONE SOUS-JACENTE DU SYSTÈME DU PATRIMOINE NATUREL (EST)

Appendix D
Contamination Overview Study Report

Ottawa Queensway Downtown Bridges Preliminary Design and Environmental Assessment Study for Rehabilitation/Replacement GWP 4170-13-00

DRAFT Contaminant Overview Study





July 16, 2017

BT Eng Project 17-010

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Executive Summary

BT Engineering Inc. (BTE) was retained by the Ministry of Transportation (MTO) to conduct a Contamination Overview Study (COS) as part of the Class Environmental Assessment for Provincial Transportation Facilities (MTO Class EA) for the rehabilitation or replacement of seven (7) bridges (at four locations) on the Ottawa Queensway (Highway 417) from Metcalfe Street to Main Street.

Six (6) sources of medium or high potential environmental contamination were identified for the COS Study Area which could impact the rehabilitation or replacement of bridges. Based on available information, it is our recommendation that a Soils Management Plan be developed and/or a Phase II ESA be considered for additional soil and/or groundwater investigation once the bridge management plans for the 7 Queensway bridges are developed.

Property	Year(s)	Property Use	Indicators of Environmental Concern	Relative Potential for Soil and/or Groundwater Contamination	Nearest Bridge Sites	Nearest Potential Staging Areas
Rideau Canal UNESCO World Heritage Site	Crown to Present	Waterbody	Reported sediment contamination of heavy metals, such as lead and cadmium, as well as PAHs; Historical industrial activity on both banks; and vessels hauling industrial goods	High	Rideau Canal	E1 (E1-e) M1
Queensway	Prior to 1902 to early 1960s	Grand Trunk Railway rail yard lines and spurs (14) and buildings for various purposes (coal bins, woodworking machinery, car building shops, scrap sheds, stores)	Reported soil contamination in the vicinity	Medium	Metcalfe Elgin	E1 (E1-e) E2 E3 E4
Queensway	Prior to 1902 to early 1960s	Rail lines	Reported soil contamination in the vicinity	Medium	Rideau Canal Main	M1 M4 M5 M6
Property north of Ballantyne Park	Prior to 1902 to early 1960s	Vacant land, MTO road allowance	Rail spur and coal shed	Medium	Rideau Canal Main	M1
58 Main Street	Prior to 1954 to late 1960s	Commercial	Former service station, one (1) UST adjacent to the east of the building	Medium	Main	M1

Property	Year(s)	Property Use	Indicators of Environmental Concern	Relative Potential for Soil and/or Groundwater Contamination	Nearest Bridge Sites	Nearest Potential Staging Areas
467 Elgin Street	Prior to 1928 to late 1960s	Residential	Service station, pump islands, three (3) USTs adjacent to the west of the service station	Medium	Elgin Rideau Canal	E1 (E1-e)

1.0 Introduction

BT Engineering Inc. (BTE) was retained by the Ministry of Transportation (MTO) to conduct a Contamination Overview Study (COS) as part of the Class Environmental Assessment for Provincial Transportation Facilities (MTO Class EA) for the rehabilitation or replacement of seven (7) bridges (at four locations) on the Ottawa Queensway (Highway 417) from Metcalfe Street to Main Street. The COS Study Area includes the "Local Study Areas" of the bridges at each individual site location, as shown on **Figure 1 (Appendix A)**, as well as a buffer zone which includes potential staging areas for alternative construction staging sites, as shown in **Figures 2 to 5 (Appendix A).**

1.1 Scope of Investigation

The COS has been completed in accordance with the MTO Environmental Guide for Contaminated Property Identification Management (2006). The COS is a high level assessment of properties/areas with potential for contamination; it is not considered a Phase I ESA and has not been completed in accordance with Canadian Standards Association Standard Z768-01 or the requirements of Ontario Regulation 153/04 (as amended).

The COS included the following scope of work:

- Records review (if applicable);
- Site reconnaissance;
- Evaluation; and,
- Reporting.

This COS is not an environmental compliance audit or review. Findings and conclusions are based solely on the extent of observations and available information gathered during the COS. Hazardous materials, mould, and/or vapour intrusion surveys were not conducted. Sampling and analysis of soil, groundwater, air, or other materials were not conducted as part of this investigation.

2.0 Study Area Description

2.1 Study Area Determination

The COS Study Area includes the "Local Study Areas" of the bridges at each individual site location, as shown on **Figure 1**, as well as a buffer zone to account for contaminant migration and include potential staging areas for alternative construction staging sites, as shown in **Figures 2 to 5**. The buffer zone was extended from the local study areas using the generally accepted industry standard of 250 m and more to include potential staging areas for alternative construction staging sites. The COS Study Area in shown in **Figure 6** (**Appendix A).**

Based on information compiled during records review and site reconnaissance, it was concluded that the study area was sufficient for the purpose of this COS.

2.2 Topography and Drainage

Based on the Ministry of Natural Resources and Forestry (MNRF) topographic mapping web map application and City of Ottawa geoOttawa Interactive Web Mapping Application, the bridge sites are

located at an elevation of approximately 70-72 metres above sea level (masl), with an immediate slope to approximately 65 masl on either bank of the Rideau Canal. The COS Study Area has a gradual slope to the southeast.

Surface water flows through the municipal drainage system (i.e. ditches, culverts and sewers). Regionally, surface water flows through the municipal drainage system to discharge at the nearest water body (i.e. Patterson Creek, the Rideau Canal or Rideau River).

2.1 Physiography

The physiography in the COS Study Area is reportedly limestone plain; drumlinized till plain to the southeast and clay plain to the southwest (Chapman and Putnam, 1984).

2.2 Geology

Surficial geology in the COS Study Area is reportedly glaciomarine and marine deposits from the Pleistocene series of the Quaternary system consisting of silt and clay, basin and quiet water deposits. To the south and east in the vicinity of the canal and river are recent fluvial deposits of the Quaternary system consisting of gravel, sand, silt and clay deposited on modern flood plains. To the west toward Bank Street and east of the Rideau River, surficial geology consists of undifferentiated till, predominantly sandy silt to silt matrix, commonly rich in clasts, and often high in total matrix carbonate content (Barnett, Cowan and Henry, 1991).

Bedrock geology in the COS Study Area is Paleozoic from the Upper Ordovician (to the east) and Middle Ordovician (moving west to Bank Street) periods, reportedly consisting of shale, limestone, dolostone and siltstone/sandstone/arkose (OGS, 1991).

2.3 Hydrology

The study area is located in a highly urbanized downtown area which is serviced by the City of Ottawa municipal water supply (supply source: Ottawa River). Domestic use of private potable water supply wells is not anticipated. Local groundwater flow in the COS Study Area is expected to flow towards the nearest water body (i.e. Patterson Creek, the Rideau Canal or Rideau River). Regionally groundwater flow is inferred to be in the southeasterly direction toward the Rideau River.

3.0 Records Review

3.1 Environmental Reports

The following reports and plans were reviewed as part of the COS:

- Department of Highways of Ontario. Ottawa Queensway, 1962 new construction, Contract 1962-0261. 33 pages.
- Department of Highways of Ontario. Ottawa Queensway, Bridge No. 23 at Elgin Street. 1962 new construction. 13 pages.
- Department of Highways of Ontario. Ottawa Queensway, Bridge No. 24 at Rideau Canal. 1963 new construction. 26 pages.

- Department of Highways of Ontario. Ottawa Queensway, Bridge No. 25 at Main Street. 1962 new construction. 14 pages.
- Department of Highways of Ontario. Ottawa Queensway, Bridge No. 37 at Metcalfe Street. 1962 new construction. 12 pages.
- Department of Highways of Ontario. Ottawa Queensway, Stage IV. 1965. 86 pages.
- DeLCan, De Leuw Cather, Canada Ltd. Elgin Street. 1984 Rehab. 12 pages.
- DeLCan, De Leuw Cather, Canada Ltd. Main Street. 1984 Rehab. 13 pages.
- DeLCan, De Leuw Cather, Canada Ltd. Metcalfe Street. 1984 Rehab. 10 pages.
- DeLCan, De Leuw Cather, Canada Ltd. Rideau Canal Street. 1984 Rehab. 24 pages.
- MTO. Island Park Drive to Nicholas Street (including Elgin Street), Contract 2016-4031. 2016 Rehab. 19 pages.
- TSH, 2007. DRAFT Preliminary Design Report (PDR), Highway 417 (Ottawa Queensway) from Highway 416 Easterly to Anderson Road. Report prepared for Ministry of Transportation. October 2007.
- TSH, 2007. Transportation Environmental Study Report (TESR), Highway 417 (Ottawa Queensway) from Highway 416 Easterly to Anderson Road. Report prepared for Ministry of Transportation. January 2007.

The following information was obtained from the above reports and plans:

- The land use as per the 2007 TESR and PDR was reportedly:
  - Along the north side of Highway 417 easterly from Bronson Avenue to Rideau Canal, land uses include storage/office buildings, a grocery store, a car rental, a car wash, the inter-city bus terminal on Catherine Street, the YMCA and the City of Ottawa police department headquarters at Catherine and Elgin Street. An apartment building complex and a green space are located between Elgin Street and the Rideau Canal.
  - Along the south side of Highway 417 east of Lyon Street to Rideau Canal, land use becomes mixed with residential and commercial/retail businesses.
  - A strip of green space including a pedestrian/cyclist trail borders both sides of the Rideau Canal.
  - North of Highway 417 east of the Rideau Canal is occupied by a residential neighbourhood. The Sandy Hill Arena is located east of Nicholas Street and the East Transitway, and a residential neighbourhood is located just east of Lees Avenue.
  - South of Highway 417 east of the Rideau Canal, land uses consist of a residential neighbourhood with a vegetative buffer zone in some areas.
- With respect to contaminated property and waste management, the 2007 TESR and PDR note there are numerous sites adjacent to Highway 417 within the project limits with a high probability of contamination as a result of historic or ongoing uses, such as gasoline storage or manufacturing. Furthermore, there is the potential for subsurface contamination within the Highway 417 right-of-way due to the former use of portions of the corridor as a railway corridor. The proposed work is largely contained with the existing highway right-of-way. However, the Recommended Design does require the acquisition of property at several locations. Prior to property acquisition, a Phase 1 Environmental Site Assessment (ESA) should be completed for

each property to determine the potential for soil contamination. Additional work will be undertaken as needed in accordance with established procedures.

- The Fisheries and Aquatic Ecosystem Technical report, Appendix F of the TESR, indicated the Rideau Canal is a warmwater fish habitat, with a variety of reported species. The Canal was approximately 30 m wide and on average 3 m deep with a hardened shore, sand, silt substrates, and heavily vegetated.
- The Drainage Report – Existing Conditions, Appendix I of the TESR, indicated that the topography of the area is flat to gentle sloping, draining to the existing City of Ottawa storm and combined sewer systems. Connections also reportedly exist between the Queensway internal drainage system and the municipal sewage systems. The storm sewer systems contribute to storm water flows collected by the City sewer systems or discharge to the Rideau River, Rideau Canal or the Ottawa River.
- The Drainage Report – Existing Conditions and Drainage Structures Inventory, Appendix I of the TESR, was a high level review and did not have any indication of hazardous materials.
- The Air Quality Assessment Report, Appendix M of the TESR, indicated that historical levels of CO, NO2, formaldehyde and acetaldehyde were well below their respective guidelines, no guidelines existed for remaining volatile organic compounds of interest (i.e. benzene), and modelling of existing and future conditions predicted an unnoticeable and insignificant impact from highway widening.
- The Electrical Systems Report – Existing Conditions, Appendix O of the TESR, did not note any items of concern.
- Queensway 1962 drawings, Contract 1962-0261:
    - Sheet 1, Schedule of Quantities: 4,600 linear feet of 4” diameter asbestos cement conduit was to be placed.
    - Sheet 15, Drainage and Utilities, Metcalfe Street: new 4” diameter asbestos cement conduit for lighting and traffic signals on the north and south sides of the Metcalfe overpass from Isabella Street to Argyle Avenue; bridge conduits to be tied into 4” asbestos cement ducts at hand hole in sidewalk on west side of overpass.
    - Sheet 16, Drainage and Sub-drainage, New Elgin Street: new 4” diameter asbestos cement conduit for lighting and traffic signals on the north and south sides of the Elgin overpass from Isabella Street to north of Catherine Street; bridge conduits to be tied into 4” asbestos cement ducts at hand hole in sidewalk on west side of overpass.
    - Sheet 22, Miscellaneous Details: detail of location of lighting duct handholes, with 4” asbestos cement ducts coming from north, south and east.
- Bridge at Metcalfe Street:
    - 1962 drawings:
        - Sheets 3, 4, 5 and 10: 2 ½” diameter transite conduits, in north and south curbs, some specifically noted for lighting.
        - Sheets 5, 6, 7 and 8: 3-4” transite ducts on west side of overpass and drains on the walls.
    - 1965 drawings:

        - Sheet 65: 2 ½” diameter asbestos cement conduit to be placed at the Metcalfe bridge.
    - 1984 drawings:
        - Sheet 314: Existing electrical conduit in coping and hydro ducts in north deck to be filled with an expanding cement grout. The existing electrical concuit appears to be the 2 ½” transite duct for lighting.
- Bridge at Elgin Street:
    - 1962 drawings:
        - Sheets 3, 4, 5, 6, 7, 8, 9 and 11: 2 ½” diameter transite conduits, in north and south curbs, to be extended past retaining walls, some specifically noted for lighting.
        - Sheets 5, 6, 7, 8, 9 and 11: 3-4” transite conduit on north side of overpass, to be extended past abutments for Ottawa Hydro and drains on the walls.
        - Sheet 11: 2 ½” diameter transite expansion couplings along the transite conduit through expansion joints.
    - 1965 drawings:
        - Sheet 65: 2 ½” diameter asbestos cement conduit existing at the Elgin bridge.
    - 1984 drawings:
        - Sheet 326: Existing electrical conduit in coping and hydro ducts in north deck to be filled with an expanding cement grout. The existing electrical concuit appears to be the 2 ½” transite duct for lighting.
    - 2016 drawings: Contract 2016-4031: One drawing, Elgin Street Overpass Rehabilitation General Arrangement dated May 2016, indicates a 3-4” transite conduit for Ottawa Hydro below grade on the westbound off-ramp.
- Bridge at Rideau Canal Street:
    - 1962 drawings:
        - Sheets 22: 2 ½” diameter asbestos cement electrical conduits, in north and south curbs, and asbestos cement terminal box.
        - Sheets 5: 4” asbestos cement and drains on the walls.
        - Sheets 10, 11, 15, 18: 2 ½” diameter asbestos cement conduit with asbestos cement expansion couplings along the through expansion joints.
    - 1965 drawings:
        - Sheets 64 and 74: 4” diameter asbestos cement conduit for lighting at the Rideau Canal bridge and cable crossing detail
        - Sheet 66: 2 ½” diameter asbestos cement conduit existing at the Rideau Canal bridge.
    - 1984 drawings:
        - Sheet 352: Existing electrical conduit in coping and hydro ducts in north deck to be filled with an expanding cement grout. The existing electrical concuit appears to be the 2 ½” transite duct for lighting.
- Bridge at Main Street:
    - 1962 drawings:

- Sheets 3, 4, 5 and 6: 2 ½" diameter transite conduits, in north and south curbs, to be extended past retaining walls, some specifically noted for lighting.
- Sheets 7, 8 and 9: 4" drains on the walls.

- 1965 drawings:
  - Sheets 66: 2 ½" diameter asbestos cement conduit to be placed at the Main bridge.
- 1984 drawings:
  - Sheet 352: Existing electrical conduit in coping and hydro ducts in north deck to be filled with an expanding cement grout. The existing electrical concuit appears to be the 2 ½" transite duct for lighting.

3.2 Aerial Photographs

Aerial photographs from the City of Ottawa GeoOttawa Interactive Mapping System were reviewed for the years 1928, 1958, 1965, 1976, 1991, 2002 and 2011. Aerial photographs at the National Air Photo Library (NAPL) were also reviewed for additional details at full scale resolution for the years 1928, 1933, 1947, 1954, 1965 and 1967. Selected aerial photographs from the City of Ottawa GeoOttawa Interactive Mapping System are provided in **Appendix C**. Based on the review, the following observations were made:

Year	Bridge Sites	Northeast	Southeast	Southwest	Northwest
1928 GeoOttawa and A18-51 & 52 1:5000	• The land between Isabella and Catherine Streets is a rail yard with railway lines and numerous buildings. • The lines west of the canal, merge into a single main line crossing the Rideau Canal. The single main line splits more lines east of the canal. • There are no crossings over the rail lines/yard but the rail lines have a double line above grade crossing Driveway and a level crossing at Main Street.	• The land is fully developed. Land use appears to be residential/ commercial. • The coal tar and coal gasification plants at Lees Avenue are present. • The canal wall is present along the northeast side of the canal.	• The land is largely developed with mixed uses. • The coal shed is visible west of Ballantyne Park and the building for the south service station appears to be present to the east. • An area of disturbed soil is visible at St. Paul University south of the building, which may correspond to the potential waste disposal site. • The canal wall is not present along the southeast side of the canal.	• The land is fully developed. Land use appears to be residential/ commercial. • The canal wall is present along the southwest side of the canal.	• The land is fully developed with mixed uses (residential, commercial, and industrial). • The property southeast of the intersection of Elgin St and Argyle Ave (for the northern service station) has been developed. • A single structure appears to be present in the remainder of the bottom of the Golden Triangle. • The canal wall is present along the northwest side of the canal.
1933 A4570-62 1:6000	• The area remains in similar configuration.	• The area remains in similar configuration.	• The canal wall along the southeast side of the canal is now present (the canal narrows between bridges, widens south of southern (Pretoria Avenue) bridge.	• The area remains in similar configuration.	• The buildings of the northern service station have been redeveloped but there appear to be 4 pump islands.
1947 A10903-84 1:6000	• The area remains in similar configuration.	• The area remains in similar configuration.	• The area remains in similar configuration.	• A roundabout is present W of the southern (Pretoria Avenue) bridge.	• The southern portion of the Golden Triangle (east of the northern service station) has been developed as commercial/ industrial (with 6+ buildings).
1954 A13986-35 1:6000	• The area remains in similar configuration.	• Trees have been planted along canal and bridges.	• There appears to be a pump island northeast of the building at the southern service station. • Trees have been planted along canal and bridges.	• Trees have been planted along canal and bridges.	• The southern portion of golden triangle has been redeveloped/ finished construction (3 connected buildings). • Trees have been planted along canal and bridges.
1958 GeoOttawa	• The works yards buildings have been removed and the land is being used for parking cars. Rail lines and trains are still visible.	• The area remains in similar configuration.	• The area of disturbed soil at St. Paul University is no longer present and the land appears to have been landscaped. • The land south of Graham Avenue has been developed, for what appears to be commercial use. • The property northeast of Main Street and Springhurst Avenue appears to have been redeveloped as a service station with two (2) pump islands.	• The area remains in similar configuration.	• There appear to be two (2) pump islands at the northern service station.
1965 GeoOttawa and A18743-5 1:15000	• All rail lines have been removed. • Construction is underway on overpasses (O'Connor, Metcalfe and Elgin Streets) west of the canal and roads have been constructed to connect the north and south portions of the roads. • The Queensway has been constructed from the west to O'Connor Street. • The Rideau Canal rail crossing has been removed, the central footing/pier is not visible. • The Canal crossing is under construction (spanning canal, beams and footings only). • East of canal the overpass at Main has been constructed. • Lands are cleared for the Queensway and the interchange east of Main Street.	• The area remains in similar configuration.	• The coal yard has been removed. • The canal appears to have been widened on the east, from the southern (Pretoria Avenue) bridge to north of the former rail crossing.	• Driveway crossing has been removed, roads rerouted.	• Driveway crossing has been removed, roads rerouted.

Year	Bridge Sites	Northeast	Southeast	Southwest	Northwest
1967 A30041-61 & 62 1:3000	• Full construction of bridges and Queensway (2 lanes) appears to be complete. • Landscaping around Queensway with trees.	• The area remains in similar configuration.	• Mottled asphalt appears northeast of the southern service station building (UST and/or pump possibly removed).	• The area remains in similar configuration.	• Golden Triangle northern service station has been redeveloped (pumps appear to have been removed).
1976 GeoOttawa	• The area remains in similar configuration.	• The property which had the northern service station has been redeveloped again into a large residential/ commercial building. • A large building northwest of Catherine and Elgin Streets has been removed and replaced with parking. • The coal tar and coal gasification plants at Lees Avenue have been removed.	• The area remains in similar configuration.	• The area remains in similar configuration.	• The area remains in similar configuration.
1991 GeoOttawa	• The area remains in similar configuration.	• The parking lot northwest of Catherine and Elgin Streets redeveloped into three (3) large residential/ commercial buildings.	• The area remains in similar configuration.	• The area remains in similar configuration.	• The area remains in similar configuration.
2002 GeoOttawa	• The area remains in similar configuration.	• The area remains in similar configuration.	• Buildings west of potential staging site M-3 have been restructured. • The property northeast of Main Street and Springhurst Avenue appears to have been decommissioned.	• The area remains in similar configuration.	• The area remains in similar configuration.
2011 GeoOttawa	• The area remains in similar configuration.	• The area remains in similar configuration.	• The area remains in similar configuration.	• The area remains in similar configuration.	• The area remains in similar configuration.

3.3 Fire Insurance Plans

A search was conducted at the National Archives in Ottawa, Ontario for fire insurance plans available for the COS Study Area. Based on the review, the following observations were made:

Year	Bridge Sites	Northeast	Southeast	Southwest	Northwest
1902 (revised 1912) Fire Insurance Plan (Vol. 1 Sheets 71 & 75; Vol.2 Sheet 159)	• The land between Isabella and Catherine Streets is shown as Grand Trunk Railway. • Located in the vicinity of Metcalfe Street are the Grand Trunk Railway rail yard lines and spurs (14) and building for various purposes (coal bins, woodworking machinery, car building shops, scrap sheds, stores • Six (6) lines are shown west of the canal, merging into a single main line crossing the Rideau Canal. • The single main line splits into four (4) lines east of the canal.	• North of the rail lines, east of the canal is mixed residential and commercial.	• A wood and iron swing bridge is shown extending northwest from Harvey Street. • South of the rail lines, east of the canal and west of Main Street is a small residential area at the west end of Hawthorne, a large coal shed north of the residences and the remaining area is largely undeveloped with a single residence. • South of the rail lines, east of Main Street is mixed commercial and residential, including a public school.	• South of the rail lines, west of the canal is mixed residential, commercial and industrial.	• North of the rail lines, west of the canal is mixed residential, commercial and industrial. • The road along the west of the canal is labelled Driveway and land between Driveway and the canal is labelled as gardens. • The south end of the Golden Triangle (south of Argyle Avenue) is undeveloped.
1963 (1956) Fire Insurance Plan (Vol. 1 Sheets 125-2, 137-4, 137-5)	• The land between Isabella and Catherine Streets is shown as rail lines and cattle.	• No significant changes observed.	• South of the rail lines, east of the canal and west of Main Street are residential houses along Hawthorne (to Ballantyne Park) and a coal yard north of the houses. The single residence has been redeveloped as the southern service station with a single UST shown adjacent to the east of the building.	• No significant changes observed.	• The south end of the Golden Triangle (north of Elgin and Driveway) is identified as apartments to the east and a service station to the east with one building and three (3) USTs adjacent to the west of the service station.

3.4 Public and Private Databases

National Pollutant Release Inventory – Environment Canada

A search of the National Pollutant Release Inventory (NPRI, 2016) was conducted. Based on available information, no listings were identified for the COS Study Area.

PCB – Ontario

A search of the Ontario Inventory of PCB Storage Sites (MOE, 1995) was conducted. Based on available information, no listings were identified for the COS Study Area.

Certificates of Approval – Ontario

A search of the Ministry of the Environment and Climate Change (MOECC) Access Environment was conducted. This tool provides detailed information regarding environmental approvals and registrations including: Environmental Compliance Approvals (ECA), Renewable Energy Approvals (REA), Environmental Activity and Sector Registry (EASR) registrations and Certificates of Approval (replaced by Environmental Compliance Approvals in 2011). Based on available information, three (3) properties with EASR registrations and 11 properties with ECA listings were identified for the COS Study Area.

Of the available environmental records, those containing information of environmental concern are noted below:

- 150 Argyle Avenue - ECA for Waste Disposal Sites, approval number 1407-9UCU52 dated March 6, 2015 for LRC Development Team Test Client. No further information was available for the record, however the property was found to be a historic apartment building.

Inventories of Coal Gasification Plants and Coal Tar Sites – Ontario

A search of the Inventory of Coal Gasification Plant Waste Sites (MOE, 1987) and the Inventory of Industrial Sites Producing or Using Coal Tar and Related Tars (MOEE, 1988) in Ontario was conducted. Based on available information, no listings were identified for the COS Study Area. Listings were noted for properties located approximately 680 m east of the intersection of Hawthorne Avenue and Main Street:

- Hamilton Tar Products & Currie Products which operated from approximately 1922-1948 at 170 Lees Avenue (MOEE, 1988) and;
- A manufactured gas plant site which operated from approximately 1920-1957 at 175 Lees Avenue (MOE, 1987).

Extensive investigation, monitoring and remediation of these sites has reportedly been conducted. A hydrogeologic study of the area prior to remediation (Intera, 1987) indicates that contaminant migration is to the east, toward the Rideau River, and therefore is of low environmental concern to the COS Study Area.

Ontario Ministry of Environment (MOE) Freedom of Information (FOI) Request

No requests were submitted to the Ministry of the Environment and Climate Change (MOECC) Freedom of Information (FOI) office as part of this study. Should land acquisition become necessary, MOECC FOI requests should be submitted for each property to inquire if there are any files of environmental concerns, orders, spills, investigations/prosecutions, waste generation or Certificates of Approval on record.

Federal Contaminated Sites Inventory (FCSI)

The FCSI includes information on all known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government. The FCSI displays a standard set of basic and annually-updated information for federal contaminated sites. Each site record includes information such as the location of the site, the severity of contamination, the contaminated medium, the nature of the contaminant, progress made to date in identifying and addressing contamination, and how much liquid and solid-based media have been treated.

A search of the FCSI identified one (1) listing for the COS Study Area:

- Site 00022846 - Nicholas and Queensway. A 5 hectare site adjacent to the east of Harvey Street. Soil contamination of PAHs (polycyclic aromatic hydrocarbons) and metal, metalloid, and organometallic compounds was identified at the site.

The hydrogeologic study of the area southeast of this site (Intera, 1987) indicates that this property was a Canadian National Railways workshop.

Waste Management Records

A search of the MOECC Hazardous Waste Information System database was conducted. This network includes registered hazardous waste generators, carriers, and receivers. Numerous listings were identified for the COS Study Area; however, based on professional judgement; one (1) was noted of particular interest:

- Canadian Museum of Nature located at 240 McLeod Street is registered for numerous waste classes (331 L, 146 L, 212 I, 112 C, 121 C, 146 R, 146 C, 212 L, 252 L, 145 T, 263 I, 263 L, 148 C, 122 C, 221 I, 251 L) and located directly up-gradient of multiple bridge sites. However, it is also noted that this is a federal property which was not identified as a contaminated site in the FCSI.

Technical Standards and Safety Authority (TSSA)

A request was submitted to the Technical Standards and Safety Authority (TSSA) to search their electronic database for selected properties in the COS Study Area. The TSSA database includes records pertaining to current and historical sites with registered underground storage tanks dating from 1987 to present. The following municipal addresses were provided:

- 58 Main Street
- 467 Elgin Street

A response from the TSSA has not been received at the time of reporting. If a response is received indicating environmental records containing pertinent information of environmental concern, the client will be contacted.

MOE Brownfields Environmental Site Registry

A search of the Ministry of the Environment and Climate Change (MOECC) Brownfields Environmental Site Registry was conducted. This registry contains records of site condition and transition notices filed in the Environmental Site Registry since October 1, 2004. Based on available information, two (2) listings were identified for the COS Study Area.

- RSC 56515 - 424 Metcalfe St, Ottawa, ON, K2P 2C3
- RSC 36502 - 129 Main St, Ottawa, ON, K1S 1B9

Ontario Ministry of Natural Resources

A search of the Ontario Ministry of Natural Resources and Forestry (MNRF) natural heritage web application was conducted. The search did not identify any provincially significant wetlands or areas of natural or scientific significance for the Phase I Study Area.

MOE Waste Disposal Site Inventory

A review of the Waste Disposal Site Inventory in Ontario (MOE, 1991) was conducted. This document contains all known active and closed waste disposal sites in the province of Ontario as of October 31, 1990. Based on available information, the following listings were identified for within 1 km of the bridge sites:

- A municipal coal gasification plant site which operated from approximately 1920-1957 at Lees Avenue. This listing corresponds to the site identified at 175 Lees Avenue approximately 680 m east of the intersection of Hawthorne Avenue and Main Street (MOE, 1987)
- A waste disposal site located at Lees Avenue (Algonquin College) which closed in 1947. This appears to correspond to the Landfill 12, Lees Avenue near Hurdman Bridge (Intera, 1988).
- A waste disposal site located west of Bank Street (Central Park) which closed in 1920. This appears to correspond to the Landfill 22, Central Park (Intera, 1988).

- A waste disposal site located at St. Paul University which closed in 1938. This appears to correspond to the Oblates property with a current municipal address of 175 Main Street, Ottawa.

MOE Small and Large Landfills

A search of the MOE Small Landfills Site List was conducted on July 4, 2017. This list contains records of small landfills in Ontario that includes open/closed status, site owner, site location, and Certificate of Approval number. Based on available information no listings were identified within 1 km of the bridge sites.

A search of the MOE Large Landfills Map was conducted on July 4, 2017. This map contains records of large landfills in Ontario that includes site location, name and Certificate of Approval number. Based on available information, no listings were identified within 1 km of the bridge sites.

Intera Mapping and Assessment of Former Industrial Sites, City of Ottawa

A review of the Intera Technologies Ltd. report of Mapping and Assessment of Former Industrial Sites in the City of Ottawa (Intera, 1988) was conducted. This report describes an inventory and assessment study of former industrial sites active in the City of Ottawa from 1850 to 1984 that likely produced or handled hazardous wastes and materials.

Based on available information, the following listings for industrial sites were identified for the COS Study Area:

- ID 29: Bannerman and Findlater Boiler Works, Isabella and Elgin. Assessed as no potential for environmental impact.
- ID 30: Ottawa Porcelain and Carbon Co., southeast corner of Isabella and Metcalfe Streets. Assessed as low potential for environmental impact.
- ID 31: Dominion Loose Leaf Co. Ltd. Printers, southeast corner of Isabella and Metcalfe Streets. Assessed as no potential for environmental impact.
- ID 33: Samuel Rogers Oil Co., northeast corner Chamberlain and Bank Streets. Assessed as low potential for environmental impact.
- ID 34: Grand Trunk/Canadian National Railways Workshops, 104-118 Catherine Street. Assessed as low potential for environmental impact.
- ID 35: National Printers Ltd., 439-443 O'Connor. Assessed as no potential for environmental impact.
- ID 135: Canadian Atlantic Railway Engineers' Shop, southwest corner Argyle and Cartier adjacent to canal. Assessed as low potential for environmental impact.

Based on available information, the following listings for landfill sites were identified within 1 km of the bridge sites:

- Landfill 12: Lees Avenue (near Hurdman Bridge)
- Landfill 22: Central Park

- Landfill 28: Lees Avenue (west of Currie Products Ltd.)
- Landfill 36: North of Lees Avenue, Lot 6, Concession D

3.5 Local Media

The following media articles were reviewed as part of the COS:

- CBC News, 2017. Parks Canada orders tests on Rideau Canal after contaminants found. April 6, 2017.
- Main Streeter, 2017. Crows, Snow and So Much More. February 2017.
- Ottawa East Community Association, 2017. Q&A about soil remediation work at Old Town Hall. July 18, 2014.
- Ottawa Sun, 2016. Ottawa council to consider record $15.8M brownfield grant request. March 30, 2016.

Based on available information, the following information of environmental concern was identified within the COS Study Area:

- 61 Main Street: The City of Ottawa has conducted several environmental investigations to characterize soil and groundwater quality at the site. The site assessments identified elevated levels of several polycyclic aromatic hydrocarbons (PAHs) in surface and subsurface fill material at concentrations exceeding the Ontario Ministry of the Environment (MOE) 2011 Table 3 Site Condition Standards for residential/parkland/institutional land use and coarse textured soil. In 2014, a remedial program was conducted to remove of all exposed shallow soil to a depth of 30 cm across the site, and replace with a non-woven geotextile layer and cap of clean soil/grass or playground sand. Subsequent soil remediation is being undertaken in 2017. Contamination was indicated to only present a human health concern if dermal contact or ingestion of the soil occurs.
- 175 Main Street: The former Oblates land along the Rideau River contained approximately 215,000 tonnes of contaminated soil. The contamination on the property dates back 100 years. Previous soil investigations indicated contamination from offsite fill, plus coal and ash spread across the site from an onsite furnace. Due to the depth of contamination, remediation would also include treatment of polluted groundwater.
- Rideau Canal: In fall 2016 workers disturbed sediment in the canal. Analysis indicated the presence of heavy metals, such as lead and cadmium, as well as polycyclic aromatic hydrocarbons. Parks Canada subsequently initiated a sampling program to identify the scope and extent of contaminants within the stretch of the Rideau Canal in downtown Ottawa. Potential sources of contamination were attributed to historical industrial activity on both banks, including a paint factory and regular train traffic, as well as steam-powered vessels hauling industrial goods. The Rideau Canal in the vicinity of the project site is not presently listed in the FCSI. Contamination was indicated to only present a human health concern if dermal contact or ingestion of the soil occurs.

4.0 Study Area Reconnaissance

Site reconnaissance was conducted of the site, adjacent properties and Study Area on May 9, 2017. Site reconnaissance consisted of a drive-by visual inspection from publicly accessible areas (i.e. roadways) for visual indicators of actual of potential contamination within the study area. Specific observations are provided below. Photographs and descriptions are provided in Appendix B.

Name/Address	Observation	Potential Risk Level (High, Medium, Low)	Nearest Site Area(s) (Bridge or Staging Area)
58 Main Street, Former Southern Service Station	Former service station building, original pump island appears to remain with decorative pumps in place.	Medium	Main Street

5.0 Key Findings

Based on land use information obtained as part of the COS, the COS Study Area has been developed with a variety of land uses, including commercial and industrial, in an urban core area. Commercial/industrial properties may present a variety of potential sources of soil and/or groundwater contamination that have not been reported as part of this high level COS. Descriptions of noted properties of environmental concern within the COS Study Area are provided below. Properties of medium/high environmental concern are shown in **Figure 6**.

Property	Year(s)	Property Use	Indicators of Environmental Concern	Relative Potential for Soil and/or Groundwater Contamination	Nearest Bridge Sites	Nearest Potential Staging Areas
Rideau Canal UNESCO World Heritage Site	Crown to Present	Waterbody	Reported sediment contamination of heavy metals, such as lead and cadmium, as well as PAHs; Historical industrial activity on both banks; and well vessels hauling industrial goods	High	Rideau Canal	E1 (E1-e), M1
Queensway	Prior to 1902 to early 1960s	Grand Trunk Railway rail yard lines and spurs (14) and buildings for various purposes (coal bins, woodworking machinery, car building shops, scrap sheds, stores)	Reported soil contamination in the vicinity	Medium	Metcalfe Elgin	E1 (E1-e), E2, E3, E4
Queensway	Prior to 1902 to early 1960s	Rail lines	Reported soil contamination in the vicinity	Medium	Rideau Canal Main	M1, M4, M5, M6
Property north of Ballantyne Park	Prior to 1902 to early 1960s	Vacant land, MTO road allowance	Rail spur and coal shed	Medium	Rideau Canal Main	M1
58 Main Street	Prior to 1954 to late 1960s	Commercial	Former service station, one (1) UST adjacent to the east of the building	Medium	Main	M1
467 Elgin Street	Prior to 1928 to late 1960s	Residential	Service station, pump islands, three (3) USTs adjacent to the west of the service station	Medium	Elgin Rideau Canal	E1 (E1-e)
Queensway	Early 1960s to present	Community (Road)	Potential imported fill of poor quality, fuel impacts, asbestos construction Materials	Low	Metcalfe Elgin Rideau Canal Main	E1 (E1-e), E2, E3, E4, M1, M4, M5, M6
Nicholas and Queensway, adjacent to the east of Harvey Street	Prior to 1928 to early 1960s	Vacant	A 5 hectare former site to a Canadian National Railways workshop adjacent to the east of Harvey Street. Soil contamination of PAHs and metal, metalloid, and organometallic compounds were identified at the site.	Low	Main	M5
170 Lees Avenue	1922 to 1948	Hamilton Tar Products & Currie Products	Coal Tar Site	Low	Main	M4, M5
175 Lees Avenue	1920 to 1957	Manufactured gas plant site	Coal Gasification Plant	Low	Main	M4, M5
Lees Avenue near Hurdman Bridge	Unknown to 1947	Residential, Transit Oriented Development Zone	Landfill/waste disposal site located at Lees Avenue (Algonquin College)	Low	Main	M4, M5
150 Argyle Avenue	2015	Apartment building	ECA for Waste Disposal Sites	Low	Metcalfe	E3
St Paul University/ Oblates, 175 Main Street, Ottawa	Prior to 1928 to 1938	Unknown	Waste disposal site, approximately 215,000 tonnes of contaminated soil from offsite fill, plus coal and ash spread across the site from an onsite furnace	Low	Main	M3
129 Main Street	Prior to 1958 to Post 2002	Vacant	Former PetroCanada Service Station, soil remediation completed, no known offsite contamination	Low	Main	M3
464 Metcalfe Street	Residential	Vacant	Former Beaver Barracks Site, soil remediation completed, no known offsite contamination	Low	Metcalfe	E3
West of Bank Street (Central Park)	Unknown to 1920	Parkland	Landfill/waste disposal site	Low	Metcalfe	E3, E4
Lees Avenue (west of Currie Products Ltd.)	Unknown	Open Space	Landfill	Low	Main	M4, M5
North of Lees Avenue, Lot 6, Concession D	Unknown	Residential, Development Reserve	Landfill 36	Low	Main	M4, M5
61 Main Street	Unknown	Old Town Hall Community Centre	Known PAH soil contamination	Low	Main	M4

6.0 Conclusions

BT Engineering Inc. (BTE) was retained by the Ministry of Transportation (MTO) to conduct a Contamination Overview Study (COS) as part of the Class Environmental Assessment for Provincial Transportation Facilities (MTO Class EA) for the rehabilitation or replacement of seven (7) bridges (at four locations) on the Ottawa Queensway (Highway 417) from Metcalfe Street to Main Street. The COS is a high level assessment of properties/areas with potential for environmental concern, there is no warranty, expressed or implied, that the COS has reported all areas of potential environmental concern within the study area. Conclusions are drawn from available information at the time of reporting. Information not reviewed/available could affect the validity of the conclusions.

Six (6) sources of medium or high potential environmental contamination were identified for the COS Study Area which could impact the rehabilitation or replacement of seven bridges (at four locations). Based on available information, it is our recommendation that a Soils Management Plan be developed for construction and/or a Phase II ESA be considered for additional soil and/or groundwater investigation once the bridge management plans for the seven Queensway bridges are developed.

Tina Stone, P. Eng.

Project Engineer

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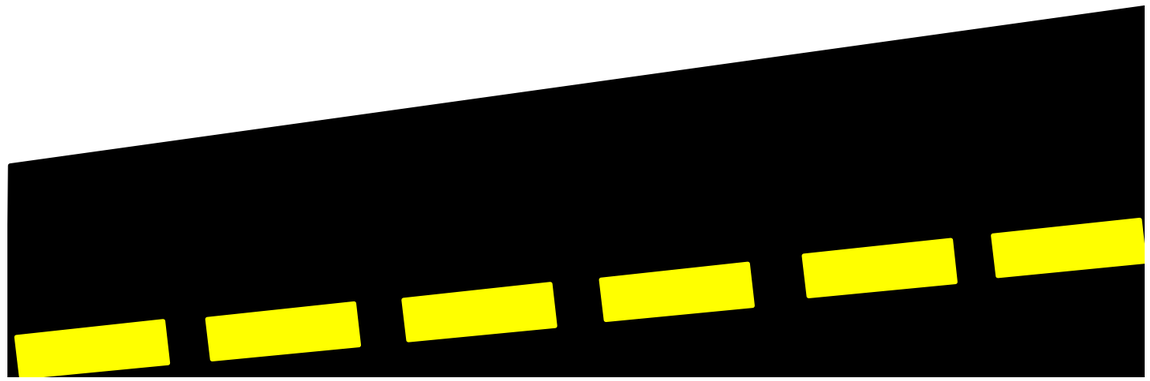
Appendix A
Figures



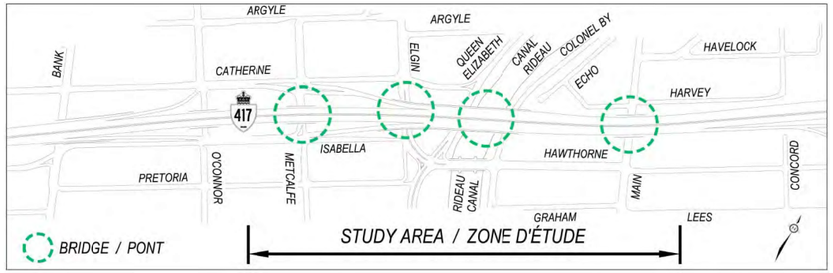


Figure 1: Study Area

Queensway Downtown Bridges, Ministry of Transportation
Contamination Overview Study

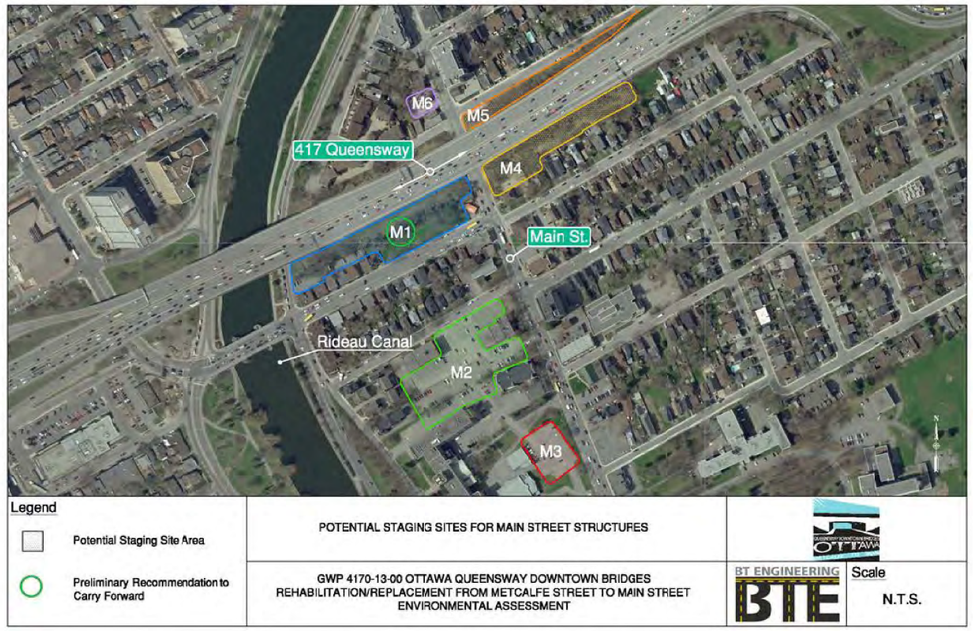


Figure 2: Potential Staging Sites for Main Street Structures

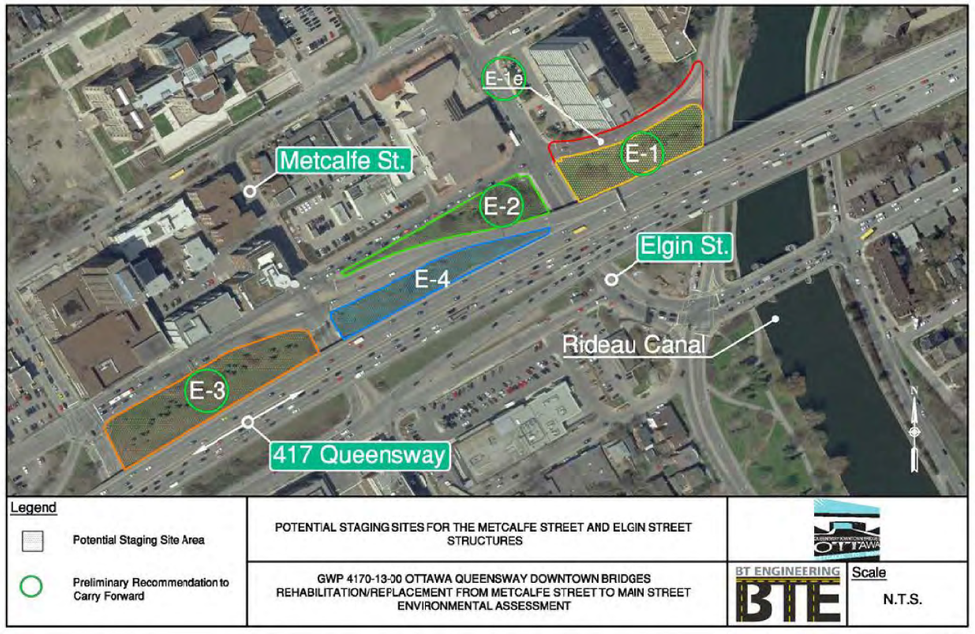


Figure 3: Potential Staging Sites for the Metcalfe and Elgin Street Structures

Queensway Downtown Bridges, Ministry of Transportation
Contamination Overview Study

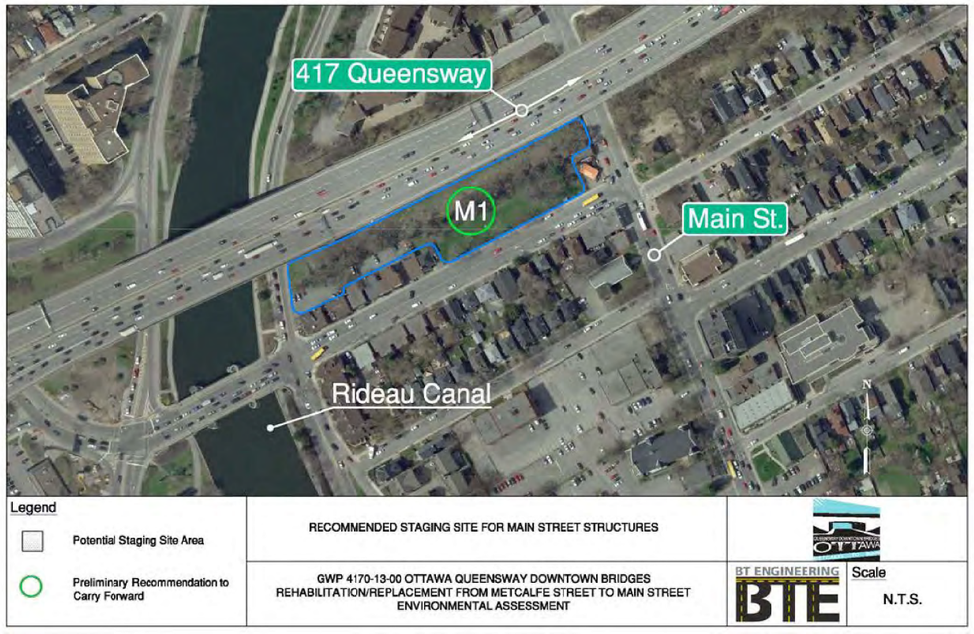


Figure 4: Recommended Staging Site for Main Street Structures

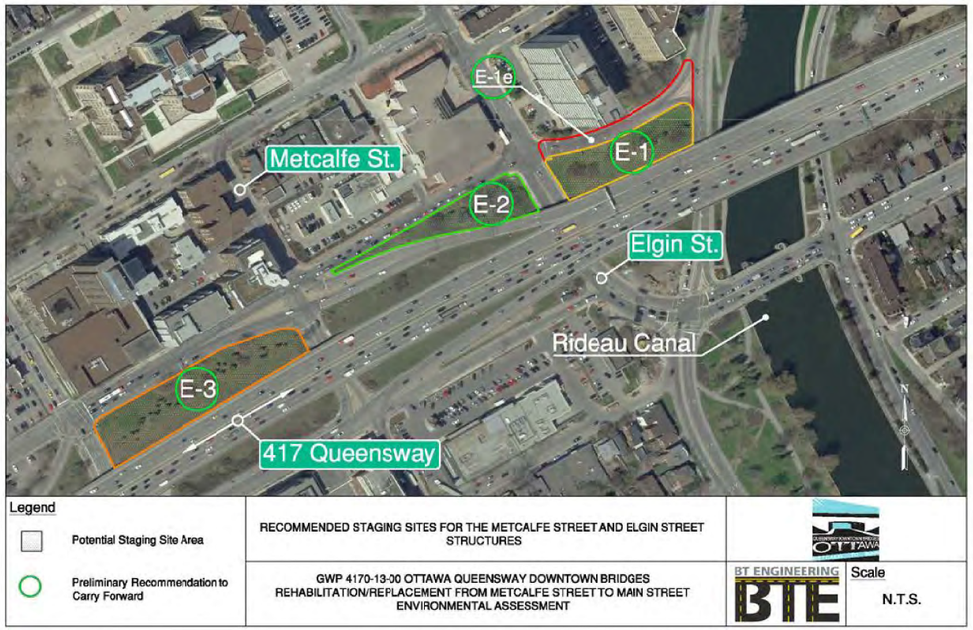
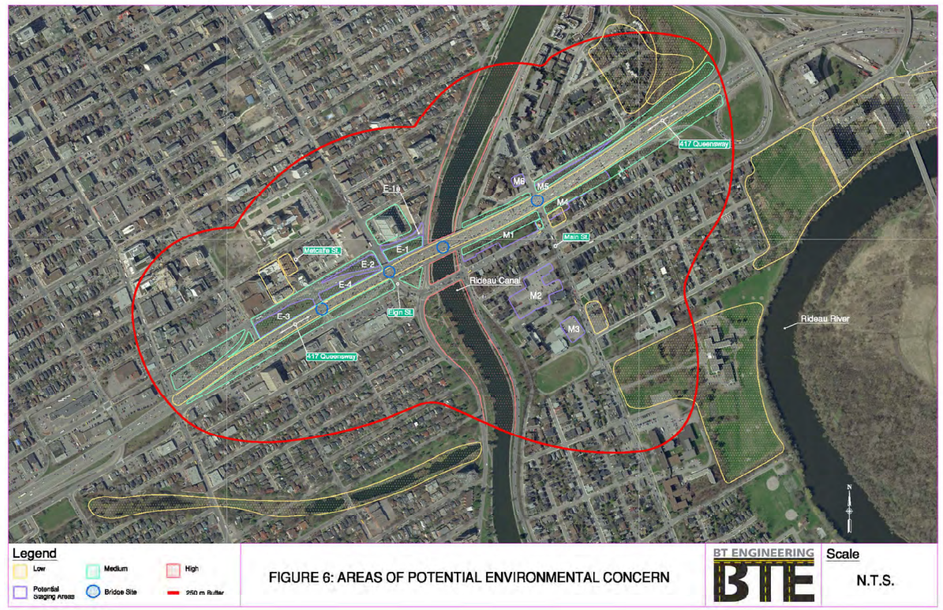


Figure 5: Recommended Staging Sites for the Metcalfe Street and Elgin Street Structures



Appendix B – Study Area Photographs



Photo 1: Former Service Station, 58 Main Street, view northwest

Appendix C – Aerial Photographs

1928 Aerial



July 18, 2017

1:16,315

0 0.2 0.4 0.8 mi

0 0.325 0.65 1.3 km

© 2017 City of Ottawa © 2017 Teranet

1958 Aerial



July 18, 2017

1:16,315

0 0.2 0.4 0.8 mi

0 0.325 0.65 1.3 km

City of Ottawa

© 2017 City of Ottawa © 2017 Teranet

1965 Aerial



July 18, 2017

1:16,315

0 0.2 0.4 0.8 mi

0 0.325 0.65 1.3 km

City of Ottawa

© 2017 City of Ottawa © 2017 Teranet

1976 Aerial



July 18, 2017

1:16,315

0 0.2 0.4 0.8 mi

0 0.325 0.65 1.3 km

City of Ottawa

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1991 Aerial



July 18, 2017

1:16,315

0 0.2 0.4 0.8 mi

0 0.325 0.65 1.3 km

City of Ottawa

© 2017 City of Ottawa © 2017 Teranet

2002 Aerial



July 18, 2017

1:16,315

0 0.2 0.4 0.8 mi
0 0.325 0.65 1.3 km

City of Ottawa

© 2017 City of Ottawa © 2017 Teranet

2011 Aerial



July 18, 2017

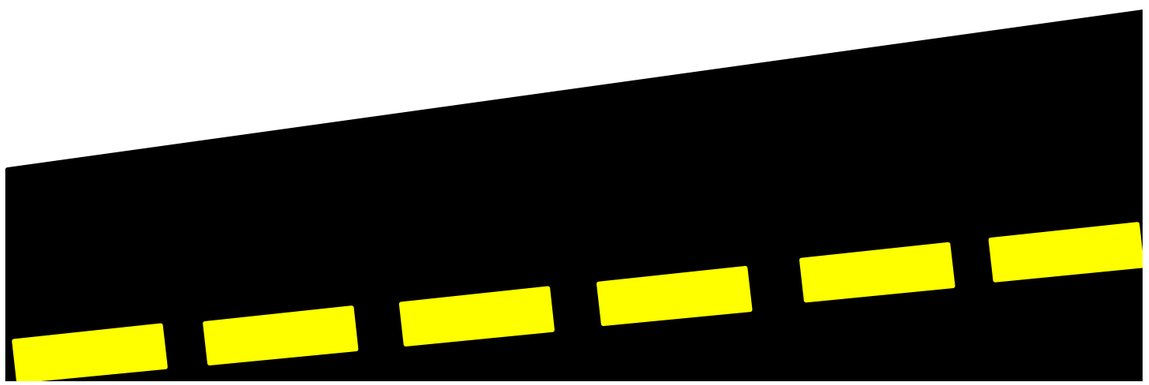
1:16,315

0 0.2 0.4 0.8 mi
0 0.325 0.65 1.3 km

City of Ottawa

© 2017 City of Ottawa © 2017 Teranet

Appendix E
Source Water Protection – Source Protection Plan Memorandum



BT ENGINEERING
100 Craig Henry Drive, Suite 201
Ottawa, Ontario K2G 5W3

MEMORANDUM

TO:	David Lindensmith	**DATE:**	July 18, 2017
FROM:	Tina Stone	**PROJECT #:**	17-010
PROJECT:	GWP 4170-13-00 Queensway Downtown Bridges from Metcalfe Street to Main Street Environmental Assessment and Preliminary Design		
SUBJECT:	Source Water Protection – Source Protection Plan		

Initiated by MTO in April 2017, the Queensway Downtown Bridges project involves an environmental assessment and preliminary design for the rehabilitation/replacement of 7 structures at 4 sites on Highway 417 (Queensway) within the urban core of the City of Ottawa. The Study Area and bridge sites on Highway 417 extend from Metcalfe Street to Main Street and are illustrated on **Figure 1**.

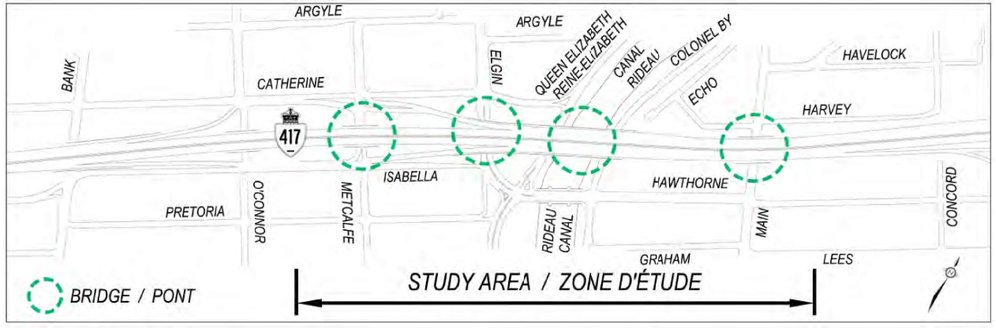


Figure 1: Study Area

Bridge rehabilitations and/or replacements have to account for the applicable Source Protection Plan. The purpose of the Source Protection Plan is to manage or eliminate activities that are, or could become, significant threats to drinking water sources. Provincial Ministries, Conservation Authorities, and Municipalities all have different responsibilities for implementing Source Protection Plans. Municipalities have the primary responsibility to implement and enforce policies locally to manage drinking water threats and to implement planning and restricted land use policies. The Ontario Ministry of the Environment and Climate Change is responsible for implementing policies related to activities that require provincial approvals. Source Protection

Committees direct the development of the Assessment Reports and Source Protection Plans for each region. Conservation Authorities provide support and technical expertise to municipalities.

The City of Ottawa contains two Regions - the Mississippi-Rideau Source Protection Region and the Raisin-South Nation Source Protection Region – each with its own locally-developed Source Protection Plan. Review of the Source Protection Plan for the Mississippi-Rideau Source Protection Region, effective January 1, 2015, indicates that the Study Area is within the Mississippi–Rideau Source Protection Region. Within each Region, there are Drinking Water Protection Zones. The Source Protection Regions and Drinking Water Protection Zones in Ottawa are shown in **Figure 2**. The existing Source Protection Region in the vicinity of the Study Area is shown in **Figure 3**.

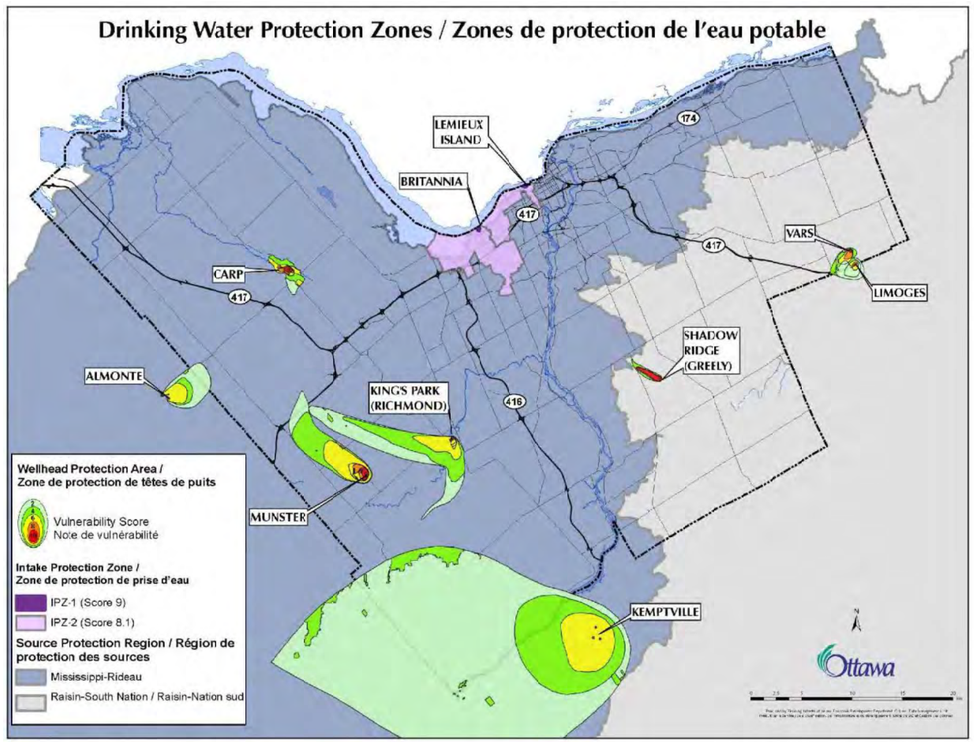


Figure 2: Source Water Protection Regions and Zones in Ottawa

(source:https://documents.ottawa.ca/sites/documents.ottawa.ca/files/Source%20Protection%20Plans%20in%20the%20City%20of%20Ottawa.pdf)



Figure 3: Existing Source Protection Region - Intake Protection Zone in Vicinity of the Study Area

(source: http://ottawa.ca/en/residents/water-and-environment/air-land-and-water/source-water-protection)

As shown above, the Study Area is within the Mississippi-Rideau Source Protection Region; however, the Study Area is not within an area of Ottawa River Intake Protection Zone. No Wellhead Protection Areas or Intake Protection Zones, collectively referred to as Drinking Water Protection Zones, exist for the Study Area. Therefore, no Source Protection policies apply and no risk management plan is required under the Mississippi-Rideau Source Protection Region Source Water Protection Plan.

It is noted that even though the Study Area is not within an area of Source Water Protection Zones, bridge rehabilitation and/or replacement will need to implement appropriate protection measures as per applicable legislation.

Appendix F
Fish and Fish Habitat Existing Conditions Report

Highway 417 Rehabilitation/Replacement of Downtown Bridges, Metcalfe Street to Main Street - Preliminary Design and Environmental Assessment
G.W.P. 4170-13-00

Fish and Fish Habitat Existing Conditions Report
Revision No. 2

August 2, 2018

BT Eng Project 17-010

MINISTRY OF TRANSPORTATION

Highway 417, Rehabilitation/Replacement of Downtown Bridges, Metcalfe Street to Main Street - Preliminary Design and Environmental Assessment

G.W.P. 4170-13-00

Fish and Fish Habitat Existing Conditions Report

This report has been prepared by:



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Fisheries Assessment Specialist

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ABSTRACT

This report has been completed to fulfill the requirements of the "Highway 417 Rehabilitation/ Replacement of Downtown Bridges, Metcalfe Street to Main Street - Preliminary Design and Environmental Assessment, G.W.P. 4170-13-00" assignment for the Ministry of Transportation (MTO), Ontario. The purpose of the fisheries component of the assignment is to conduct inventories in order to assess the structure and composition of the fish community of the Rideau Canal at the Highway 417 (Queensway) crossing and record all fish species encountered.

Access to the Canal was gained from a side channel at Patterson Creek approximately 400 m upstream of the Queensway crossing. Fish sampling occurred using a backpack electrofisher as well as an electrofisher-outfitted boat. The sample reach extended from this location downstream to the highway bridges. Sampling sites along the reach were chosen to correspond with various shallow water and deeper habitats offered in the Canal environment during its fall/winter draw-down elevation, approximately 2 m lower than during the navigation season. A total of 9 fish species were captured and released.

Table A1 below provides a summary of field information on the Canal reach that was surveyed. GPS coordinates are noted**.**

Table A1: Rideau Canal Fish and Fish Habitat Existing Conditions Summary - Highway 417 Bridges Upstream to Patterson Creek Confluence

GWP or Project Name	Waterbody	Latitude (18 T)	Longitude (18 T)	Flow	Thermal Regime	Fish Habitat	Fish Species Present	Substrate Type	Vegetation	Constraints and Opportunity	Important, Exceptional Fish Habitat	Species at Risk / Critical Habitat Present	In-water Works Timing Window Restriction
4170-10-00	Rideau Canal (50 m crossing width)	5028982 N to 5028542 N	446517 E to 446644 E	Permanent	Warm/Cool	Supports CRA fishery	Black Crappie+; Bluegill*; Bluntnose Minnow+; Brown Bullhead*; Common Carp*; Golden Shiner+; Johnny Darter*; Largemouth Bass+; Logperch+; Northern Brook Silverside*; Northern Pike; Pumpkinseed*; Rock Bass*; Smallmouth; Spottail Shiner+; Bass*; Walleye+; White Sucker*; Yellow Perch* *Primary +Secondary (Carleton University)	Muck/silt with vertical concrete canal walls as shoreline	Prolific algae, no riparian vegetation	Lack of diverse substrate composition and riparian vegetation provide potential opportunity for habitat quality improvements.	Exceptional fish habitat is minimal to non-existent. Muck substrate dominates, limiting the potential for spawning and rearing of young. The study area is likely only used passively.	Federal mapping indicates Bridle Shiner; Channel Darter; Northern Brook Lamprey; and River Redhorse in the Ottawa River/Upper Rideau River.	January 1st through June 30th no in-water construction

1.0 INTRODUCTION

The purpose of this component of the environmental assessment was to conduct inventories to assess the structure and composition of the fish community of the Rideau Canal at the Highway 417 (Queensway) crossing and record all fish species encountered.

Included in the Highway 417 Study Area (see **Figure 1**) is the highway right-of-way (ROW) corridor and the section of the Rideau Canal crossed by Highway 417. Together with the Metcalfe Street, Elgin Street and Main Street bridges, the rehabilitation or replacement of the twin Rideau Canal bridges is under consideration.

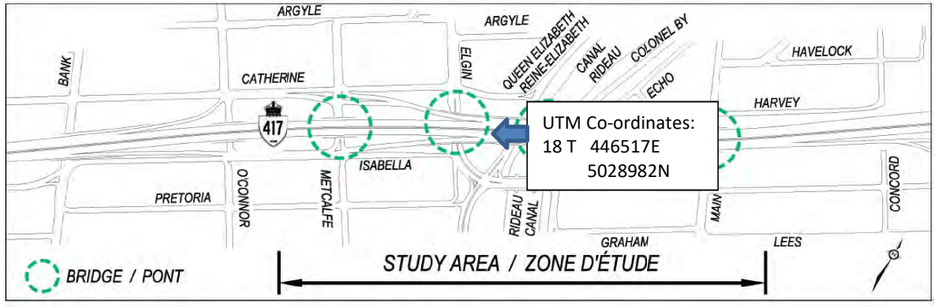

Figure 1: Study Area

The Rideau Canal is a concrete lined, 45 m wide channel that begins at the Ottawa River less than a kilometre downstream just west of the outlet of the Rideau River. The Canal runs through the City's downtown core, linking with the Rideau River and eventually the City of Kingston. Approximately 5 km upstream at the Hog's Back lock station it connects directly with the Rideau River and Dow's Lake. Its use today is primarily for pleasure boating, with most of its original lock structures intact, and it is operated by Parks Canada. It is the oldest continuously operated canal system in North America, and in 2007 it was registered as a United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Site. The Canal through the City is partially drained each fall for the winter ice skating season.



Photo 1: Queensway under construction 1968

Highway 417 construction through the City of Ottawa was undertaken from 1967 through 1969. The highway occupies the alignment of the former CN Rail line through the City, which ceased operations in early 1960's.

Background information on the aquatic resources of the Rideau Canal was requested from the Ministry of Natural Resources and Forestry (MNRF)[1] as well as from Parks Canada, Rideau Canal Waterway[2]. MNRF was able to provide general data on resident fish species in the Rideau River and additional information on aquatic Species at Risk (SAR). Fortunately, Parks Canada was able to provide current and site-specific information on resident fish species from a recent multi-year

[1] MNRF Kemptville District Office, Campus Drive, P.O. Box 2002, Kemptville, ON K0G 1J0
[2] Rideau Canal Office, Parks Canada, 34 Beckwith Street South, Smiths Falls, Ontario, K7A 2A8

inventory report on fish considered at risk in the Rideau Canal system, undertaken by Carleton University and reported in 2009[3]. Fish capture data is available from a sampling site at Dow's Lake approximately 5 km upstream of the Queensway bridges and another on the Canal between the Hartwell and Hog's Back Locks a few kilometres further upstream. A limited amount of additional background material is contained in the Highway 417 - Highway 416 to Anderson Road (GWP 663-93-00) Preliminary Design Report, TSH, October 2007. All background material can be reviewed in **Attachment 1**.

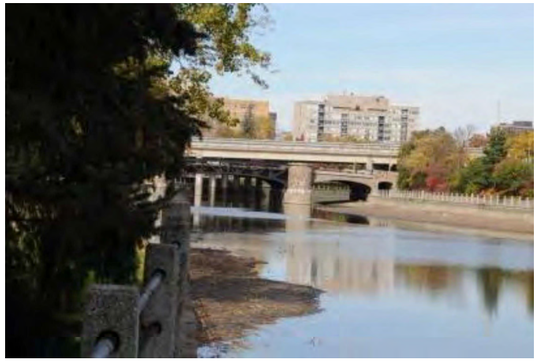

Photo 2: View of the Queensway and Pretoria Bridges from Upstream

On June 17, 2017 a site reconnaissance of the Rideau Canal crossing of the Highway 417 bridges was undertaken. A sample station was established directly beneath the bridges where water quality sampling and habitat mapping were completed. The Canal was visited again on October 22, 2017, just following the annual canal water level draw-down when direct access to the lower channel was available. Fish sampling was undertaken for a reach of the Canal extending from the Queensway bridges and upstream for approximately 400 m to the Patterson Creek inlet.

Attachment 2 presents representative photographs of the study area taken during the field investigations.

[3] Carleton University, "Inventory of Fish Considered to be at Risk in the Rideau Canal System Including Pugnose Shiner (*Notropis anoge*nus), Bridle Shiner (*N. bifrenatus*), River Redhorse (*Moxostoma carinatum*) and American Eel (*Anguilla rostrata*)", 2009

2.0 PHYSICAL AND BIOLOGICAL RESOURCES

2.1 General Physiography and Soils

The Study Area is located within the Ottawa Valley Clay Plain Physiographic Region[4] in an area of shallow till and occasional bedrock outcrops (no outcrops were observed in the study area). The surrounding lands are essentially flat and fully developed as a downtown urban area with a mix of commercial and residential land use. The land dips imperceptibly towards the Rideau Canal, which bisects the Study Area from north to south.

The Ottawa valley near the City of Ottawa consists of clay plains interrupted by ridges of bedrock or sand, deposited some 10,000 to 12,000 years ago by the glacial period Champlain Sea. The sediments are deep silty clay, grey in colour like the limestones that underlie them and likely derived from the rocks of the Canadian Shield. The Ottawa River today is entrenched within an older channel and is bounded on either side by abrupt bedrock bluffs. At Ottawa, the old channel is split, passing on either side of an upraised block of limestone.

The Champlain Sea was a body of saline to brackish water that occupied the depressed land of the St. Lawrence Lowland and extended up the Ottawa River valley during the late glacial period. The relative rise of sea level about 12,800 years ago was as much the result of depression of the land under the weight of glacial ice as of the rise of water level caused by meltwater released from the waning glaciers. The sea lasted some 2,000 years when the water became too fresh to accommodate marine organisms. The ancient shorelines of the Champlain Sea are now over 200 m above sea level due to differential postglacial isostatic uplift.



Figure 2: Champlain Sea

The most abundant sediments deposited by the sea, the Leda marine clays, are mainly rock "flour" from glacial abrasion. Their mineralogy principally reflects the composition of the Precambrian rocks from which they are derived, i.e., they contain quartz, amphiboles and pyroxenes. They are classed as "sensitive soils" because the incorporated sea salt has dissolved leaving voids that can cause the sediment to contain more water than its normal "liquid limit." Thus, when disturbed after much snowmelt or rainfall, or when triggered by heavy traffic, construction or earthquakes, the clays become fluid and landslides may result.

The Champlain Sea area has gradually become an erosional environment. When properly drained, its marine clays constitute the best agricultural land in Québec.[5]

2.2 Study Area Drainage

The Ottawa River, the chief tributary of the St. Lawrence River, rises in the Laurentian Plateau of western Quebec and flows westward to Lake Timiskaming and then southeastward, forming for most of its course the Quebec–Ontario provincial border before it joins the St. Lawrence, west of Montreal. Through its total course of 1,270 km, the river and its main tributaries drain an area of more than 142,000 km^2.

The Rideau River, a major Ottawa River tributary, flows 100 km northwards from the Rideau Lakes in eastern Ontario to the Ottawa River at Ottawa. The river traverses flat agricultural lands underlain by limestone, which was once an ancient seabed. The soils are rich, and the land gently rolling.

[4] Chapman and Putnam, “Physiography of Southern Ontario”, 1984
[5] www.thecanadianencyclopedia.ca/en/article/champlain-sea/

The Rideau Canal, also known unofficially as the Rideau Waterway, designed and built by Lieutenant-Colonel John By, connects the City of Ottawa to Lake Ontario and the St. Lawrence River at Kingston. Opened in 1832, it is 202 kilometres in length. The name Rideau, French for "curtain," is derived from the curtain-like appearance of the Rideau River's twin waterfalls where they join the Ottawa River. The canal system uses sections of two rivers, the Rideau and the Cataraqui, as well as several lakes. The Rideau Canal is operated by Parks Canada.

2.3 Aquatic Biology

MNRF, in their recent information reply[6], has provided a listing of resident warm and cool water fish species in the Rideau River. Many of these can be assumed to be residents of the Rideau Canal as well, where access is readily available and similar general habitat conditions prevail for portions of the year. As noted earlier, Parks Canada provided more current and site-specific information on resident fish species from a multi-year inventory report on fish considered at risk in the Rideau Canal system.

Under normal summer conditions, canal aquatic habitat opportunities are limited by the essentially uniform 3+ m depth with minimal flow, silt/muck bottom substrate and little or no availability of aquatic or riparian vegetation for reproduction or cover. Filamentous algae are prolific in the later summer. Lack of in-water or overhead cover in the form of riparian vegetation limits the possibility of successful reproduction or rearing of young to only the most hardy and flexible of species. Therefore, only those species that can tolerate the limited habitat opportunities that are typically available in the Canal could be expected to be present as permanent residents in lower sections.

The fall draw-down period, however brief, offers altogether different habitat opportunities for the various fishes in the lower canal reaches. Water depths are confined to a maximum of 1.5 m in the channel’s centre. Flows are now noticeable. Mud flats and silt deposits are extensive in some areas, particularly along the canal walls, offering shallow water habitats to those species that prefer this. These conditions prevail, however, for only a limited time before cold weather sets in and fish typically move to deeper areas of the system to over-winter.

The Rideau System, including the Rideau River and Canal, fall under Fisheries Management Zones (FMZ) 12 and 18 of the MNRF. General fisheries management directives can be found in the FMZ Zone 18 Fisheries Management Plan[7], and generally relate to maintaining fisheries biodiversity, and the strengthening of the Walleye and Bass fisheries.

[6] MNRF, Kempville District Office, November 29, 2017. We have assumed, although MNRF were not specific in their correspondence, that this is a listing of fish species identified as being resident in the Rideau River near Ottawa. Given the direct connection of the Rideau Canal to the Rideau River upstream approximately 5 km at Hog’s Back, many of these fish could also and likely do occur in the Canal, at least through a portion of the year.
[7] Background Information to the Fisheries Management Plan for Fisheries Management Zone 18, July 2014

3.0 FIELD METHODOLOGY

Investigation and reporting procedures regarding fish and fish habitat have followed the provisions set out in the "Pilot MTO/DFO/OMNR Protocol for Protecting Fish and Fish Habitat on Provincial Transportation Undertakings" (Version 3, 2016); the *Fisheries Act* 1985, amended 2013; as well as the most recent editions of the "MTO Environmental Reference for Highway Design" and "Environmental Guide for Fish and Fish Habitat" (2006, updated 2009).

As noted earlier, a reconnaissance visit on June 17, 2017 was followed by a detailed field investigation, including fish collection, on October 22, 2017 just after the canal water level was lowered in advance of the winter ice skating season.

Station 1 was established on the west bank of the Canal directly beneath the eastbound Highway 417 bridge. Station 2 was established 400 m upstream at the outlet of Patterson Creek, again on the west side at the canal wall.

Fish collection utilized a Halltech HT 2000 battery backpack electroshfisher. Wading in the shallower water was supplemented with a 3 person dingy with the shocker attached, which was able to easily access and sample deeper sections of the canal reach. The central channel (1.5 m depth) as well as shallow pools and shoreline areas were sampled to determine the local fish community structure along the entire 400 m length separating the stations. Turbid water from wading limited the effectiveness of the backpack shocker in shallower, near-shore areas of mud flats.

Water chemistry sampling was undertaken at each fish station. The following parameters were measured in the field: pH, DO, conductivity, water/air temperature, total dissolved solids (TDS) and turbidity.

MTO aquatic habitat assessment data sheets and field collection records were also completed for each of the fish survey stations. A hand sketch for each station was prepared, identifying significant in-stream and over-bank features, any in-water and over-bank vegetation, as well as any problem areas. These can be reviewed in **Attachment 3**. Field work was conducted under the direction of Rudi Warmé, with assistance from Dan Gillespie. A Licence to Collect Fish for Scientific Purposes was obtained from the MNRF in advance (**Attachment 4**).

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4.0 RESULTS

4.1 Sampling Station Descriptions

Two sampling stations were established for water quality sampling and aquatic habitat mapping purposes. At Station 1 (coordinates Zone 18 T E446517 N5028982) beneath the Queensway bridges, the Canal has a consistent width of slightly over 40 m, as it does through the entire study reach. Two sets of six - 1 m^2concrete in-water bridge piers are located approximately 5 m from the east and west canal walls. Multi-use recreational pathways run directly along the west and east sides of the Canal adjacent to Queen Elizabeth Driveway and Colonel By Drive, respectively, all spanned by the twin Queensway canal bridges. The water depth at the west wall was measured at 2.4 m in June, 2017, although a 1.5 m deep central channel remained following draw-down suggesting a maximum depth of almost 4 m. Mud and silt deposits have accumulated against the canal walls. Although generally absent in the Canal, submergent aquatic vegetation was observed nearer to the shore just under the water surface together with filamentous algae; larger patches of aquatic vegetation were also observed around the Hawthorne Street bridge a few metres upstream of the Queensway bridges.

There was no noticeable flow in the channel at Station 1 in the July 2017 inspection. In October, however, a 1.5 m deep central channel extended through the entire study reach of the Canal with a slight but observable flow to the north. Mud flats and silt deposits flanked the channel where it was not in contact with the concrete canal walls. The water had a greenish-brown tint and was quite turbid.

Sampling Station 2 (coordinates Zone 18 T E446644 N5028542) was established on the west bank of the Canal immediately downstream of the outlet of Patterson Creek to the Canal. Once more, the Canal had a consistent width of approximately 40 m through the reach. Deposits of muck and silt were mounded against the canal walls or within the flowing central channel.

4.2 Water Quality

Water was tested with portable field measurement equipment (Hanna Multiparameter meter) for water quality stations established 1 m from the vertical concrete west canal wall directly beneath the eastbound bridge at Station 1 and immediately downstream of the Patterson Creek tributary confluence at Station 2. A suite of water quality tests was taken with the results recorded below in **Table 1.** Results for each measured parameter were well within expected and acceptable ranges, although it is noted that in the winter of 2016-2017 there were several reports in the local media about contaminants having been detected in canal sediments.

Table 1: Water Quality Measurements, Rideau Canal at Highway 417

Station (Rideau Canal at Highway 417)	**Air/Water Temperature (°C)**	**pH**	**DO (%/mg/l)**	**Conductivity (uS/cm)**	**TDS (ppm)/ Turbidity (FTU)**
Station 1: Beneath Queensway bridges (June 17, 2017)	23/19	5.74	91.6/7.91	517	258/6.7
Station 2: At Patterson Creek confluence (October 22, 2017)	17/14.6	5.72	41.4/4.25	411	205/3.5

4.3 Fisheries

A total of 9 species of forage and sport fish were captured and released in the 400 m reach of Rideau Canal sampled by electrofisher. A total of 300 seconds of electrofisher sampling time was recorded through wading and 1,800 seconds shocking by boat. Species favouring shallow water habitats were collected (sunfishes), as were species more commonly found in larger bodies of water (basses). The **Table 2** 2017 listing below is compared to the numbers of individuals of the species inventoried in the Carleton University SAR investigation at two adjacent stations upstream of the Queensway at Dows Lake, with field work undertaken in 2007 and 2008[8].

Table 2: Fish Species Inventoried in the Rideau Canal (2017, 2010)

Common Name	Species	Queensway Bridges to Patterson Creek (2017)	Dow's Lake/Hartwell to Hog's Back Locks (2010)*
Common carp	*Cyprinus carpio carpio*	1	0/87
Pumpkinseed	*Lepomis gibbosus*	10	40/55
Bluegill	*L. macrochirus*	20	22/70
Smallmouth Bass	*Micropterus dolomieu*	1	0/6
Rock Bass	*Ambloplites rupestris*	1	7/8
Yellow Perch	*Perca flavescens*	2	4/545
Johnny Darter	*Etheostoma nigrum nigrum*	2	3/213
Brown Bullhead	*Ameiurus nebulosus*	1	1/61
White Sucker	*Catostomus commersoni*	1	0/8

* Additional species inventoried in the Carleton Study at these stations included Largemouth Bass (*M. salmoides*), Black Crappie (*Pomoxis nigromaculatus*), Logperch (*Percina caprodes*), Walleye (*Sander vitreus*), Northern Brook Silverside (*Labidesthees sicculus*), Northern Pike (*Esox Lucius*), Bluntnose Minnow (*Pimephales notatus*), Spottail Shiner (*Notropis hudsonius*) and Golden Shiner (*Notemigonus crysoleucas*).

4.4 Aquatic Species at Risk

The *Species at Risk Act* (SARA) is intended to provide protection for species of animals and plants listed on Schedule 1 of the SARA and/or their identified critical habitat. The federal government's responsibility for listed aquatic species is also covered by the 2013 *Fisheries Act*, which dictates that prohibitions apply to these species wherever they are found in Canada. SARA applies on federal lands only. River Redhorse (*Moxostoma carinatum*), Channel Darter (*Percina copelandi*) Brindle Shiner (*Notropis bifrenatus*) and Northern Brook Lamprey (*Ichthyomyzon fossor*) are currently listed in mapping on the federal website[9] as possibly being resident in the vicinity (Ottawa River or upstream in the Rideau River), although none are indicated for the Rideau Canal itself.

[8] Carleton University, "Inventory of Fish Considered to be at Risk in the Rideau Canal System including Pugnose Shiner (*Notropis anogenus*), Bridle Shiner (*Notropis bifrenatus*), River Redhorse (*Moxostoma carinatum*) and American Eel (*Anguilla rostrata*)", 2010

[9] http://www.dfo-mpo.gc.ca/species-especes/fpp-ppp/ottriv-rivout-15-eng.htm

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Species not protected by SARA may otherwise be protected through provincial legislation. In Ontario, provincial designations of Species at Risk are protected under the *Endangered Species Act*, 2007 (ESA)[10]. For the Ottawa area the *Act* lists Pugnose Shiner, Bridle Shiner, River Redhorse and American Eel. Only the River Redhorse was located in the Rideau Canal system in the Carleton University Study, again, upstream in the Black Rapids Locks to Long Island reach.

No SARA or ESA species were captured during the 2017 field sampling for this study.

[10] https://www.ontario.ca/page/how-species-risk-are-protected

5.0 DISCUSSION

The MTO is undertaking the Preliminary Design and Environmental Assessment for the rehabilitation or replacement of several Highway 417 (Queensway) bridges in the downtown core of the City of Ottawa. Fish habitat was reviewed in the Rideau Canal near the Queensway bridges and subsequent fisheries surveys were undertaken.

This Existing Conditions Update Report is designed to fulfill MTO's responsibility by providing regulatory agencies with background information. As well, it has been prepared to assist in completing an assessment of potential impacts to fish and fish habitat and to recommend measures for implementation to protect and enhance this aquatic habitat, so as to minimize project effects on the surrounding fisheries resource.

The Rideau Canal offers limited aquatic habitat opportunities for a community of both warm and cool water fish species. Many of these can be assumed to be residents of the Rideau River as well, where access is readily available. The Canal width is 45 m and water depth is 2.4 m at the canal walls spring/ summer/ fall. Water levels are lowered 2 m in October to expose mud flats mounded against walls and a 1.5 m deep centre channel. The water colour is green/brown, typically turbid with minimal flow and algae is prolific in late summer. Fish species present in the early fall included Pumpkinseed, Bluegill, Small Mouth Bass, Rock Bass, Yellow Perch, Johnny Darter, Brown Bullhead, Common Carp and White Sucker.

The Canal, although an artificial waterway, nonetheless provides fish habitat year round. Critical habitat features for successful reproduction and rearing of young are limited to absent. However, it is anticipated that regulatory agencies would consider major construction impacts to the Canal as serious harm to fish and fish habitat.

5.1 Proposed Construction Related Activities

Staging area options to replace the two 3-span bridges over the Rideau Canal have been considered at Ballantyne Park and the Nicholas Street interchange. Several bridge replacement construction alternatives have been reviewed and recommended for further consideration, including:

- conventional construction using sequential staging for removal and the replacement
- immediately adjacent construction utilizing a rapid replacement jack-and-slide technology, and
- rapid replacement utilizing self-propelled mobile transporter (SPMT) transportation/removal to and from an off-site bridge construction and demolition staging area

Staging areas under consideration for the conventional Rideau Canal Bridge replacement structures construction would only be necessary for materials and equipment storage, and would likely include highway ROW green spaces adjacent to the bridge crossing.

To proceed with canal bridge replacements utilizing jack-and-slide or SPMT methodologies will require the full utilization/levelling of staging areas adjacent to the Queensway bridges at the Canal. Figure 3 illustrates the conceptual Staging Area requirements for a Jack and Slide methodology. Tree removal may also be necessary adjacent to the canal. In order to prepare the site for demolition and bridge replacement, temporary infilling of the Canal for a distance up and downstream of the crossing with rock/earth backfill may be required after the annual October draining period (see **Figure 4**). MNRF has identified a January 1 through June 30 restriction on in-water activities for the Rideau River and Canal. Most species of fish that were captured in the Rideau Canal are tolerant of warm water and fluctuating DO levels and could tolerate a temporary disturbance that would require their removal from the construction zone.

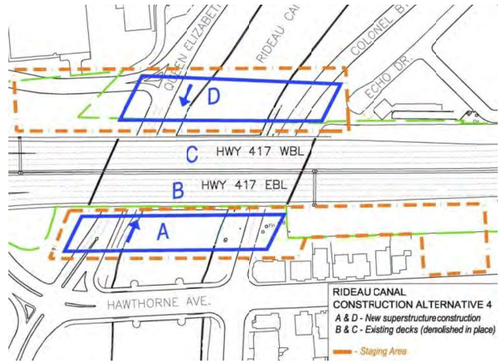

Figure 3: Jack and Slide Staging Areas

Potential fisheries enhancement opportunities for the Rideau Canal in the immediate vicinity of the Queensway Bridges Replacement Project are extremely limited due to navigability requirements of the canal system. Essentially, to address obvious deficiencies in fish habitat structure - lack of in-water cover and poor substrate availability - major habitat alterations would be in order. This could include only partial removal of temporary canal backfill materials following the bridge replacements if a rapid replacement option is chosen. This material could be placed against the canal walls to an elevation of just below normal summer water level, perhaps alternating east and west walls to minimize navigation obstruction (and introduce a vague mender pattern). Cattails will immediately establish on the shallows and the sloped banks would further enhance aquatic habitat diversification. Boulders could be added to the bottom to increase cover opportunities. These measures could be established with minimal/no impact to present day navigation (the very occasional kayak or canoe). Of course, this plan would be subject to Parks Canada approval.

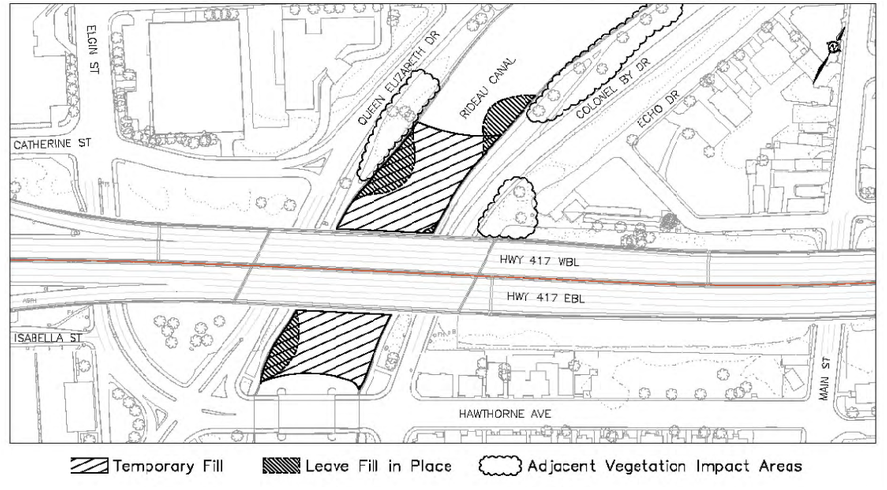

Figure 4: Opportunities and Constraints with Rapid Replacement Options

5.2 Sediment Contamination

Contaminated sediments have been identified as being present in the Canal. This will result in a cost during construction to deal with contaminated fill and/or debris from demolishing the old bridge in place. Once the recommended replacement method has been selected, the impacts and mitigation options to minimize the disturbance of contaminated sediments and their impacts on fisheries resources in the Canal will be assessed and the Fisheries report will be updated accordingly.

6.0 REFERENCES

Chapman, L. J. and Putnam, D. F. 1984: The Physiography of Southern Ontario; Ontario Geological Survey, Special Volume 2. 270 pp.

Holm, E., N.E. Mandrak and M.E. Burridge. 2009: Freshwater Fishes of Ontario. Royal Ontario Museum, Toronto, Ontario. 462 pp.

Scott, W.B. and E.J. Crossman. 1973: Freshwater Fishes of Canada. Bulletin 184 – Fisheries Research Board of Canada. Department of Fisheries and Oceans. Ottawa, Ontario. 966 pp.

Attachment 1

From: Highway 417/Queensway, Ottawa
Preliminary Design Study
MTO W.P. 663-93-00
Preliminary Site Reconnaissance Memo, June 16, 2002: Fisheries, Vegetation and Wildlife

The Rideau Canal is a concrete lined channel that runs through the City's downtown core. It is drained each fall for the winter season and had only pools of water containing small schools of pumpkinseed sunfish (*Lepomis gibbosus*) on the day of the site visit. Summer water levels appear to be set approximately 2 m above the draw-down level. Remnant patches of aquatic vegetation including pondweeds (*Potamogeton* sp.) and filamentous type algae suggest it is plentiful through the summer months. The canal bed in the vicinity of the Queensway bridge crossing consists of silty sand and muck.

The highly urbanized environment forms the bulk of the study area from the junction of Highway 416 in the west through the City's downtown core to east of the Rideau River. In this section the Highway right-of-way is usually bounded by sound reduction barriers, behind which are either residential or tertiary commercial/industrial development. The botanical species found here are for the most part landscape planting or introduced landscape species that have escaped to colonize sections of the right-of-way. The most prominent of these is Tartarian honeysuckle (*Lonicera tatarica*), Manitoba maple, silver maple (*Acer saccharinum*) and red/green ash. Other landscape plantings present include red pine (*Pinus resinosa*), Austrian pine (*Pinus nigra*), mugho pine (*Pinus mugho*) and blue spruce (*Picea pungens*).

Ontario

Ministry of Transportation

HIGHWAY 417 (OTTAWA QUEENSWAY), PRELIMINARY DESIGN STUDY AND ENVIRONMENTAL ASSESSMENT FOR CAPACITY AND OPERATIONAL IMPROVEMENTS, FROM HIGHWAY 416 TO ANDERSON ROAD
MTO W. P. 663-93-00

FISHERIES AND AQUATIC ECOSYSTEM TECHNICAL REPORT

May 2006

warmé engineering and biological services

MINISTRY OF TRANSPORTATION

HIGHWAY 417 (OTTAWA QUEENSWAY), PRELIMINARY DESIGN STUDY AND ENVIRONMENTAL ASSESSMENT FOR CAPACITY AND OPERATIONAL IMPROVEMENTS, FROM HIGHWAY 416 TO ANDERSON ROAD

MTO W. P. 172-78-00

FISHERIES AND AQUATIC ECOSYSTEM TECHNICAL REPORT

This report has been prepared by:

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May 20, 2006

Ms. Christie Curley
Area Biologist
Ministry of Natural Resources
1 Concession Road, P.O. Bag 2002
Kemptville ON K0G 1J0

Dear Ms. Curley:

Re: Highway 417 (Queensway), Preliminary Design Study and Environmental Assessment for Capacity and Operational Improvements, from Highway 416 to Anderson Road
Ministry of Transportation W. P. 663-93-00
Fisheries and Aquatic Ecosystem Technical Report

We are pleased to provide you with two copies of our final fisheries report that focuses on existing aquatic habitats that may be impacted with implementation of the above-noted project.

Watercourse crossing modifications as a result of road improvements at the sites investigated may result in fisheries impacts to a greater or lesser extent. The preliminary engineering study has proceeded to a point that we are able to identify proposed crossing improvements at four study area locations: pier extensions at the Rideau River and Rideau Canal structures, a culvert inlet extension at Graham Creek and another culvert inlet and outlet extension on a highway cross culvert.

We would ask that you comment on the adequacy of available field inventories (i.e. is this base information acceptable for discussion and analysis), the potential for a HADD with the proposed work as well as on the appropriateness of suggested mitigation measures.

We request that you respond with your comments within eight weeks of receipt of this document.

Yours very truly,

Rudi Warmé, P.Eng.
Biological Engineer

Encl.

pc: Mr. Dave McAvoy, MTO Environmental Planner, Kingston
Mr. Dave Lindensmith, P.Eng, MTO Project Manager, Kingston
Brian Ruck, P.Eng, TSH Project Manager, Whitby

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MINISTRY OF TRANSPORTATION W. P. 633-93-00

FISHERIES AND AQUATIC ECOSYSTEM TECHNICAL REPORT

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MINISTRY OF TRANSPORTATION W. P. 633-93-00
FISHERIES AND AQUATIC ECOSYSTEM TECHNICAL REPORT

1.0 INTRODUCTION

The Ministry of Transportation is currently undertaking a Preliminary Design Study and Environmental Assessment for Operational Capacity Improvements for this section of the Queensway, between the junction of Highway 416 and Anderson Road, a distance of approximately 30 km. The associated proposed works and undertakings may result in impacts to several watercourses along the route and may be considered a harmful alteration, disruption or destruction of fish habitat (a _HADD'). In order to more clearly identify the potential negative impacts and assist in the development of appropriate mitigation measures, this fisheries report has been prepared. A fisheries inventory and stream habitat assessment was undertaken in accordance with the MTO *Environmental Manual, Fisheries* (1994), the MTO/MNR *Fisheries Protocol* (1993) and MTO *Environmental Reference for Design* (2002).

2.0 SCOPE OF FISH HABITAT INVESTIGATIONS

A total of 13 watercourse crossings were examined along a 30 km section of the Highway 417 (Queensway) right-of-way. Field work for this fisheries inventory and aquatic habitat survey was conducted from June 18th to June 20th, 2002. These crossings had been previously identified on April 25/26, 2002 during a reconnaissance-level fish habitat survey of the study area.

The subject watercourses varied in size and type from small intermittent streams to the main channel of the Rideau River. Twelve of these watercourses - discussed in subsequent paragraphs - were determined to be warm water aquatic systems containing fish and, as such under the definitions of the federal *Fisheries Act,* they are considered fish habitat. A **drawing** illustrating the study area is contained in the **Back Envelope**.

The presence of fish in ten of these watercourses was confirmed through fish capture, while the remaining two watercourses were not fished owing to safety concerns brought about by flood conditions which occurred during the survey period. The watercourses that were not electro-fished were the Rideau Canal and the Rideau River. Visual fish habitat assessments and sketches of both watercourses were made and are provided in this report. Since these are large significant watercourses in the Ottawa area there are several secondary sources of information concerning the structure of the fish communities within these systems.

3.0 DATA COLLECTION METHODOLOGY

On April 25/26, 2002 a reconnaissance field survey (see **Attachment 2**, also including photos taken on that day) was conducted to determine the potential fish habitat status of the various watercourses crossed by Highway 417 within the study area. In addition, the survey served to ascertain the level of effort required to accurately describe the existing aquatic habitat conditions and conduct the requisite fish collections. From this initial survey it was determined that 13 watercourse crossings had the potential to be fish habitat. A "License to Collect Fish for Scientific Purposes" was obtained prior to the study date from the Kemptville District Office of the Ontario Ministry of Natural Resources (OMNR). The actual survey work for this report took place from June 18th to 20th, 2002. A three-person survey crew started at the Highway 417/416 intersection and proceeded in an easterly direction toward the Anderson Road access point. Representative Photographs of each site are contained in **Attachment 3**.

3.1 Electro-fishing

The survey crew electro-fished the previously identified watercourses in order to determine the presence and species of fish in each watercourse. A Coffelt Model BP4 electroshocker was utilized for the survey. All electro-fishing efforts took place adjacent to the Highway 417 culvert or bridge crossing associated with the subject watercourse. In accordance with the MNR/MTO Fisheries Protocol, a study reach of 100 m downstream and 20 m upstream was established for each watercourse. Flats, riffles and runs were electro-fished, as were any areas of in-water cover formed by bank vegetation or deadfalls. All fish collected were released immediately following identification.

3.2 Fish Habitat Mapping and Water Quality

In addition, detailed, hand drawn fish habitat field mapping of all study reaches was prepared and water sampling was conducted to test for the following parameters: pH, dissolved oxygen, water colour and air and water temperature. **Attachment 4** provides the results of this work.

3.3 Weather Conditions during Data Collection

In the week leading up to the survey period there had been a series of major storm events in the Ottawa area. Consequently, all of the watercourses were at the bankfull stage through much of the survey period, and all exhibited high levels of turbidity. In addition, these high-water conditions may have served to disperse resident fish and make them less susceptible to the electro-fishing equipment.

These flood conditions and accelerated current velocities were severe enough to make the planned gill netting survey of the Rideau River and Canal impractical as well as a safety concern for the survey crew. It was subsequently determined that detailed information concerning the fish populations of these two water bodies was available from the OMNR sources and this would be sufficient for the purposes of the study.

3.4 Secondary Information Sources

The OMNR in Kemptville provided some fish habitat information that had been collected in the years 1975, 1995, and 1999 (see **Attachment 5**). This material was used to confirm fish species that are resident in the subject watercourses: Rideau River, Graham Creek and Ramsay Creek. These reports consist of information concerning "A Fisheries Assessment in the Rideau River" as well as fish habitat and population surveys for Graham and Ramsay Creeks.

4.0 FISHERIES AND AQUATIC HABITAT DESCRIPTION AND ASSESSMENT

A Summary of Water Quality Results, Streambed Morphology and a Fish Investigation Site Summary are attached as **Tables 1 through 3** respectively. A general description of aquatic and adjacent terrestrial habitats from the western to the eastern limits of the study area follows.

TABLE 1: SUMMARY OF WATER QUALITY RESULTS

Site No.	Date D/M 2002	Temperature Air/Water (C)	PH	Dissolved Oxygen (Mg/L)	Water Colour
1	18/06	28/14	7.4	8.46	turbid
1B	18/06	28/15.6	6.8	8.4	turbid
2	18/06	28/14.9	7.8	10.29	turbid
3	18/06	28/15.8	7.8	9.85	yellow/brown
4	18/06	28/19.5	8.5	10.45	yellow/brown
5	20/06	29/19.6	8.3	9.67	yellow/brown
6	19/06	27/16.8	6.3	7.39	turbid
7	19/06	27/19.7	5.9	3.57	turbid
8	19/06	27/20.1	7.8	8.27	turbid
9	19/06	27/18.4	6.1	7.72	turbid
10	20/06	29/16.0	7.8	9.49	turbid
11	20/06	29/13	7.8	10.59	turbid
12	20/06	29/16.8	7.7	4.49	turbid

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TABLE 2: STREAMBED MORPHOLOGY

Site No.	% Riffles	% Runs	% Pools	% Flats
1	40	40	10	10
1B	30	50	15	5
2	35	35	20	10
3	35	35	5	25
4	0	0	0	100
5	35	35	15	15
6	60	25	10	5
7	20	50	20	10
8	15	70	10	5
9	30	30	30	10
10	50	30	10	10
11	60	30	5	5
12	60	25	10	5

TABLE 3: SUMMARY OF EXISTING FISH HABITAT CONDITIONS, POTENTIAL IMPACTS AND MITIGATION

Station No. & Photo #	Creek Name & Chainage	Physical Description	Fisheries Assessment	Proposed Highway Improvements	Potential Fish Habitat Impacts	Proposed Mitigation
Site 1A Attachment 3, Photo #1	Stillwater Creek Tributary 1 14+600	3.0 m wide; 0.3 m deep; clay and limestone substrates	Warm water fish habitat. Species caught: creek chub and brook stickleback	Roadway widening	No impacts anticipated	not required
Site 1B Attachment 3, Photo #2	Unnamed Stillwater Creek Tributary 2 15+000	1.5 m wide; 0.15 m deep; clay substrate, perched culverts; probably intermittent	Not fish habitat. No fish present	Roadway widening	No impacts anticipated	not required
Site 2 Attachment 3, Photo #3	Graham Creek 16+500	5.0 m wide; 0.3 m deep; heavily rip-rapped and channelized	Warm water fish habitat. Species caught: creek chub, bluntnose minnow, fathead minnow, brook stickleback, common white sucker, and others	Roadway widening 16 m culvert outlet extension	Possible harmful disruption	Extend with open footing design; substrate enhancement within extension; inlet and outlet pools; riparian plantings
Site 3 Attachment 3, Photo #4	Pinecrest Creek 21+100	4.0 m wide; 0.2 m deep; treed banks, limestone, cobble, silt substrates	Warm water fish habitat. Species caught: common white sucker	Roadway widening	No impacts anticipated	not required
Site 4 Attachment 3, Photo # 5	Rideau Canal 29+475	30.0 m wide; 3.0 m deep; hardened shore, sand, silt substrates, heavily vegetated	Warm water fish habitat. Species reported: pumpkinseed, brown bullhead, central mudminnow, rock bass, carp, and others	6 m deck widening downstream side Pier extensions (2 piers) 6 m downstream (Note: Alternative 2 – worst case)	Possible harmful disruption	Surround pier extensions with 300 mm thickness of river stone

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Station No. & Photo #	Creek Name & Chainage	Physical Description	Fisheries Assessment	Proposed Highway Improvements	Potential Fish Habitat Impacts	Proposed Mitigation
Site 5 Attachment 3, Photo # 6	Rideau River 10+080	120 m wide; ± 3.0 m deep; shale, silt, cobble substrates	Warm water fish habitat. Species reported: northern pike, muskellunge, smallmouth bass, largemouth bass, and others	3.9 to 6.1 m deck widening upstream, 3.6 m downstream Pier extensions (4 piers) 4 to 5 m upstream, 3.6 m downstream	Possible harmful disruption	Surround pier extensions with 300 mm thickness of river stone
Site 6 Attachment 3, Photo # 7, 8 and 9	Green's Creek 15+050 EB 15+115 WB	10 m wide; ± 1.0 m deep; heavily rip rapped banks, gravel, cobble, shale substrates	Warm water fish habitat. Species caught: longnose dace, pumpkinseed, common white sucker, fathead minnow, creek chub and others	Roadway widening	No impacts anticipated	not required
Site 7 Attachment 3, Photo # 10	Borthwick Creek 16+830 EB 16+950 WB	3.0 m wide ; 0.4 m deep; grassed banks, channelized, silty bottom, some rocks	Warm water fish habitat. Species caught: creek chub, central mudminnow and brook stickleback	Roadway widening	No impacts anticipated	not required
Site 8 Attachment 3, Photo #11 and 12	Ramsay Creek 17+765 EB 17+945 WB	5.0 m wide; 0.6 m deep; banks are heavily rip rapped with silty clay streambed	Warm water fish habitat. Species Caught: spottail shiner, central mudminnow. Reported: creek chub, common sucker and others	Roadway widening	No impacts anticipated	not required
Site 9 Attachment 3, Photo # 13 and 14	Ramsay Creek Tributary 18+175 EB	4.0 m wide; 0.2 m deep; silty muck bottom; potentially intermittent	Warm water fish habitat. Species caught: brook stickleback	Roadway widening	No impacts anticipated	not required
Site 10 Attachment 3, Photo #15 and 16	McEwan Creek Tributary 1 18+920 EB 18+970 WB	5.0 m wide; 0.3 m deep; stream has been channelized, clay banks, with a sandy bottom	Warm water fish habitat. Species caught: longnose dace, creek chub and central mudminnow	Roadway widening	No impacts anticipated	not required

Station No. & Photo #	Creek Name & Chainage	Physical Description	Fisheries Assessment	Proposed Highway Improvements	Potential Fish Habitat Impacts	Proposed Mitigation
Site 11 Attachment 3, Photo # 17 and 18	McEwan Creek Tributary 2 19+650 EB	1.5 m wide; 0.2 m deep; grass banks, substrates are sand and clay	Warm water fish habitat. Species caught: longnose dace, creek chub and central mudminnow	Roadway widening	No impacts anticipated	not required
Site 12 Photo # 19 and 20	Ramsay Creek 20+915 EB 20+900 WB	2.0 m wide; 0.8 m deep; the stream is channelized with rip rapped banks and clay and sand substrates	Warm water fish habitat. Species caught: fathead minnow, spottail shiner, creek chub, brook stickleback, and central mudminnow	Roadway widening	No impacts anticipated	not required

4.1 Fisheries Investigation Sites

Site 1A: Stillwater Creek and Tributary 1

Stillwater Creek at this point flows between Highway 417 and the Corktown Road. The land between these two roadways is part of the Ottawa greenbelt, specifically the Stillwater Creek Pathway. It is primarily forested land with a pedestrian trail and bicycle path running parallel to the two roadways. The main tributary of Stillwater Creek flows along the right-of-way of Highway 417 (Attachment 3, Photograph 1), but not underneath it, and then under the Corktown Road and thence into the Ottawa River. The main channel in this area is typically 3 m wide and 0.3 m deep at the bankfull stage. The watercourse flows along the highway right-of-way through an open grassed swale that has dense covering of reed canary grass (*Phalaris arundinaceum*). A second tributary, however, does pass under the highway and enters the main stream. The banks are stable and the streambed is comprised of clay with some exposures of limestone. The stream also flows through the portions of the forested green belt area. The surrounding landscape and catchment is residential in character (Attachment 3, Photograph 2).

During the survey period the stream was at the bank full stage and was carrying a fairly heavy sediment load. The water was turbid and swift flowing. Electro-fishing of the watercourse, adjacent the highway right-of-way, captured creek chub (*Semotilus atromaculatus*) and brook stickleback (*Culaea inconstans*).

Site 1B: Unnamed Creek (Stillwater Creek Tributary 2)

A third unnamed watercourse was also examined in this area of Highway 417. It passed underneath the highway and the gravelled pedestrian trail. In both instances the culverts were badly perched. The downstream area of this watercourse flows for a short distance through the forested area of the Stillwater Creek Pathway and then enters a large 1.5 m concrete pipe that passes underneath an old abandoned railway bed, which parallels the Corktown Road. This pipe is smooth sided and steeply angled — approximately 35 degrees— this would preclude fish from ascending into the area of the right-of-way. This small stream appears to have been buried from this point onward and no doubt at some point downstream enters the Ottawa River. The upstream area of this watercourse, on the south side of Highway 417, has a predominantly clay stream bed with some cobble and flows through an agricultural land currently planted to corn.

This watercourse may simply be an area of local drainage and is probably intermittent except during major storm events. No fish were captured in the study reach of the stream. Given its inaccessibility from steeply angled and perched culverts, it would appear this watercourse is not fish habitat.

Site 2: Graham Creek

Graham Creek is also a tributary of the Ottawa River and, within the highway right-of-way, has been significantly altered and its streambanks are riprapped. Within this altered zone the stream is artificially widened and is approximately 5 m across. The streambed itself appears to have been augmented with cobble similar to that in the riprapped streambanks. Fish habitat compensation measures may have been recently implemented at this site as a result of a northerly open-footed concrete box culvert extension to accommodate the Transitway that is adjacent to the Highway 417 right-of-way (Attachment 3, Photograph 3). Four sets of rock vortex weirs have been placed on the stony, gravel streambed to create pool-riffle areas. These habitat enhancement measures appear to be working well. Red osier dogwood, (*Cornus sericea ssp. sericea*) shrubs have been planted amongst the riprap. Downstream of the culvert and the vortex weirs, the stream passes under a pedestrian footbridge where the stream banks have some tree cover in the form of white birch (*Betula papyrifera*) and crack willow (*Salix fragilis*).

Upstream, the watercourse has also been altered for approximately 10 m, but beyond this point is narrow, fast flowing and with a more natural streambed and bank. In its natural state the streambed is clay. The surrounding landscape and catchment is heavily urbanized.
Fish species captured by electro-fishing in Graham Creek included creek chub and brook stickleback. OMNR capture records from 1995, for a section of Graham Creek near the Knoxdale Road also list common white sucker (*Catostomus commersonii*), central mudminnow

(*Umbra limi*), unspecified dace (*Semotilus spp.*), unspecified shiner (*Notropis spp.*), fathead minnow (*Pimephales promelas*) and bluntnose minnow (*Pimephales notatus*).

Site 3: Pinecrest Creek

This watercourse crosses under the Queensway through a large, open-footed, twin cell, concrete box culvert. The bankfull channel is 4 m wide and 0.2 m deep and the water was very turbid during the survey period; however, during the preliminary site visit, the water was found to be clear. The watercourse banks are deeply incised into the soil, relatively steep, and continue to erode, probably from the flashy nature of the stream's flow. The adjacent soil cover is thin; however, significant erosion is evident approximately 100 m downstream and within the wooded area. The downstream reach of the watercourse flows through a woodlot consisting of balsam poplar (*Populus balsamifera*), swamp white oak (*Quercus bicolor*) and red/green ash (*Fraxinus pennsylvanica*). Immediately below the culvert outlet and extending into the woodlot, the overbanks are densely vegetated with grasses and other herbaceous species such as tall meadow rue (*Thalictrum dioicum*) and water hemlock (*Cicuta maculata*). The bottom substrate is flat limestone bedrock with occasional deposits of cobble and silt. The upstream riparian zone is similar to the downstream reach. The woodlot banks heavily shade the watercourse. The surrounding landscape and catchment is urban residential in character (Attachment 3, Photograph 4).

The only species of fish captured here was a common white sucker; however, since this is relatively high quality warmwater fish habitat, it is likely several other species of fish would also inhabit these waters, but may have been dispersed further downstream as a result of the high flow conditions that existed during the survey period.

Site 4: The Rideau Canal

The Rideau Canal is a concrete lined channel that runs through the City's downtown core (Attachment 3, Photograph 5). It is subject to being drained each fall for the winter season. Summer water levels appear to be set approximately 2 m above the winter drawdown level. The average summer depth of this watercourse is 3 m and it is approximately 30 m wide. The canal is heavily vegetated with pondweeds (*Potamogeton sp.*) and filamentous type algae. The canal bed in the vicinity of the Queensway bridge crossing consists of silty sand and muck. Although no electro-fishing efforts were conducted, owing to the high water conditions during the survey period, it is obviously fish habitat. Numerous centrarchids, probably pumpkinseeds (*Lepomis gibbosus*) were observed from the canal banks during the survey period. It is also probable that most species of fish that inhabit the adjacent Rideau River and are tolerant of warm water and fluctuating dissolved oxygen levels would also be resident in the Rideau Canal. These species

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may include carp (*Carpinus carpio*), central mudminnow (*Umbra limi*), brown bullhead (*Ameiurus nebulosus*), largemouth bass (*Micropterus salmoides*) and rock bass (*Ambloplites rupestris*), among others. A complete list of species for the Rideau River was compiled during a fisheries assessment study, which was undertaken by the OMNR and the Region of Ottawa Carleton in 1999 (Attachment 5). Since the Rideau Canal and the Rideau River are in essence the same watercourse, any species present in one has the potential to be present in the other. This list appears in the following section on the Rideau River.

Site 5: Rideau River

Several hundred metres east of the canal is the broad shallow valley of the Rideau River, approximately 120 m wide at the Queensway (Attachment 3, Photograph 6). The water on the survey day was yellow brown and was flowing swiftly. The bottom substrates are shale with covering layers of gravel and cobble in the near shore areas. Steeply sloping streambanks approximately 3 m high contain a narrow band of woody riparian vegetation consisting of white elm (*Ulmus americana*) and Manitoba maple (*Acer negundo*). Beyond is manicured parkland, featuring large areas of lawn and ornamental plantings. During the survey period the river was very high and large amounts of debris including logs and branches were floating downstream.

No electro-fishing efforts were undertaken owing to concerns regarding efficacy and safety; however, a list of species was prepared in 1999 by OMNR, and is the result of using trap nets, as well as other gear. The survey technique used during this work was in accordance with the OMNR's ‗Near-shore Community Index Netting' protocol. The list is presented in **Table 4**.

TABLE 4: FISH SPECIES OF THE RIDEAU RIVER

Common Name	Latin Nomenclature
northern pike	*Esox lucius*
muskellunge	*Esox masquinongy*
central mudminnow	*Umbra limi*
carp	*Carpus carpio*
eastern silvery minnow	*Hybognathus nuchalis regius*
golden shiner	*Notropis crysoleucas*
emerald shiner	*Notropis atherinoides*
blackchin shiner	*Notropis heterodon*

spottail shiner	*Notropis spilopterus*
bluntnose minnow	*Pimephales notatus*
common white sucker	*Catostomus commersonii*
greater redhorse	*Moxostoma valenciennesi*
brown bullhead	*Ameiurus nebulosus*
tadpole madtom	*Noturus gyrinus*
banded killifish	*Fundulus diaphanus*
brook silverside	*Labidesthes sicculus*
mottled sculpin	*Cottus bairdi*
rock bass	*Ambloplites rupestris*
pumpkinseed	*Lepomis gibbosus*
bluegill	*Lepomis macrochirus*
smallmouth bass	*Micropterus dolomieu*
largemouth bass	*Micropterus salmoides*
black crappie	*Poxomis nigromaculatus*
johnny darter	*Etheostoma nigrum*
yellow perch	*Perca flavescens*
logperch	*Percina caprodes*
walleye	*Stizostedion vitreum*

Site 6: Green‘s Creek

The west tributary of Green‘s Creek at the Queensway/Highway 174 interchange passes under the east and westbound lanes to enter a cattail filled channel extending several hundred metres along the central median. This tributary flows south-easterly before crossing under the westbound lane and the Innes Road access ramp, where it -passes through a 5 m by 1.5 m open-footed concrete box culvert. Bottom substrates at the culvert crossing consist of gravel over bedrock with channel dimensions 3 m wide by 0.2 m deep. Cattails (*Typha latifolia*), purple loosestrife (*Lythrum salicaria*) and various long grasses are the dominant vegetation types along the streambanks. The tributary joins Green‘s Creek proper, several metres farther downstream. Green‘s Creek then flows under the Queensway and enters the Ottawa River some distance

downstream. The banks of Green‘s Creek are relatively steep — 7 to 10 m high — and heavily stabilized with rip rap filled gabion baskets which are now well vegetated (Attachment 3, Photographs 7, 8 and 9). The debris line is located approximately 3.5 m above the bankfull level, indicating this stream is subject to large increases in volume during the spring freshet and other major storm events. The upstream and downstream areas of this portion of Green‘s Creek are identical in aspect. The surrounding landscape and catchment is a blend of semi rural to tertiary industrial in character.

The watercourse at this point is approximately 10 m wide and 0.8 to 1.0 m deep. During the survey period the watercourse was very fast flowing and a murky yellow green in colour. Species captured with electro-fishing gear were longnose dace (*Rhinichthys cataractae*), common white sucker, spottail shiner (*Notropis spilopterus*), fathead minnow (*Pimephales promelas*), central mudminnow, pumpkinseed, creek chub and johnny darter (*Etheostoma nigrum*).

Site 7: Borthwick Creek

Borthwick Creek, a tributary of Ramsay Creek enters the study area from the east, crosses under Highway 417 through a 4 m by 3 m concrete box, open-footed culvert. The watercourse appears to have been channelized and an effort at site restoration planting with white elm and speckled alder (*Alnus incana ssp. rugosa*), perhaps 20-30 years ago, was undertaken. The water was turbid during the survey period but was a deeply stained brown during the preliminary site inspection. The stream is quick flowing, with a silty bottom and some rocks throughout the study reach. Channel dimensions were approximately 3 m by 0.4 m deep where it joined the main channel of Ramsay Creek immediately west of the right-of-way. The surrounding area of the stream‘s reach at this point flows through an open grassed field with few individual trees. In general, the catchment area at this point is rural in aspect (Attachment 3, Photograph 10).

Fish species captured electro-fishing included creek chub, central mudminnow, and brook stickleback.

Site 8: Ramsay Creek (West)

Ramsay Creek crosses under Highway 417 through twin 4 m CSP arch culverts, both embedded in the channel substrate to provide a natural streambed. One CSP has been placed at a lower elevation than the other to function as the low flow culvert. The creek flows through the very wide median that is approximately 25 m below the traveled portion of the highway. The landscape is open grassland with purple loosestrife and scattered Manitoba maple lining the riparian zone. Throughout this reach, the stream banks are comprised of riprap filled gabion

baskets and mats that are well covered with vegetation. Within the median the stream is approximately 5 m wide and 0.6 m deep with a silty bottom. The water was turbid on the day of the survey and during the preliminary site investigation. The surrounding landscape and catchment is a blend of rural and industrial since the area is open grassland however, both a large hydro transmission station and a railway are proximal (Attachment 3, Photographs 11 and 12).

The fish captured in Ramsay Creek were central mudminnow and spottail shiner. OMNR fish capture records from 1995 for the subject reach and an additional adjacent 7.6 km of Ramsay Creek were: common shiner (*Notropis cornutus*), spottail shiner, golden shiner (*Notropis crysoleucas*), brook stickleback, johnny darter, brown bullhead (*Ameiurus nebulosus*), common white sucker, creek chub, central mudminnow, and trout perch *(Percopsis omiscomaycus*). Additionally, the OMNR capture data sheet lists bluntnose shiner and fathead shiner, since neither of these colloquial names is known, it is presumed the authors were referring to *Pimephales notatus* and *Pimephales promelas*, the bluntnose and fathead minnows.

Site 9: Ramsay Creek Tributary

A small tributary of Ramsay Creek crosses under Highway 417 from the west just south of the main channel crossing at the hydro corridor and near the railway tracks. This small stream is approximately 4.0 m in width and 0.2 m deep with a muck bottom. Similar to the main Ramsay Creek watercourse, the surrounding overbank area consists of long grasses and purple loosestrife. It is conveyed beneath the east and westbound lanes through an embedded 1.8 m diameter CSP. Given the high-water conditions found in other streams within the study area, this stream's very sluggish flow may indicate it is an intermittent watercourse. It was found, however, to support one species of fish, the brook stickleback. These small adaptable fish may survive the stream's intermittent phase by living in pools within the culvert itself. The surrounding landscape is identical to Site 8 (Attachment 3, Photograph 13, and 14).

Sites 10 and 11: McEwan Creek Tributary No.s 1 and 2 (South Branch has two crossings)

McEwan Creek is a significant tributary of Ramsay Creek that flows under the Queensway from the southwest through a large diameter concrete box culvert. Two tributaries join within the right-of-way immediately west of the southbound lanes (Photograph 15 and 16). The channel reach at the highway crossing is 5 m wide and 0.3 m deep with a sand bottom. The watercourse appears to be heavily sedimented with sand, which it receives from upstream. The downstream area is heavily eroded with steep banks of clay. The upstream confluence of the two tributaries has an artificially enhanced cobble bottom. Both tributaries appear to have been realigned. The northerly tributary is 2 m wide with a well-defined pool-riffle sequence indicating good quality fish habitat. The southerly branch, however, is gabion basket lined for most of its length where it

has been diverted north for several hundred metres to flow parallel to the Highway and adjacent to a hydro right-of-way. Wherever the gabion lining is absent, bank erosion is active. Purple loosestrife and long grasses line the banks and both the tributaries and the main channel flow through open grasslands.

Farther south, the second and smaller McEwan tributary flows under the southbound lanes through a 3 m diameter culvert and thence along the median between the southbound and northbound lanes and again passes under the southbound lanes to connect with Ramsay Creek (Photograph 17, and 18, Attachment 3). The streambed here is comprised of sand and clay. The surrounding landscape and catchment is rural agricultural in aspect.

Electro-fishing results at these two stations produced central mudminnows and longnosed dace and creek chub.

Site 12: Ramsay Creek (East)

The upper reach of Ramsay Creek crosses Highway 417 again north of Anderson Road at Baseline and the Ramsayville Road (County Road 26). Two large bridge structures, carrying the north and southbound lanes of the highway, span the creek valley. The creek is also directed through a 7 m CSP arch underneath the southbound structure. The upstream channel is 2 m wide and 0.8 m deep with grasses, loosestrife and reed canary grass lining the occasionally gabion protected banks. Downstream, the watercourse has been channelized and gabion lined beneath the northbound bridge (Attachment 3, Photograph 19 and 20). A 1 m concrete box culvert delivers intermittent local drainage water into the watercourse from the south side of the streambank just east of the arched culvert. The streambed throughout this reach is clay with some occurrences of sand and cobble. The banks are well stabilized by both tall grasses and shrubs. The surrounding landscape and catchment is rural.

Fish species captured during the survey included fathead minnows, creek chub, spottail shiner, brook stickleback, and central mudminnow.

5.0 DISCUSSION

Of the 13 watercourses surveyed, all but one, Site 1B, an intermittent tributary of Stillwater Creek, were found to be fish habitat under the definition of the federal *Fisheries Act*. All the watercourses supported warmwater fish species. Several small diameter cross culverts encountered within the study limits that conveyed storm ditch drainage were not considered fish habitat.

The quality of the fish habitat varied widely between the different watercourses. Those watercourses with the most degraded types of habitat were usually associated with heavily urbanized catchment areas. In these instances, the streams were subject to wide fluctuations in flow with major storm events producing almost immediate flood condition of a short duration followed by prolonged periods of low flow. This has produced significant erosion and sedimentation problems and several of the watercourses have been realigned and had their stream channels artificially hardened with rip rapped gabion baskets. In particular, the watercourses associated with Graham, Borthwick, and Pinecrest Creeks seem to be particularly effected.

Some smaller watercourses examined may, during periods of prolonged drought as was experienced in the summer of 2002, become intermittent. This would almost certainly apply to the Site 9 Ramsay Creek tributary, but may also affect Borthwick, one of the Stillwater Creek tributaries, and one of the McEwan Creek tributaries. Despite this, all these streams support fish populations. In particular, species such as brook stickleback and central mudminnow are well adapted to these conditions. Although these species are not considered to be either a commercial or recreational species they do contribute directly to fish habitat as forage fish.

5.1 Assessment of Potential Impacts

The highway 417 improvements under consideration will result in the need for three culvert extensions as well as pier extensions to permit widenings of the Rideau River and Rideau Canal bridges (6 piers in total). These modifications may result in a harmful alteration, disturbance or destruction of fish habitat (a "HADD") and may require compensation in accordance with the "DFO Fish Habitat Conservation and Protection Guidelines for Attaining No Net Loss". Drawings identifying the proposed works that may impact fish habitat can be reviewed in **Attachment 1**.

Culvert extensions are necessary for 1.2 m diameter CSPs under the northbound lane (at approximately 18+700) and southbound lane (at approximate survey chainage 18+575) of Highway 417. These culverts convey ditch drainage from the west side and across the median to

Highway 417 (Ottawa Queensway), Preliminary Design Study for Capacity and Operational Improvements, from Highway 416 to Anderson Road
MTO W. P. 663-93-00
Fisheries and Aquatic Ecosystem Technical Report

the east side of the Highway during storm events only. There is no fish habitat associated with these culverts, as opposed to the Ramsay Creek Tributary crossing (Site 9) 400 m to the west and McEwan Creek crossing (Site 10) 250 m to the east. Extensions to the northbound inlet (approximately 16 m) and southbound outlet (approximately 4 m) are proposed to permit roadway widenings. Shrub plantings at disturbed culvert ends and the use of a native species seed mix should adequately mitigate impacts of the local removal of ground cover.

At Graham Creek (16+500 – Site 2) a 16 m extension is proposed to the open footing box culvert. This culvert can be extended with the existing open footing design; thus, the streambed can be maintained in its natural state. A potential **80 m^2** of aquatic habitat (5 m wide channel X 16 m extension) may be impacted. Should a HADD be determined here, substrate enhancements over disturbed areas of the streambed and native, indigenous shrub plantings on disturbed areas of streambank should provide adequate compensation for disruption of aquatic habitats as a result of the construction.

Pier extensions ranging from 4 to 5 m upstream and 3.6 m downstream are proposed for the four existing in-water piers supporting the Rideau River bridge, resulting in the loss of approximately **122 m^2** (4 piers X 4.5 m extension {average} X 3.75 m wide + 4 piers X 3.6 m extensions X 3.75 m wide) of river bed. In order to compensate for this loss it is recommended that a 1 m wide band of 75-300 mm diameter river stone be placed entirely around each of the four extended piers, thus providing approximately **310 m^2** of enhanced streambed habitat. (Two alternative widenings are under consideration for the Rideau River bridge: a uniform 6 m deck widening {and pier extensions}, or a tapered deck widening from 1.3 to 6 m {with variable pier extensions}. We have used the worst case – the uniform 6 m widening – for the loss and gain calculations.)

A similar approach to a 6 m deck widening and two 6 m pier extensions at the downstream (north) side of the Rideau Canal structure will provide approximately **146 m^2** of enhanced streambed habitat for an estimated **loss of 45 m^2** of canal bed.

5.2 Mitigation Measures

Rigorous mitigation measures will be required in order to protect aquatic habitats from the impacts of roadway improvements that will occur from deleterious substances as the sediments resulting from exposed soils, granular road base and shoulder materials, oils from pavement application, construction vehicle and equipment leakage, concrete debris from demolition operations, and accidental spills.

The warm water habitat characteristics identified at the watercourse crossings will result in construction timing guidelines as established by the Ministry of Natural Resources for culvert works that may be considered by MTO, typically set at a July 1 through March 15 window for construction in or adjacent to many of the 12 watercourse crossings identified as fish habitat.

The following additional points have been considered:

- all culvert extensions identified as occurring within fish habitat must be designed to accommodate fish passage;
- closed culvert extensions should have at least 10 percent of the culvert diameter embedded below the upstream and downstream channel invert;
- where appropriate, culverts should be backfilled with imported substrate material matching the existing upstream and downstream bottom type and gradient;
- for existing velocity barriers or perched culverts, ensure that the proposed culvert extension or replacement eliminates any barrier to fish movement;
- ensure that a proposed culvert extension does not create a velocity barrier; and,
- to minimize downstream impacts, all in-water work should be done *in the dry* using cofferdams and/or flow diversion;

5.3 Additional General Mitigation Measures

- All materials and equipment used for the purpose of site preparation and project completion shall be operated and stored in a manner that prevents any deleterious substance (e.g. petroleum products, debris etc.) from entering the water.
- Any stockpiled materials shall be stored and stabilized away from the water.
- Vehicle and equipment re-fuelling and maintenance shall be conducted away from the water.
- Any part of equipment entering the water shall be free of fluid leaks and externally cleaned/degreased to prevent any deleterious substance from entering the water.
- Only clean material free of fine particulate matter shall be placed in the water.
- Sediment and erosion control measures shall be implemented prior to work and maintained during the work phase, to prevent entry of sediment into the water.
- All sediment and erosion control measures shall be inspected daily to ensure that they are functioning properly and are maintained and/or upgraded as required.

Highway 417 (Ottawa Queensway), Preliminary Design Study for Capacity and Operational Improvements, from Highway 416 to Anderson Road
MTO W. P. 663-93-00
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- If the sediment and erosion control measures are not functioning properly, no further work shall occur until the sediment and/or erosion problem is addressed.
- All disturbed work areas shall be stabilized as soon as possible after project completion.
- Sediment and erosion control measures shall be left in place until all disturbed areas have been stabilized.
- All disturbed areas susceptible to erosion/soil loss with potential for transport into the water, shall be stabilized and re-vegetated as required upon completion of work and restored to a pre-disturbed state or better.
- Natural structures such as logjams and in-stream woody cover shall not be removed unless they represent a barrier to flows or fish movement.

6.0 CONCLUSIONS

Watercourses supporting good quality fish habitat are those located away from the core of downtown Ottawa that have their catchment areas in primarily rural landscape. Those in this category include Green's Creek, Ramsay Creek, the main Stillwater Creek channel and the Rideau River. One exception to this may be Pinecrest Creek within the study reach, which appeared to have good quality fish habitat by virtue of its course through a forested portion of the Ottawa Greenbelt.

The implementation of identified mitigation measures during the Highway 417 upgrading will be necessary to protect existing fish habitats as well as their associated riparian vegetation zones located along the length of the study area. The measures suggested for implementation at the identified watercourses to maintain and improve fish habitat status following culvert/pier extension should be adequate to fully mitigate/compensate for harmful aquatic impacts that may occur as a result of the proposed highway improvements.

As the Highway upgrading project proceeds to detail design, further work will occur to more accurately define impacts to fish habitat and necessary mitigation (and compensation) measures.

Highway 417 (Ottawa Queensway), Preliminary Design Study for Capacity and Operational Improvements, from Highway 416 to Anderson Road
MTO W. P. 663-93-00
Fisheries and Aquatic Ecosystem Technical Report

7.0 REFERENCES

Dodge, D.P, G.A. Goodchild, I. MacRitchie, J.C. Tilt and D.G. Waldriff. 1995. Manual of Instructions Aquatic Habitat Inventories. Fisheries Branch, Ministry of Natural Resources. Toronto. 246 pp.

Ministry of Transportation, Ontario. 1994. Environmental Manual – Fisheries. 240 pp.

MTO/MNR. 1993. A Fisheries Protocol. 30 pp.

Scott, W.B. and E.J. Crossman. 1973. Freshwater Fishes of Canada. Bulletin 184 – Fisheries Research Board of Canada. Department of Fisheries and Oceans, Ottawa, Ontario. 966 pp.

Ministry of Natural Resources and Forestry

Kemptville District

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Ministère des Richesses naturelles et des Forêts

District de Kemptville

10, promenade Campus
Case postale, 2002
Kemptville ON K0G 1J0
Tél.: 613 258-8204
Téléc.: 613 258-3920

Wed. Nov 29, 2017

Rudi Warmé
BT Engineering (BTE)
223 William Street
Belleville, Ontario
K8N 3K1

rudi.warme@bteng.ca

Attention: Rudi Warmé

Subject: **Information Request - Infrastructure (Drain, Bridge, Culvert)**
Project Name: **EA for replacement of Highway 417 Queensway Metcalfe, Elgin, and Main Street bridges, and Nicholas Street Interchange**
Site Address: **Highway 417 at Metcalfe, Elgin, and Main Street bridges, and Nicholas Street Interchange, Ottawa**
Our File No. **2017_NEP-4315**

Natural Heritage Values
The Ministry of Natural Resources and Forestry (MNRF) Kemptville District has carried out a preliminary review of the area in order to identify any potential natural resource and natural heritage values.

The following Natural Heritage values were identified for the general subject area:

- River (Non-Sensitive)

Municipal Official Plans contain information related to natural heritage features. Please see the local municipal Official Plan for more information, such as specific policies and direction pertaining to activities which may impact natural heritage features. For planning advice or Official Plan interpretation, please contact the local municipality. Many municipalities require environmental impact studies and other supporting studies be carried out as part of the development application process to allow the municipality to make planning decisions which are consistent with the Provincial Policy Statement (PPS, 2014).

The MNRF strongly encourages all proponents to contact partner agencies and appropriate municipalities early on in the planning process. This provides the proponent with early knowledge regarding agency requirements, authorizations and approval timelines; Ministry of the Environment and Climate Change (MOECC) and the local Conservation Authority may require approvals and permitting where natural values and natural hazards (e.g., floodplains) exist.

As per the Natural Heritage Reference Manual (NHRM, 2010) the MNRF strongly recommends that an ecological site assessment be carried out to determine the presence of natural heritage features and species at risk and their habitat on site. The MNRF can provide survey methodology for particular species at risk and their habitats.

The NHRM also recommends that cumulative effects of development projects on the integrity of natural heritage features and areas be given due consideration. This includes the evaluation of the past, present and possible future impacts of development in the surrounding area that may occur as a result of demand created by the presently proposed project.

In Addition, the following Fish species were identified: alewife, Baitfish, banded killifish, black crappie, blackchin shiner, bluegill, bluntnose minnow, brown bullhead, common carp, emerald shiner, golden shiner, greater redhorse, johnny darter, johnny darter/tesselated darter, largemouth bass, logperch, mottled sculpin, muskellunge, northern pike, pumpkinseed, river redhorse, rock bass, shorthead redhorse, slimy sculpin, smallmouth bass, Sunfishes, walleye, white sucker, yellow perch.

Species at Risk
A review of the Natural Heritage Information Centre (NHIC) and internal records indicate that there is a potential for the following threatened (THR) and/or endangered (END) species on the site or in proximity to it:

- American Eel (END)
- Barn Swallow (THR)
- Blanding's Turtle (THR)
- Butternut (END)
- Chimney Swift (THR)
- Eastern Small-footed Myotis (END)
- Lake Sturgeon (THR)
- Northern Long-eared Bat (END)
- Tri-Colored Bat (END)

All endangered and threatened species receive individual protection under section 9 of the ESA and receive general habitat protection under Section 10 of the ESA, 2007. Thus any potential works should consider disturbance to the individuals as well as their habitat (e.g. nesting sites). General habitat protection applies to all threatened and endangered species. Note some species in Kemptville District receive regulated habitat protection. The habitat of these listed species is protected from damage and destruction and certain activities may require authorization(s) under the ESA. For more on how species at risk and their habitat is protected, please see: https://www.ontario.ca/page/how-species-risk-are-protected.

If the proposed activity is known to have an impact on any endangered or threatened species at risk (SAR), or their habitat, an authorization under the ESA may be required. It is recommended that MNRF Kemptville be contacted prior to any activities being carried out to discuss potential survey protocols to follow during the early planning stages of a project, as well as mitigation measures to avoid contravention of the ESA. Where there is potential for species at risk or their

habitat on the property, an Information Gathering Form should be submitted to Kemptville MNRF at sar.kemptville@ontario.ca.

The Information Gathering Form may be found here:
http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/FormDetail?OpenForm&ACT=RDR&TAB=PROFILE&ENV=WWE&NO=018-0180E

For more information on the ESA authorization process, please see:
https://www.ontario.ca/page/how-get-endangered-species-act-permit-or-authorization

One or more special concern species has been documented to occur either on the site or nearby. Species listed as special concern are not protected under the ESA, 2007. However, please note that some of these species may be protected under the Fish and Wildlife Conservation Act and/or Migratory Birds Convention Act. Again, the habitat of special concern species may be significant wildlife habitat and should be assessed accordingly. Species of special concern for consideration:

- Peregrine Falcon (SC)
- Snapping Turtle (SC)

If any of these or any other species at risk are discovered throughout the course of the work, and/or should any species at risk or their habitat be potentially impacted by on site activities, MNRF should be contacted and operations be modified to avoid any negative impacts to species at risk or their habitat until further direction is provided by MNRF.

Breeding birds may be present on site. The Migratory Birds Convention Act and the ESA may be triggered if these birds are affected. Negative impacts may be avoided by clearing vegetation outside of the breeding bird season (April 15th – August 15th) or by surveys conducted by a qualified professional to ensure no breeding birds are present before clearing of vegetation.

No work should occur in turtle overwintering habitat from October 16th – March 15th in order to protect hibernating turtles. Turtles can be found travelling on land during the active season (April 1st – October 30th). If the proposed works are to occur during these times, the MNRF recommends fencing off the site prior to work being undertaken in order to prevent turtles from accessing the site.

Please note that information regarding species at risk is based largely on documented occurrences and does not necessarily include an interpretation of potential habitat within or in proximity to the site in question. Although this data represents the MNRF's best current available information, it is important to note that a lack of information for a site does not mean that additional features and values are not present. It is the responsibility of the proponent to ensure that species at risk are not killed, harmed, or harassed, and that their habitat is not damaged or destroyed through the activities carried out on the site.

The MNRF continues to strongly encourage ecological site assessments to determine the potential for SAR habitat and occurrences. When a SAR or potential habitat for a SAR does occur on a site, it is recommended that the proponent contact the MNRF for technical advice and to discuss what activities can occur without contravention of the Act. For specific questions regarding the

Endangered Species Act (2007) or SAR, please contact MNRF Kemptville District at sar.kemptville@ontario.ca.

The approvals processes for a number of activities that have the potential to impact SAR or their habitat have recently changed. For information regarding regulatory exemptions and associated online registration of certain activities, please refer to the following website: https://www.ontario.ca/page/how-get-endangered-species-act-permit-or-authorization.

Please note: The advice in this letter may become invalid if:

- The Committee on the Status of Species at Risk in Ontario (COSSARO) re-assesses the status of the above-named species OR adds a species to the SARO List such that the section 9 and/or 10 protection provisions apply to those species; or
- Additional occurrences of species are discovered on or in proximity to the site.

This letter is valid until: Thu. Nov 29, 2018

For any questions or concerns, please do not hesitate to contact me.

Sincerely,

Jane Devlin
Management Biologist
jane.devlin@ontario.ca

Encl.\
-ESA Infosheet
-NHIC/LIO Infosheet

Ministry of Natural Resources and Forestry

Kemptville District

10 Campus Drive
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Téléc.: 613 258-3920

December 8, 2017

SUBJECT: UPDATED IN-WATER WORK TIMING GUIDELINES IN KEMPTVILLE DISTRICT

To: all interested parties

The Ministry of Natural Resources and Forestry Kemptville District Office has recently reviewed and updated its In-water Work Timing Guidelines. These guidelines are intended to provide the timing for in-water work related to an activity, in order to protect fish during spawning and other critical life stages. Timing guidelines are based on species* presence and are therefore subject to change if new information becomes available.

Timing Guidelines in Kemptville District are:

Waterbody (and applicable geography or Fisheries Management Zone)	Timing Guidelines (no in-water works)
○ St. Lawrence River (FMZ 20)	March 15 – July 15 (Spring spawning species)
○ Ottawa River – Lac Des Chats (FMZ 12)	October 1 to July 15 (Spring and fall spawning species, including Lake Trout and Lake Whitefish)
○ Ottawa River – Lac Deschenes (FMZ 12)	October 15 to July 15 (Spring and fall spawning species, including Cisco)
○ Ottawa River – Lac Dollard des Ormeaux (FMZ 12)	January 1 to July 15 (Winter and spring spawning species, including Burbot)
○ Big Rideau Lake (South Burgess and South Elmsley Twps) ○ Charleston Lake (Lansdowne and Escott Twps) ○ Crow Lake (South Crosby Twp)	October 1 to June 30 (Spring and fall spawning species, including Lake Trout)
○ Bass Lake (South Elmsley Twp) ○ Lower Rideau Lake (South Elmsley Twp) ○ Bob's Lake (South Sherbrooke Twp) ○ Christie Lake (South Sherbrooke Twp) ○ Dalhousie Lake (Dalhousie Twp) ○ Davern Lake (South Sherbrooke Twp) ○ Farren Lake (South Sherbrooke Twp) ○ Grippen Lake (Leeds Twp) ○ Indian Lake (South Crosby Twp) ○ Little Long Lake (Lansdowne Twp) ○ Millpond Lake (South Burgess) ○ Otter Lake (South Elmsley, South Burgess and Bastard Twps)	October 15 to June 30 (Spring and Fall spawning species, including Lake Whitefish and Cisco)
○ Otty Lake (North Burgess and North Elmsley Twps) ○ Pike Lake (North Burgess Twp) ○ Silver Lake (South Sherbrooke Twp) ○ Redhorse Lake (Lansdowne Twp) ○ Tay River (South Sherbrooke, Bathurst, Drummond and North Elmsley Twps) ○ Wolfe Lake (North Crosby Twp)	
○ Bennett Lake (Bathurst Twp) ○ Crosby Lake (North Crosby Twp) ○ Big Rideau Lake (South Burgess, Bastard and South Elmsley Twps) ○ Gananoque River (Leeds Twp) ○ Lac Georges (Plantagenet and Alfred Twps) ○ Gillies Lake (Lanark Twp) ○ Little Crosby Lake (North Crosby Twp) ○ McLaren Lake (North Burgess Twp) ○ Mississippi Lake (Drummond, Beckwith and Ramsay Twps) ○ Mississippi River (Beckwith, Ramsay, Pakenham and Fitzroy Twps) ○ Raisin River below Martintown dam (Charlottenburgh Twp) ○ Rideau River (Wolford, Oxford, Montague, Marlborough, South Gower, North Gower, Osgood, Nepean and Gloucester Twps) ○ South Lake (Leeds Twp) ○ South Nation River below Plantagenet weir (Plantagenet Twp) ○ Upper Rideau Lake (North Crosby Twp) ○ Westport Sand Lake (North Crosby Twp)	January 1 – June 30 (Winter and spring spawning species, including Burbot)
○ Small rivers and streams (denoted on 1:50,000 National Topographic System maps as being one-lined) ○ All other waterbodies in FMZ 18	March 15 to June 30 (Spring spawning species)

**Additional timing guidelines may apply as they relate to endangered and threatened species for works in both water and wetland areas. Timing guidelines are subject to change, depending on species found in a given waterbody.*

Should you have any questions, please do not hesitate to contact Joffre Côté, Management Biologist (at 613-258-8214 or joff.cote@ontario.ca) or Jane Devlin, Management Biologist (at 613-258-8418 or jane.devlin@ontario.ca).

Sincerely,

John Boos

Resources Management Supervisor
Kemptville District Office
Ministry of Natural Resources and Forestry

Ministry of Natural Resources and Forestry

Natural. Valued. Protected.

Ontario

Email to MNR



Natural Areas and Features Information Request Form

Contact Information

Clear Contact

Name: Rudi Warmé

Address: 223 William Street, Belleville, On, K8N 3K1

**All red fields are mandatory*

Phone Number: (905) 373-5736 ☐ Owner ☑ Consultant

This includes X & Y Coordinates.

E-mail Address: rudi.warme@bteng.ca

Please see page 2 for assistance.

Site Information

Clear Site

Project Name: Queensway Bridges MTO GWP 4170-13-00

Geographic Township: City of Ottawa Lot: Concession:

***Please refer to map on page 2 for info*

X: 45.4123 Y: -75.6834 Address: Rideau Canal under Highway 417 O

***If more than 1 site, please provide all individual coordinates in an attached spreadsheet*

Type of Proposal

Clear Details

- ☐ Severance / Zoning
- ☐ Hydroline clearing
- ☐ RE Projects
- ☐ Aggregate Project
- ☑ Drains / Roads / Culverts
- ☐ Small Scale Projects (less than 5 hectares)
- ☑ Large Scale Projects (5 hectares or greater)
- ☐ Other: Bridge Replacements

Attachments ****Please attach a Site Map showing the area of interest*

☐ Picture ☑ Map(s) ☐ Engineered Drawings ☐ Other: _____

Request

I would like to request the following information for the property identified above:

Site 1, Rideau Canal - existing fisheries information/aquatic SAR

To better respond to your request please briefly outline the purpose for which this information is required
(e.g. proposed development, lot severance, etc. or attach details):

MTO EA for "rapid" replacement of Highway 417 Queensway Metcalfe Street, Elgin Street, Rideau Canal and Main Street bridges, with new bridge assembly/old bridge demolition in vacant adjacent areas (MTO ROW).

Date of works proposed: 1 / Dec / 2020

Please forward the competed form to:

Kemptville.Inforequest@Ontario.ca OR **Fax: 613-258-3920**

Attention: Information Requests

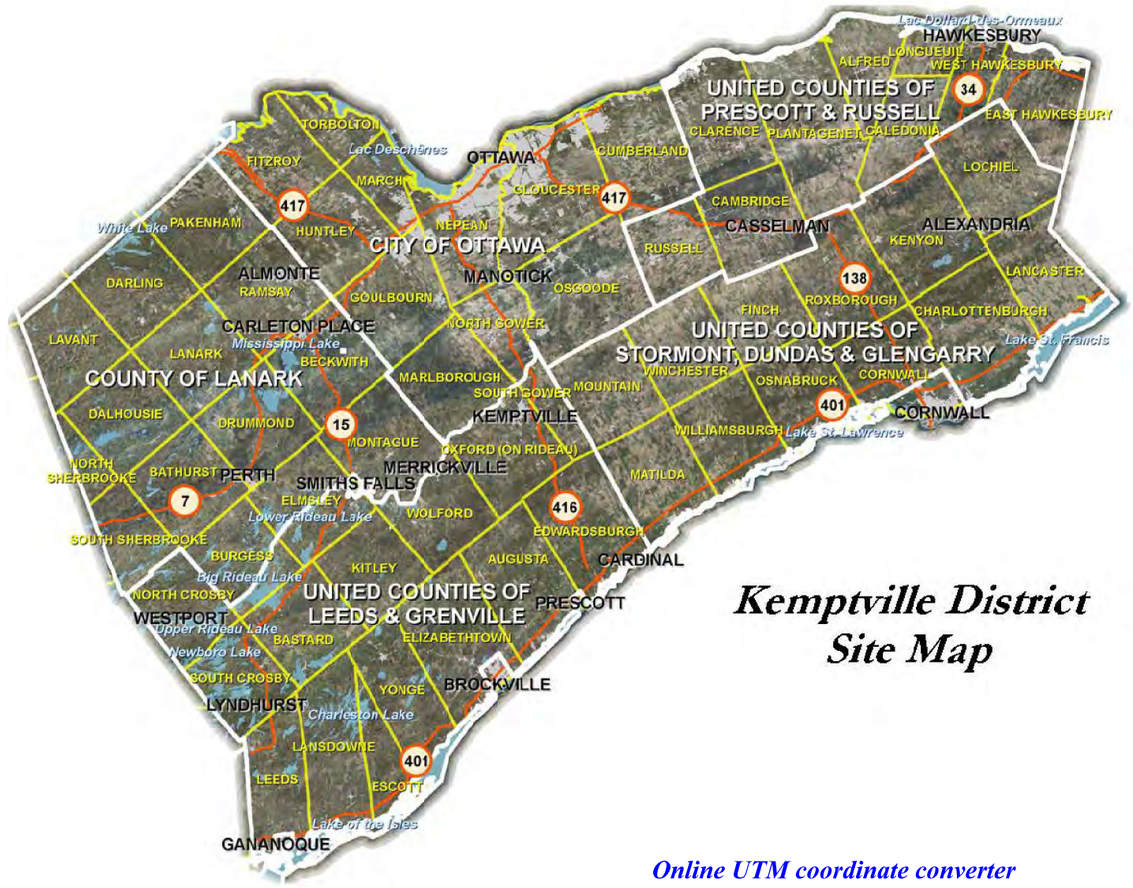
10 Campus Drive, Postal Bag 2002

Kemptville, ON K0G 1J0

Personal information contained in this form is collected in order to fulfill your request, respond to your inquiries and for other administration purposes. With regard to the personal information it collects, the ministry is bound by privacy protection rules under the Freedom of Information and Protection of Privacy Act and takes all necessary steps to safeguard personal information collected.

Please Note: This request MUST be made by the property owner or by someone acting on their behalf. Depending on the nature of the request, it may take 6-8 weeks to respond to your inquiry. If the request does not include the mandatory information, it may delay response time.

☐ ***I have read the above and agree to all Terms and Conditions***



Kemptville District Site Map

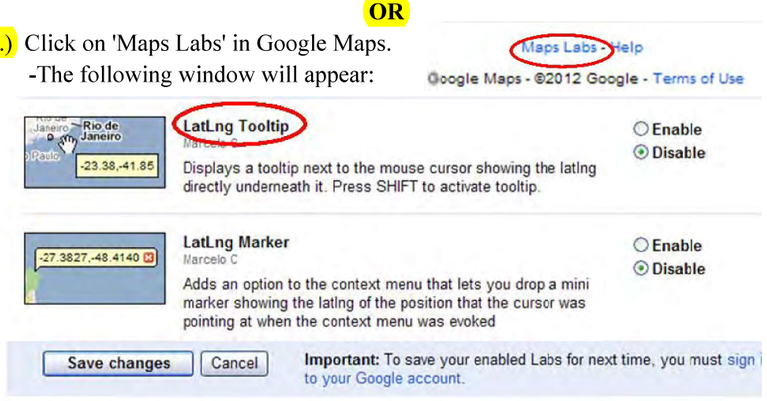
Online UTM coordinate converter

How to get X, Y coordinates from Google Maps (2 options):

1.) Right-click on the map, at the point of interest, and select 'What's here?'.
-The Latitude & Longitude of the mouse click, in decimal degrees, will automatically appear in the Search box.

OR

2.) Click on 'Maps Labs' in Google Maps.
-The following window will appear:



-Enable the LatLng Tooltip and then Save Changes.
-Now every time the **SHIFT** button is pressed in Google Maps, a Tool tip will appear with the Latitude and Longitude of the mouse location in decimal degrees.

Inventory of Fish Considered to be at Risk in the Rideau Canal System Including Pugnose Shiner (*Notropis anogenus)*, Bridle Shiner (*Notropis bifrenatus*), River Redhorse (*Moxostoma carinatum*) and American Eel (*Anguilla rostrata*)

Submitted to Parks Canada

March 2010

Alison Colotelo & Steven J. Cooke

Fish Ecology and Conservation Physiology Laboratory Report Series 10-01

Department of Biology and Institute of Environmental Science

Carleton University, Ottawa, Ontario, Canada

Suggested Citation: Colotelo, AH and Cooke, SJ. 2010. Inventory of Fish Considered to be at Risk in the Rideau Canal System Including Pugnose Shiner (*Notropis anogenus*), Bridle Shiner (*Notropis bifrenatus*), River Redhorse (*Moxostoma carinatum*) and American Eel (*Anguilla rostrata*). Fish Ecology and Conservation Physiology Laboratry Research Report Series 10-01. Carleton University, Ottawa, Ontario, Canada.

Executive Summary

This report represents the work completed by the Fish Ecology and Conservation Physiology Laboratory at Carleton University to fulfill the requirements of the contract assignment with Parks Canada. The purpose of this contract was to conduct inventories of the fish species present throughout the Rideau Canal system, particularly throughout the reaches of the system between Big Rideau Lake and Kingston. Focus was placed on indentifying the presence of four species considered at risk in accordance with the Species at Risk Act for Ontario (SARO); pugnose shiner (*Notropis anogenus*), bridle shiner (*Notropis bifrenatus*), river redhorse (*Moxostoma carinatum*) and american eel (*Anguilla rostrata*). The study design in 2009 complemented earlier fish inventories conducted in the upper and middle reaches of the Rideau River, by focusing on the lower reaches. The findings of these studies identify areas of the Rideau River system which could be prioritized as sites of interest for future research and species protection.

A total of 67 sites were sampled along the Rideau River system between Ottawa and Kingston between September and November 2009, using a combination of 5 different collection techniques (hoop nets, backpack electrofishing, seine netting, boat electrofishing, pot traps). However, significant focus was placed on the use of the boat electrofisher due to its ability to capture a large number of fish of various sizes and cover a large area with reduced staff effort compared to the other methods. During the sampling period, 35 species of fish were collected, which ranged in size from juveniles and small minnow species to adult muskellunge.

The majority of fish species encountered were common to the Rideau River system and highlighted the centrachid dominated assemblages found throughout. One

of the target species was encountered. River redhorse, in both juvenile and adult life stages, were collected in one reach of the Rideau River (i.e. between Black Rapids and Long Island). This encounter highlights an area for potential future research by Parks Canada or other management agencies. For conservation reasons, there is a need to understand the biology and ecology of this species in relation to their occupancy of this habitat.

Acknowledgements

Scott Smithers (Ontario Ministry of Natural Resources) provided OMNR Scientific Collection Permits. Brian Coad and Sylvie Laframboise kindly accepted voucher specimens submitted to the Canadian Museum of Nature and verified species ID for several samples. A number of students and volunteers from Carleton University assisted with the surveys specifically Cody Dey, Ally Pettit and Katrina Dingle. Valerie Blazeski and Hillary Knack served as contacts for Parks Canada and facilitated the inventory.

1.1 Introduction

This report summarizes a fish inventory conducted throughout the Rideau Canal system during the fall of 2009. In particular, several species of concern were of interest to Parks Canada: pugnose shiner (*Notropis anogenus*), bridle shiner (*Notropis bifrenatus*), river redhorse (*Moxostoma carinatum*) and American eel (*Anguilla rostrata*). This study serves as a continuation of studies executed in 2007 and 2008, when the reaches of the canal between Hog's Back Locks to Big Rideau Lake were focused on (Mapleston et al., 2007; Hair & Cooke, 2009). These studies, along with other surveys of the Rideau Canal system (executed by OMNR, Parks Canada and Rideau Valley Conservation Authority) have failed to identify these species. The previous lack of collection of these species in the Rideau system suggests that these species are scarce, if they are indeed present in this system.

1.2 Background: Target Species of Concern

The principle aim of this study was to determine the presence and abundance of four fish species within the Rideau Canal system. These species have been designated as a conservation concern by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC). Bridle shiner and American eel have both been designated as "Special Concern" while the pugnose shiner and river redhorse are both "Endangered" (COSEWIC, 2009). All four species occupy different habitats, have different life histories and specific distributions.

The American eel has been listed as a "Special Concern" since 2006. Once found throughout Lake Ontario and the Upper St. Lawrence River, the population levels have decreased by 99% since the 1970s (COSEWIC, 2006). It is believed to be impacted by

anthropogenic impacts, specifically the presence of dam/barriers, habitat degradation, and fishing at all life stages (MacGregor et al., 2008). Their decline is of particular concern since American eels are panmictic (i.e., a single, nonstructured breeding population), and population levels declines throughout the world will impact recruitment.

River redhorse are part of the Catostomidae family (suckers) and are found throughout eastern United States and southeastern Canada. They have very specific habitat and spawning requirements and are sensitive to siltation and pollution. For these reasons, population levels have decreased over the past 50 years, with COSEWIC designating them as "Special Concern" in 1983. This status was re-evaluated in 1987 and 2006, with the status unchanged (COSEWIC, 2006).

Both the bridle and pugnose shiner have limited distribution throughout Canada and the United States. Currently the pugnose shiner is listed as endangered COSEWIC, 2002) and bridle shiner is listed as special concern (SARA, 2001). They are both members of the Cyprinidae family (carps and minnows) and were once found throughout Lake Ontario and the St. Lawrence River. Both species are particularly sensitive to high turbidity and poor water conditions which have contributed to their declines.

2.1 Sampling Sites

This study was a continuation of sampling previously done throughout the Rideau system. Studies in 2007 and 2008 focused on areas of the Rideau Canal between Hog's Back Locks and Big Rideau Lake. The 2009 study focused on the reaches of the system between Big Rideau Lake and the Kingston Inner Harbour. In addition, some sites that had been sampled in previous years were resampled. Also, as requested by Parks Canada, sites in

Upper Rideau Lake, Newboro Lake and Indian Lake were sampled to compliment sediment sampling that is occurring.

Between September 21 and November 8, 2009, a total of 67 sites were surveyed throughout the Rideau Canal system (Table 1). Figure 1-16 demonstrate detailed site locations of each section of the Rideau Canal system sampled. These sites represent habitat and flow conditions which represent ideal conditions for the target species. These conditions were based on prior consultation with knowledgeable scientists and biologist that have conducted similar work, local individuals who are familiar with certain areas of the Rideau Canal system and literature pertaining to the targeted species.

Habitat conditions of particular interest included upsteam and downstream of barriers (where migratory species such as American eels may be in higher densities); clear, calm water with vegetation and silt bottom (preferred habitat of pugnose and bridle shiner; Figure 17); and faster flowing riffle-run habitats (commonly occupied by redhorse species).

In conjunction with a M.Sc. thesis at Carleton University, Newboro Lake was used extensively as a study site during the spring of 2009. Fifty-nine sets of hoop nets were set from April 4 until June 22, 2009 in the southeastern portion of the lake, commonly known as "The Bog". All fish captured were identified to species and this data has been included in this report.

3.1 Sampling Gear

Several gear types were used throughout this study including backpack electrofisher, boat electrofisher, seine net, hoop nets and pot traps. It was determined quickly that boat electrofishing was the most efficient technique and was predominantly employed for the remainder of the study.

A HT-2000 24-volt battery powered backpack electrofisher (Halltech, Guelph, ON, Canada) was used in shallow (<1m) areas along shore, which were easily traversable by wading for the operators. A hand seine with a purse, which was 5m long and 1m in depth, was used in shallow, low flow areas that were reasonably devoid of debris. Hoop nets were used in 1.0 to 2.0m deep, slow moving water in primarily in lakes and shallow bays. The nets used in this study had 8 hoops, 1.0m in diameter, and a lead of 20m. Netting material was 2-inch stretch mesh. For the sampling done in Newboro Lake, 2 hoop nets faced each other and were attached by the leads, while other sampling used the leads tied to shore. Hoop nets were set for 24 – 48 hours before being retrieved and the contents processed. Pot traps were used in shallow (<2m), low flow areas.

A 2.5 Smith-Root Generator Powered Pulsator boat electrofisher (Smith-Root Inc., Vancouver, WA, USA) was found to be the most efficient method of sampling, when compared to the other sampling methods. Using the boat electrofisher allowed sampling to occur at a variety of depths (0.5m – 2.5m), in all habitat types (i.e. riffle habitats, shallow bays, variety of flow conditions), and allowed us to sample small (i.e. Cyprinids; <100mm) and large (i.e. muskellunge; >1m) fish at the same time. Sites were standardized to approximately 1000 seconds of electrofishing and generally were along the shore, and around islands and shoals, which would not be accessible using other sampling methods.

4.1 Species Encountered

Throughout the study 35 species of fish were encountered including river redhorse (*Moxostoma carinatum*), one of the target species (Table 2). Voucher specimens of juvenile redhorse, blackline shiner species, as well as other minnow species which could not be identified in the field were taken and brought back to the lab to be identified. Extensive

photographs of four species of adult redhorse collected (including river, greater, shorthead and silver) were also taken for confirmation of species. All juvenile redhorse and blackchin shiners collected, as well as a selection of the blacknose shiners were submitted to the Museum of Nature (Ottawa, Ontario) for confirmation of species identification. Nineteen of the species encountered included young of the year individuals (Table 3). The age class determination was based on their total length (Appendix 2).

The predominant group of fish observed in this study was those of the family Centrarchidae, similar to both 2007 and 2008. Fish from the family Percidae, brown bullhead (*Ameirus natalis*), and northern brook silverside (*Labidesthees sicculus*) were also found throughout the system.

In this year of the study, eleven species of fish were captured that had not been encountered in 2007 and 2008. There were also ten species that had been found in the previous two years but were not encountered in 2009.

River redhorse (*Moxostoma carinatum*), as well as three other species of redhorse, were found in the reach of the canal stretching between Black Rapids Locks and Long Island (Figure 18). This is of particular interest as the river redhorse was a target species of this study, and redhorse in these numbers were not observed in the previous two years of this study. This sampling was done after the drawdown of the canal, in preparation of the winter months, and the water levels were approximately 1.0-2.0m lower than in the summer months. The habitat in which they were captured was a low flow area of the river in shallow water (1.0-2.0m). There was moderate coverage of submerged macrophytes and the substrate was primarily silt. The shores of this area were lined with bulrushes and cobble.

Also of interest, was the collection of blackline shiner species throughout the Rideau Canal system. Blackline shiners are a group of shiners which are characterized by a dark lateral line present from the tip of the nose to the base of the tail. Pugnose shiner and bridle shiner, two of the species of interest, are included in this group, however, the specimens collected in this study were not identified as these species. Blackline shiners were not encountered in 2007 or 2008.

5.1 Conclusion and Recommendations

Although in the past two years of this study none of the target species were encountered, this year river redhorse, along with three other species of redhorse, were sampled in the reach of the Rideau Canal system which spans from Black Rapids Locks to Long Island. This observation should direct future investigations regarding river redhorse in the Rideau Canal system to this reach. River redhorse are currently considered to be "special concern" by the act and so future management decisions should focus on maintaining habitat and spawning areas for these individuals.

While none of the other species targeted by Parks Canada as being of concern were encountered during this survey, this does not mean that these species are not in fact present in the Rideau River system, but suggests that they may be limited in their abundance in these water bodies.

Future surveys could focus on sampling this area during different seasonal periods, which may change the diversity of species encountered. Also this sampling occurred primarily after the draw down of water in the Hartwell's Locks to Hog's Back Locks reach of the Rideau Canal. The lower water levels in this reach are also translated to close by reaches of the Rideau Canal system, specifically the reach between Black Rapids Locks and

Long Island. This may impact the location of some species of fish, including the river redhorse. Additional sampling should focus on sampling prior to the draw down to determine the area inhabited by these fish throughout their spawning season (May-June), and during the majority of the spring/summer months.

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Figures



Figure 1. Sampling sites in Dow's Lake.



Figure 2. Sampling sites in Hartwell's Locks to Hog's Back Locks reach.



Figure 3. Sampling sites in Hog's Back Locks to Black Rapids Locks reach.



Figure 4. Sampling sites in Black Rapids Locks to Long Island reach.

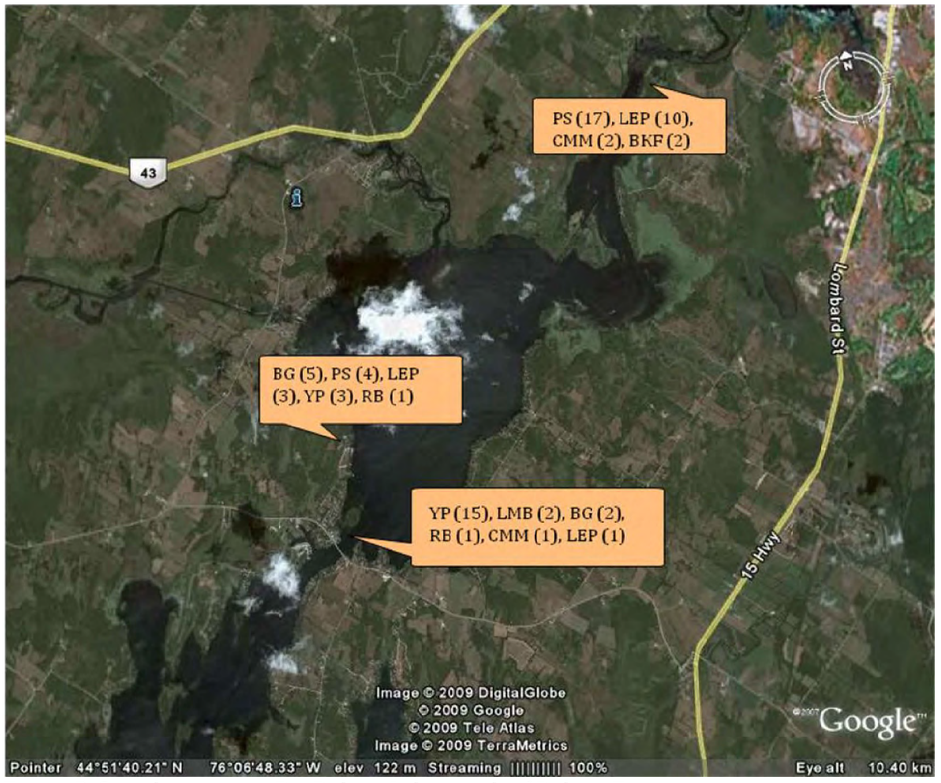


Figure 5. Sampling sites in Big Rideau Lake, north of Rideau Ferry.



Figure 6. Sampling sites in Big Rideau Lake.



Figure 7. Sampling sites around Colonel By Island on Big Rideau Lake.

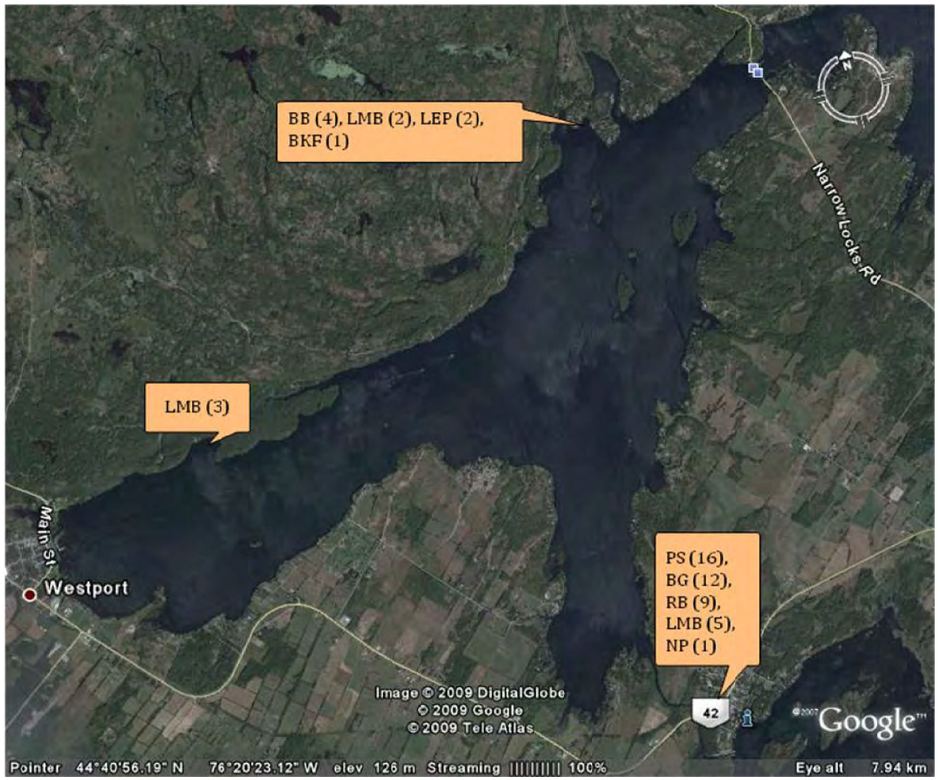


Figure 8. Sampling sites in Upper Rideau Lake.



Figure 9. Sampling sites in Newboro and Indian Lake.



Figure 10. Sampling sites in Opinicon Lake.

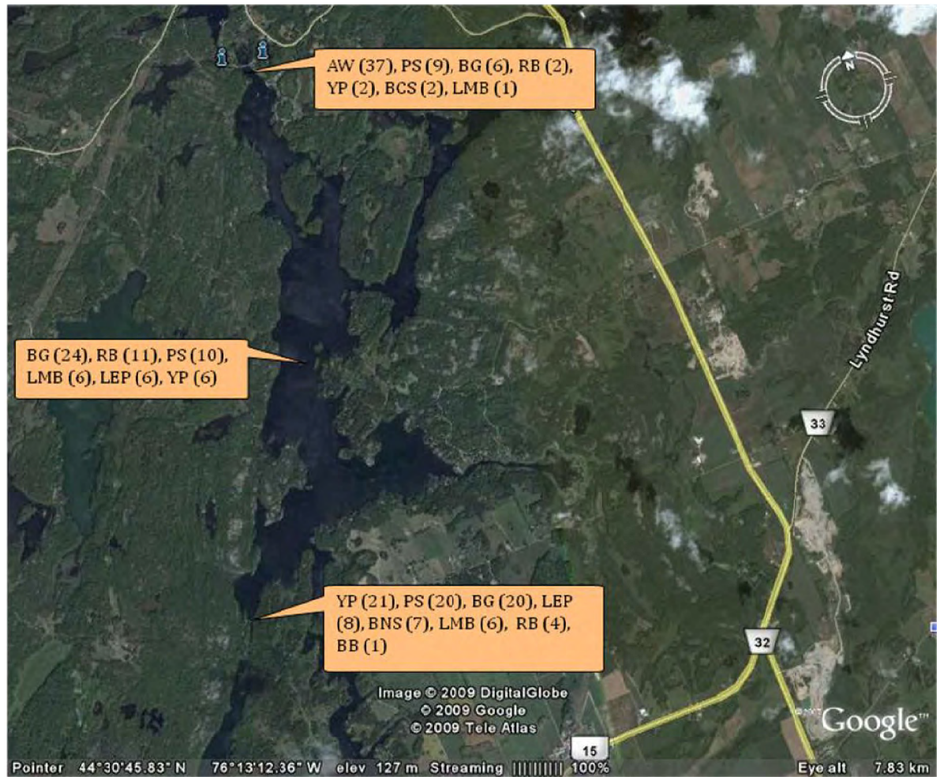


Figure 11. Sampling sites in Whitefish Lake.

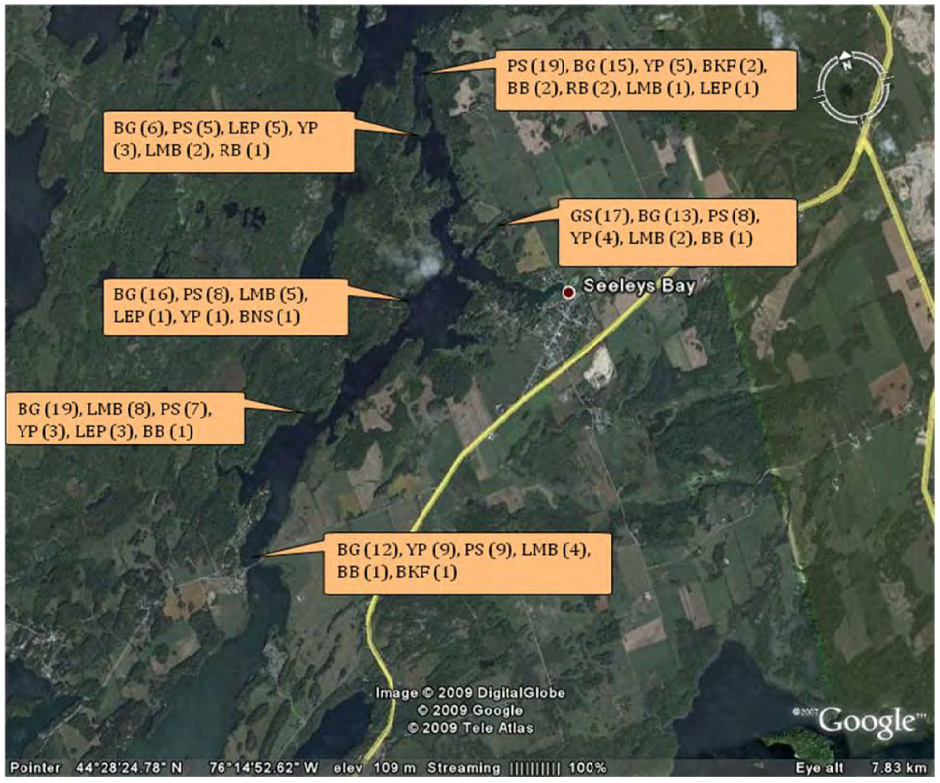


Figure 12. Sampling sites in Little Cranberry Lake.

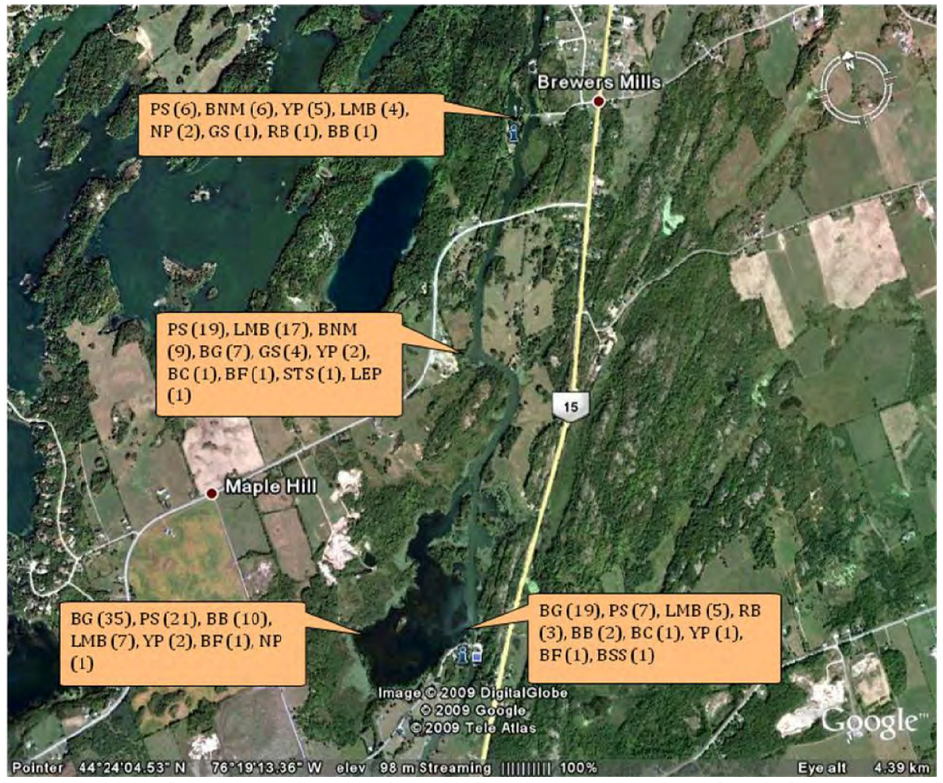


Figure 13. Sampling sites in Upper Brewer Locks to Lower Brewer Locks reach.



Figure 14. Sampling sites in River Styx.



Figure 15. Sampling sites in Colonel By Lake.



Figure 16. Sampling sites in Cataraqui Marsh and Kingston Inner Harbour.



Figure 17. Site on Colonel By Island in Big Rideau Lake.



Figure 18. River redhorse captured in the Black Rapids Locks to Long Island reach.

Tables

Table 1. Sampling site descriptions including principle sites, number of sample sites and gear used during the inventory.

Reach	Reach Abbreviation	Principle Sites	UTM (Start)	UTM (End)	Gear Used	Inventory Sites
Dow's Lake	DL	Northwest Bay	E 445500 N 5026954	E 445196 N 5025841	HN, BPEF, SN	6
Hartwell's to Hog's Back Locks	HW - HB	Upstream of Hartwell's Locks, Downstream of Hog's Back Locks	E 445196 N 5025841	E 445303 N 5024260	BEF	12
Hog's Back to Black Rapids	HB – BR	Downstream of Black Rapids Locks	E 445303 N 5024260	E 445393 N 5018861	SN	3
Black Rapids to Long Island	BR – LI	Upstream of Black Rapids Locks, Entrance of Jock River	E 445393 N 5018861	E 444853 N 5011013	BEF, SN, BPEF	15
Big Rideau Lake	BRL	Downstream of Poonamalie Locks, Colonel By Island	E 415768 N 4971468	E 397341 N 4950728	SN, BPEF	11
Upper Rideau Lake	URL	Upstream of Narrows Locks	E 397341 N 4950728	E 395219 N 4944452	BEF	3
Newboro Lake	NL	Southeast bog, Downstream of Narrows Locks	E 395219 N 4944452	E 395048 N 4940248	BEF, HN	2 + 59
Indian Lake	IL	Upstream of Chaffey's Locks, Indian Lake Marina Shore	E 395845 N 4939349	E 395205 N 4937026	BEF	3
Opinicon Lake	OL	Downstream of Chaffey's	E 395205 N 4937026	E 397364 N 4935226	BEF	2

		Locks				
Whitefish Lake	WL	Downstream of Jones Falls	E 401767 N 4933122	E 400963 N 4926504	BEF	5
Little Cranberry Lake	LCL		E 400963 N 4926504	E 398276 N 4924198	BEF	4
Upper Brewer Locks to Lower Brewer Locks	UBL - LBL	Downstream of Upper Brewer Locks, Upstream of Lower Brewer Locks	E 395451 N 4918559	E 394463 N 4915933	BEF	4
River Styx	RS	Downstream of Lower Brewer Locks	E 394463 N 4915933	E 386265 N 4908547	BEF	2
Colonel By Lake	CBL	Upstream of Kingston Mills Locks	E 386265 N 4908547	E 384950 N 4905409	BEF	2
Cataraqui Marsh	CM/KIH	Downstream of Kingston Mills Locks	E 384950 N 4905409	E 382460 N 4901516	BEF	2
Kingston Inner Harbour	KIH	Belle Island	E 382460 N 4901516	E 382273 N 4898969	BEF	2

BEF Boat electrofisher, **BPEF** Backpack Electrofisher, **HN** Hoop Net, **PT** Pot Trap, **SN** Seine Net

Table 2. Tallies of total fish species caught within each sampling reach.

Common Name	Species	DL	HW-HB	HB-BR	BR-LI	BRL	URL	NL	IL	OL	WL	LCL	UBL-LBL	RS	CBL	CM	KIH
Pumpkinseed	*Lepomis gibbosus*	40	55	0	12	22	16	1786	41	0	63	32	43	3	9	5	5
Bluegill	*Lepomis macrochirus*	22	70	0	2	7	12	3912	71	0	71	50	61	14	11	0	1
Largemouth Bass	*Micropterus salmoides*	12	404	0	13	12	10	764	6	1	16	19	33	1	4	1	7
Smallmouth Bass	*Micropterus dolomieu*	0	6	7	1	0	0	0	0	0	0	0	0	2	12	0	0
Rock Bass	*Ambloplites rupestris*	7	8	52	1	8	9	54	6	0	20	0	4	0	4	0	0
Black Crappie	*Pomoxis nigromaculatus*	2	5	0	0	0	0	91	0	0	0	0	2	0	1	0	0
White Crappie	*Pomoxis annularis*	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Juvenile Lepomids	*Lepomis spp.*	159	3795	14	41	48	2	9	3	0	20	4	1	3	4	2	22
Yellow Perch	*Perca flavescens*	4	546	3	107	18	0	48	5	20	37	17	10	0	17	44	99
Logperch	*Percina caprodes*	0	92	0	0	0	0	0	0	0	0	0	0	7	0	0	0

Blackside Darter	*Percina maculata*	0	0	0	0	0	0	0	0	0	0	0	0	3	0	1	0
Johnny Darter	*Etheostoma nigrum nigrum*	3	213	100	1	2	0	0	0	0	0	0	0	0	0	0	1
Iowa Darter	*Etheostoma exile*	0	0	0	1	9	0	0	0	0	0	0	0	0	0	0	0
Walleye	*Sander vitreus*	0	7	5	13	0	0	0	0	0	0	0	0	0	0	0	0
Northern Brook Silverside	*Labidesthees sicculus*	0	243	0	0	0	0	0	2	11	0	0	1	1	18	17	1
Splake	*Salvelinus foninalis X Salvelinus namaycush*	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0
Lake Whitefish	*Coregonus clupeatormis*	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
Alewife	*Alosa pseudoharengus*	0	0	0	0	0	0	0	0	0	37	0	0	55	0	182	0
Northern Pike	*Esox lucius*	0	10	0	4	0	1	205	5	0	0	0	3	0	0	0	1
Muskellunge	*Esox masquinongy*	0	0	0	13	0	0	0	0	0	0	0	0	0	0	0	0
Brown Bullhead	*Ameiurus nebulosus*	1	61	0	1	0	4	1782	9	0	3	2	13	0	4	5	4

Yellow Bullhead	*Ameirus natalis*	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
Banded Killifish	*Fundulus diaphanous*	0	0	0	0	4	1	2	0	1	2	1	0	0	10	1	0
Central Mudminnow	*Umbra limi*	0	0	0	0	38	0	3	0	0	0	0	0	0	0	4	0
Bluntnose Minnow	*Pimephales notatus*	0	55	0	15	0	0	0	1	0	0	0	15	11	0	5	0
Spottail Shiner	*Notropis hudsonius*	0	559	18	1	0	0	0	0	0	0	0	1	0	0	0	0
Common Carp	*Cyprinus carpio carpio*	0	87	0	0	0	0	2	0	0	0	0	0	0	0	0	5
Common Shiner	*Luxilus cornutus*	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0
Golden Shiner	*Notemigonus crysoleucas*	0	986	0	1	0	0	0	0	0	0	17	5	0	0	0	1
Brassy Minnow	*Hybognathus hankinsoni*	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Blacknose Shiner	*Notropis heterlepis*	0	0	0	0	6	0	10	0	0	7	1	4	0	0	0	0

Blackchin Shiner	*Notropis heterodon*	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	0
White Sucker	*Catostomus commersoni*	0	8	0	22	0	0	9	0	0	0	0	0	0	0	0	0
River Redhorse	*Moxostoma carinatum*	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0
Greater Redhorse	*Moxostoma valenciennesi*	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	0
Silver Redhorse	*Moxostoma anisurum*	0	0	0	32	0	0	0	0	0	0	0	0	0	0	0	0
Shorthead Redhorse	*Moxostoma macrolepidotum*	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0
Bowfin	*Amia calva*	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0

Table 3. Tallies of total juvenile fish caught within each sampling reach.

Common Name	Species	DL	HW-HB	HB-BR	BR-LI	BRL	URL	NL	IL	OL	WL	LCL	UBL-LBL	RS	CBL	CM	KIH
Pumpkinseed	*Lepomis gibbosus*	7	27	0	0	0	0	0	0	0	0	0	0	0	0	5	0
Bluegill	*Lepomis macrochirus*	8	41	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Largemouth Bass	*Micropterus salmoides*	10	387	0	4	12	4	2	5	0	9	13	28	1	0	10	5
Smallmouth Bass	*Micropterus dolomieu*	0	6	7	0	0	0	0	0	0	0	0	0	2	11	0	0
Rock Bass	*Ambloplites rupestris*	3	1	47	6	7	0	0	2	1	2	0	0	0	0	0	0
Black Crappie	*Pomoxis nigromaculatus*	0	4	0	0	0	0	0	0	0	0	0	1	0	0	0	0
Juvenile Lepomids	*Lepomis spp.*	159	3795	14	41	48	2	9	3	0	20	4	1	3	4	2	22
Yellow Perch	*Perca flavescens*	2	459	3	81	15	0	0	1	20	0	0	0	3	0	1	0
Logperch	*Percina caprodes*	0	79	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Johnny Darter	*Etheostoma nigrum nigrum*	0	137	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Walleye	*Sander vitreus*	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Northern Pike	*Esox lucius*	0	2	1	0	0	0	4	0	0	0	0	0	0	0	0	0
Muskellunge	*Esox masquinongy*	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0
Brown Bullhead	*Ameiurus nebulosus*	0	52	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Bluntnose Minnow	*Pimephales notatus*	0	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Spottail Shiner	*Notropis hudsonius*	0	480	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Common Carp	*Cyprinus carpio carpio*	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Golden Shiner	*Notemigonus crysoleucas*	0	604	0	0	0	0	0	0	0	0	0	0	0	0	0	0
White Sucker	*Catostomus commersoni*	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
River Redhorse	*Moxostoma carinatum*	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Greater Redhorse	*Moxostoma valenciennesi*	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0

Appendices

Appendix 1. Abbreviations used for each of the fish species collected during the study.

Common Name	Species Name	Abbreviation
Pumpkinseed	*Lepomis gibbosus*	PS
Bluegill	*Lepomis macrochirus*	BG
Largemouth Bass	*Micropterus salmoides*	LMB
Smallmouth Bass	*Micropterus dolomieu*	SMB
Rock Bass	*Ambloplites rupestris*	RB
Black Crappie	*Pomoxis nigromaculatus*	BC
White Crappie	*Pomoxis annularis*	WC
Juvenile Lepomids	*Lepomis spp.*	LEP
Yellow Perch	*Perca flavescens*	YP
Logperch	*Percina caprodes*	LP
Blackside Darter	*Percina maculata*	BSD
Johnny Darter	*Etheostoma nigrum nigrum*	JD
Iowa Darter	*Etheostoma exile*	ID
Walleye	*Sander vitreus*	WA
Northern Brook Silverside	*Labidesthees sicculus*	BSS
Splake	*Salvelinus foninalis X Salvelinus namaycush*	SP
Lake Whitefish	*Coregonus clupeatormis*	LW
Alewife	*Alosa pseudoharengus*	AW
Northern Pike	*Esox lucius*	NP
Muskellunge	*Esox masquinongy*	MU

Brown Bullhead	*Ameiurus nebulosus*	BB
Yellow Bullhead	*Ameirus natalis*	YB
Banded Killifish	*Fundulus diaphanous*	BKF
Central Mudminnow	*Umbra limi*	CMM
Bluntnose Minnow	*Pimephales notatus*	BNM
Spottail Shiner	*Notropis hudsonius*	STS
Common Carp	*Cyprinus carpio carpio*	CC
Common Shiner	*Luxilus cornutus*	CS
Golden Shiner	*Notemigonus crysoleucas*	GS
Brassy Minnow	*Hybognathus hankinsoni*	BM
Blacknose Shiner	*Notropis heterolepis*	BNS
Blackchin Shiner	*Notropis heterodon*	BCS
White Sucker	*Catostomus commersoni*	WS
River Redhorse	*Moxostoma carinatum*	RR
Greater Redhorse	*Moxostoma valenciennesi*	GR
Silver Redhorse	*Moxostoma anisurum*	SR
Shorthead Redhorse	*Moxostoma macrolepidotum*	SHR
Bowfin	*Amia calva*	BF

Appendix 2. Determination of young of the year based on total length of the individuals for each species (Scott & Crossman, 1973; OMNR, 2000).

Species	Young of the Year Size
Pumpkinseed	≤50mm
Bluegill	≤55mm
Largemouth Bass	≤110mm
Smallmouth Bass	≤110mm
Rock Bass	≤50mm
Black Crappie	≤55mm
Juvenile Lepomids	≤50mm
Yellow Perch	≤50mm
Logperch	≤40mm
Johnny Darter	≤40mm
Walleye	≤130mm
Northern Pike	≤200mm
Muskellunge	≤200mm
Brown Bullhead	≤80mm
Bluntnose Minnow	≤50mm
Spottail Shiner	≤60mm
Common Carp	≤150mm
Golden Shiner	≤70mm
White Sucker	≤150mm

Attachment 2

Attachment 2 - Site Photographs



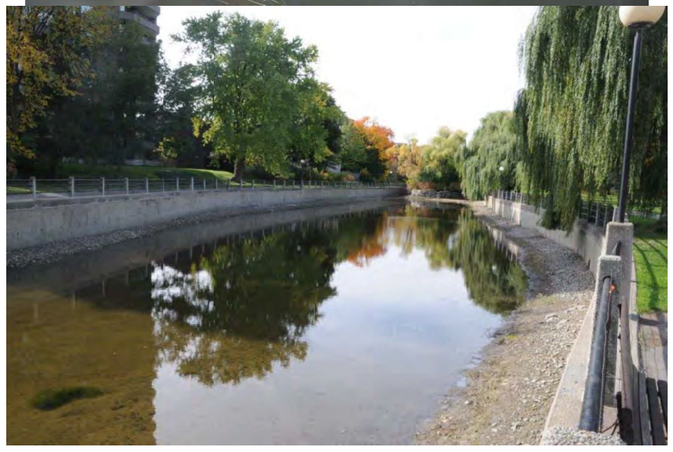
View north along Queen Elizabeth Driveway. Station 1 was established on the pathway adjacent to the piers under the bridges (above and below)



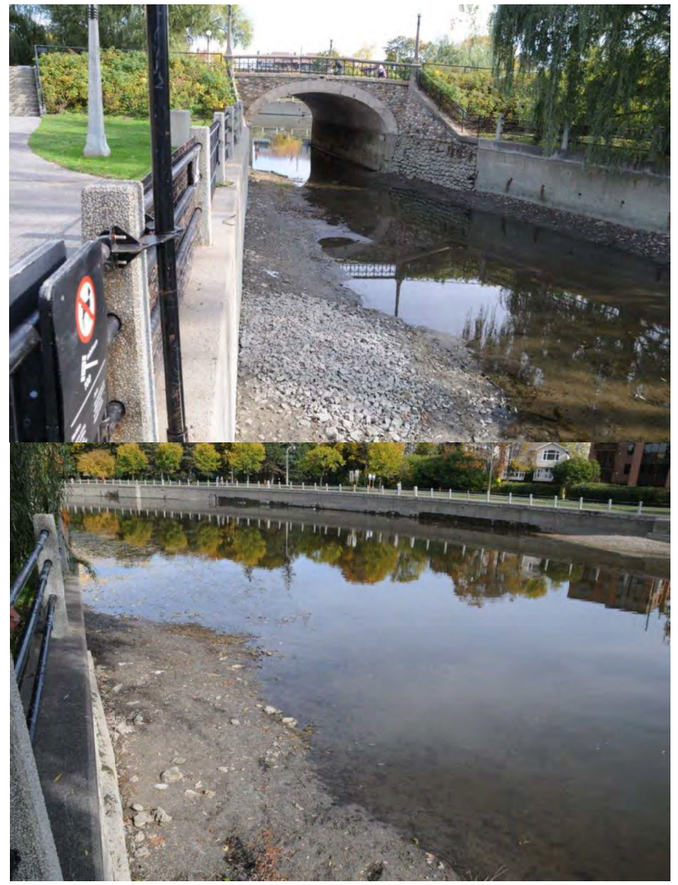


Looking east from Station 1 between the bridge piers across the Canal at Colonel By Drive (above). Below, a small patch of aquatic vegetation





Patterson Creek (above) in a parkette at Lynden Terrace where access to the Canal was gained under the Queen Elizabeth Driveway bridge (below)



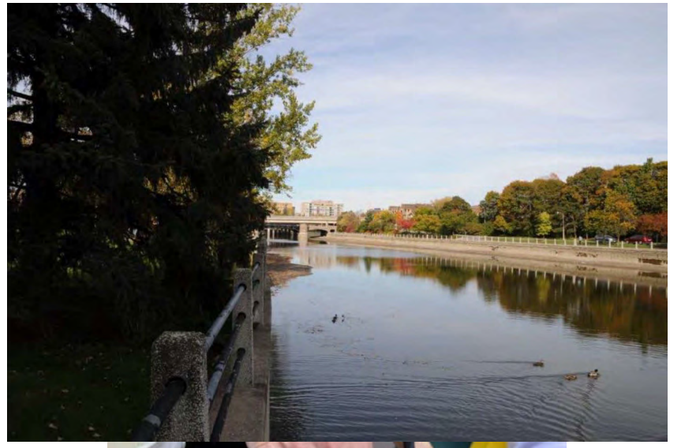
Station 2 was established at the silt deposits against the west canal wall (above) immediately downstream of the Patterson Creek outlet (below)



View of the canal looking upstream (south, above). Algae growth is prolific on the extensive sediment deposits against the canal walls (below)



A band of sediment deposits flanks the 1.5 m deep central channel for most of the canal reach where fish collection occurred (both looking north)





White Sucker (*Catostomus commersoni*) above and below





Smallmouth Bass (*Micropterus dolomieu*)

Attachment 3



Brown Bullhead (*Ameiurus nebulosus*)



Young of the year and adult bluegill (*Lepomis macrochirus)*

GENERAL INFORMATION

PROJECT #:	PROJECT DESCRIPTION: Queensway Bridges	DAY: 16	MONTH: June	YEAR: 2017

Is STREAM REALIGNMENT required for this section: O Yes Ø No O Unknown

COLLECTORS: RW	WEATHER CONDITIONS: cloudy/sun	TIME STARTED: 2PM	TIME FINISHED: 3 PM
AIR TEMP: 23°C	WATER TEMP:	CONDUCTIVITY (µS/cm):	

PHOTO NUMBERS AND DESCRIPTIONS: 00 –

LOCATION

NAME OF WATERBODY: Rideau Canal	DRAINAGE SYSTEM: Ottawa R	CROSSING #:	STATION #: 1

LOCATION OF CROSSING: under 416 Queensway Bridges

GPS COORDINATES: 18 E 446517 N5028982	MTO CHAINAGE:
TOWNSHIP: City of Ottawa	MNR DISTRICT: Kemptville

LAND USE AND POLLUTION

SURROUNDING LAND USE: Urban-city centre	SOURCES OF POLLUTION: surroundings

EXISTING STRUCTURE TYPE

Bridge Ø	Box Culvert O	Open Foot Culvert O	CSP O	N/A O

Other O Describe: 6 in-water piers per side Size (w x h) m^2 50 x 6 m

SECTION TYPE AND MORPHOLOGY

SECTION IDENTIFIER: canal	SECTION LOCATION: (include on habitat map) directly under EB lanes

TYPE:	Stream / river	Channelized	Permanent	Intermittent	Ephemeral	ASSOCIATED WETLAND:
	Ø	O	Ø	O	O	no

TOTAL SECTION LENGTH (m):	CURRENT VELOCITY (m/s):

SUB-SECTION(S)	Run	Pool	Riffle	Flats	Inside culvert	Other
	O	O	O	O	O	
Percentage of area			100			
Mean depth wetted (m)			2.5 ?			
Mean width wetted (m)			40			
Mean bankfull width (m)			40			
Mean bankfull depth(m)			3			
Substrate			muck, detritus			

Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D

BANK STABILITY

	Stable	Slightly Unstable	Moderately Unstable	Unstable
Left Upstream Bank	Ø	O concrete walls	O	O
Right Upstream Bank	Ø	O	O	O

HABITAT

IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris	Organic debris	Vascular Macrophytes	None
				Instream		Instream ✓	
				Overhanging		Overhanging	

SHORE COVER (% stream shaded):	100 – 90 %	90 – 60%	60- 30%	30 – 1%	None
	O	O	O	O	Ø

VEGETATION TYPE (%):	Submergent	Floating	Emergent	None
Predominant Species	elodea	algae, tapegrass		

MIGRATORY OBSTRUCTIONS:	None (locks)	Seasonal	Permanent

POTENTIAL CRITICAL HABITAT LIMITING:	Spawning	Evidence of Groundwater	Other
	–	–	–

POTENTIAL ENHANCEMENT OPPORTUNITIES:

N/A

COMMENTS:

(stone around piers)

sediment contamination? – leave bottom undisturbed

Additional Notes Appended? O No O Yes number of pages _____

GENERAL INFORMATION					
PROJECT #:	PROJECT DESCRIPTION: Queensway Bridges	DAY: 17	MONTH: June	YEAR: 2017	
COLLECTORS: RW		TIME STARTED: 2	TIME FINISHED: 3		
WEATHER CONDITIONS: sunny/cloudy	SURFACE CONDITIONS (if applicable):	Calm O	Rippled X	Wavy O	Rough O

GENERAL LOCATION	
NAME OF WATERBODY: Rideau Canal	LOCATION OF STATION: directly under bridge
TOWNSHIP: City of Ottawa	MNR DISTRICT: Kemptville

SAMPLING LOCATIONS AND WATER CHEMISTRY						
LOCATION: under bridge	LENGTH (m)	AIR TEMP. (°C)	pH	DISSOLVED OXYGEN (mg/L)	WATER TEMP (°C)	CONDUCTIVITY (µS/cm)
Upstream	30	23	5.74	7.91	—	517
Downstream						
Culvert / Hwy ROW						

Temp 6.7

WATER COLOUR:	Colourless O	Yellow/brown X	Blue/green O	Turbid O	Other O

GEAR		
ELECTROFISHER: O		
Length (m):	Settings:	Seconds:
NETS and TRAPS:		
MINNOW TRAP: O #	DIP NET O	TRAP NET O
SEINE: O	GILL O	OTHER O specify
HAULS (#):	Period Of Time (24 hour clock):	
	Set Time	Clear time
LENGTH (m):	MESH SIZE:	DEPTH OF CAPTURE:
	Smallest (cm):	Minimum (m):
	Largest (cm):	Maximum (m):

SAMPLE COLLECTION					
FISH KEPT? O Yes O No	# OF BAGS	PRESERVATIVE: Formalin O	Frozen O	Alcohol O	Other O

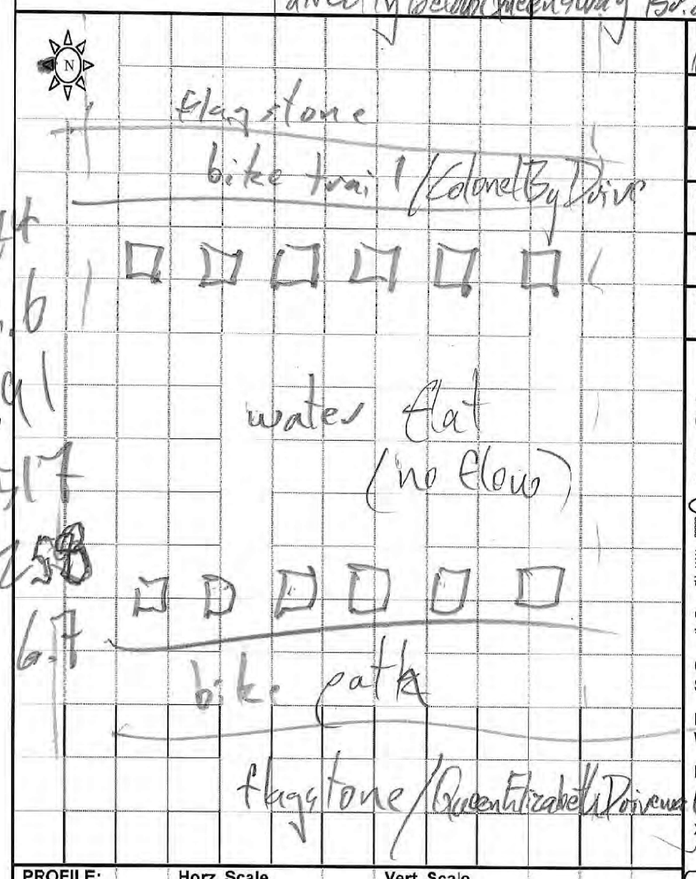
COMMENTS:

no sampling attempted (boat required) no access

Additional Notes Appended? X No o Yes number of pages _____

SECTION IDENTIFIER:	SECTION LOCATION: directly below Queensway Bridge	SECTION LENGTH (m):	SCALE (cm / m):

pH 5.74
DO 7.91
Cond 517
TDS 258
Temp 6.7



PROFILE: Horz. Scale Vert. Scale

PROJECT #: Queensway Bridges
MAPPER: Rik Warné
NAME OF WATERBODY: Rideau Canal
CROSSING #:
STATION #: 1
DATE: DD-MMM-YY 17-Jun-17

LEGEND

10d depth (cm)
6w width
➡ Riffle
⇨ Run/Glide
◯ Pool
▩ Island/Bar
▒ Fine Substrate
Gravel Substrate
oOooO Cobble /Boulder
* * * Debris
CT Cattail
SV/FV Submerg/Float Veg
EV Emergent Vegetation
W Watercress
Fe Iron Staining
//////// Eroded Bank
XXX Riprap / Other Stabilization
⊂⊃ Instream Log/Tree
^^^ Dam/Weir/Obstruction
® Riparian Tree
|► Seep/Spring
-------- Undercut Bank
— Barrier to Fish Movement
-S- Seasonal Barrier
-x--x- Fence line
└┘ Culvert

GENERAL INFORMATION

PROJECT #:	PROJECT DESCRIPTION: Queensway bridges	DAY: 22	MONTH: Oct	YEAR: 2017

Is STREAM REALIGNMENT required for this section:
O Yes O No O Unknown

COLLECTORS: RW DG	WEATHER CONDITIONS: Sunny mild	TIME STARTED: 13:30	TIME FINISHED: 16:00

AIR TEMP: 18	WATER TEMP: 14.6	CONDUCTIVITY (µS/cm): 411

PHOTO NUMBERS AND DESCRIPTIONS:

LOCATION

NAME OF WATERBODY: Rideau Canal	DRAINAGE SYSTEM: Rideau River	CROSSING #: u/s 300m from Queensway	STATION #: (2)

LOCATION OF CROSSING: at Patterson Creek Confluence

GPS COORDINATES: 18 5446644 N5028542	MTO CHAINAGE:
TOWNSHIP: City of Ottawa	MNR DISTRICT: Kemptville

LAND USE AND POLLUTION

SURROUNDING LAND USE: Urban	SOURCES OF POLLUTION: City SW runoff

EXISTING STRUCTURE TYPE

Bridge O	Box Culvert O	Open Foot Culvert O	CSP O	N/A O

Other O Describe: Size (w x h) m^2

SECTION TYPE AND MORPHOLOGY

SECTION IDENTIFIER:	SECTION LOCATION: (include on habitat map)

TYPE:	Stream / river	Channelized	Permanent	Intermittent	Ephemeral	ASSOCIATED WETLAND:
	O	O	O	O	O	no

TOTAL SECTION LENGTH (m): 400 m	CURRENT VELOCITY (m/s): < 0.1 m/s

SUB-SECTION(S)	Run	Pool	Riffle	Flats	Inside culvert	Other
	O	O	O	O	O	
Percentage of area		100				
Mean depth wetted (m)		0.5				
Mean width wetted (m)		60				
Mean bankfull width (m)		60				
Mean bankfull depth(m)		2.5				
Substrate		silt, muck, some fine gravel				

Bedrock Br	Boulder Bo	Cobble Co	Gravel Gr	Sand Sa	Silt Si	Clay Cl	Muck Mu	Detritus D

GENERAL INFORMATION

PROJECT #:	PROJECT DESCRIPTION: Queensway Bridges	DAY: 22	MONTH: 10	YEAR: 2017

COLLECTORS: Rod; Wayne Dan Gillespie	TIME STARTED: 13:30	TIME FINISHED: 16:00

WEATHER CONDITIONS: sunny, mild	SURFACE CONDITIONS (if applicable): Calm O	Rippled O	Wavy O	Rough O

GENERAL LOCATION

NAME OF WATERBODY: Rideau Canal	LOCATION OF STATION: u/s of Queensway WQ/fish 400m reach Queensway to Patterson Cr. outlet
TOWNSHIP: Ottawa	MNR DISTRICT: Kemptville

Tuned 205 ppm 35 FTU

SAMPLING LOCATIONS AND WATER CHEMISTRY

LOCATION:	LENGTH (m)	AIR TEMP. (°C)	pH	DISSOLVED OXYGEN (mg/L)	WATER TEMP (°C)	CONDUCTIVITY (µS/cm)
Upstream		17°C	5.72	41.4% 4.25 ppm	14.6°C	411
Downstream						
Culvert / Hwy ROW						

WATER COLOUR:	Colourless O	Yellow/brown O	Blue/green O	Turbid O	Other O

GEAR

ELECTROFISHER: O backpack boat

Length (m): 400 m	Settings: 130 Hz 450 V	Seconds: 300 1800

NETS and TRAPS:

MINNOW TRAP: O #	DIP NET O	TRAP NET O
SEINE: O	GILL O	OTHER O specify
HAULS (#):	Period Of Time (24 hour clock):	
	Set Time	Clear time
LENGTH (m):	MESH SIZE:	DEPTH OF CAPTURE:
	Smallest (cm):	Minimum (m):
	Largest (cm):	Maximum (m):

SAMPLE COLLECTION

FISH KEPT? O Yes O No	# OF BAGS	PRESERVATIVE: Formalin O	Frozen O	Alcohol O	Other O

COMMENTS:

lots of fish, limited shocker ability
(muck → turbidity - forage fish water depth - sport fish

Additional Notes Appended? O No O Yes number of pages _____

BANK STABILITY

	Stable	Slightly Unstable	Moderately Unstable	Unstable
Left Upstream Bank	O concrete	O	O	O
Right Upstream Bank	O walls - Minor spalling	O	O	O

HABITAT

IN-STREAM COVER (% surface area):	Undercut banks	Boulders	Cobble	Woody Debris Instream Overhanging	Organic debris	Vascular Macrophytes Instream Overhanging	None
							O

SHORE COVER (% stream shaded):	100 – 90 %	90 – 60%	60- 30%	30 – 1%	None
	O	O	O	O	X

VEGETATION TYPE (%):	Submergent	Floating	Emergent	None
Predominant Species	pondweeds, algae	none	none	

MIGRATORY OBSTRUCTIONS:	None	Seasonal	Permanent
			locks

POTENTIAL CRITICAL HABITAT LIMITING:	Spawning	Evidence of Groundwater	Other
	NO	ND	

POTENTIAL ENHANCEMENT OPPORTUNITIES:

in water cover

COMMENTS:

water level lowered previous week 2cm

Additional Notes Appended? O No O Yes number of pages _____

Oct 22/17

CAPTURE INFORMATION

PROJECT NO.: Queensway Bridges **STATION NO.:** (2)→(1) 0m to 400m

NO.	SCIENTIFIC NAME / COMMON NAME	PHYSICAL CONDITION # fish with blackspot	PHYSICAL CONDITION # fish with lesions, tumours, maturity etc.	TOP PREDATOR Length (mm) F= total fork or L = total length	TOP PREDATOR AGE CLASS YOY / Adult	
1	Common ~~Sucker~~ Carp			L=300	A	Boat
1	White Sucker			L=300	A	
1	Brown Bullhead			L=250	A	
1	Smallmouth Bass			L=300	A	
2	Yellow Perch			L=125	A	
1	Rock Bass	✓		L=100	A	
10	Pumpkinseed Sunfish			L=75	A	Wading
20	Blue gill			L=50		
				(25-75]	ind YOY	
2	Johnny Darter			NO		

Circle number if a sample was kept

PAGE 1 of 1 Number all pages

Attachment 4

Ontario Ministry of Natural Resources / Ministère des Richesses naturelles

Licence to Collect Fish for Scientific Purposes

Permis pour faire la collecte de poissons à des fins scientifiques

Licence No. / N° de permis	Local Reference No. / N° de référence local	Issuer Account No. / N° de compte du délivreur de permis
1088207		10000846

This licence is issued under Part I of the Fish Licensing Regulation made under the Fish and Wildlife Conservation Act, 1997 to:

Ce permis est délivré en vertu de la Partie I du règlement sur la délivrance de permis de pêche formulé conformément à la Loi sur la protection du poisson et de la faune de 1997 à:

	Last Name / Nom de famille	First Name / Prénom	Middle Name / Second Prénom
Name of Licencee / Nom du titulaire du permis	Mr. Warme	Rudi	Carl

Name of Business/Organization/Affiliation (if applicable) / Nom de l'entreprise de l'organisme/de l'affiliation (le cas échéant)

BT Engineering

Mailing address of Licencee / *Adresse postale du titulaire du permis*

Street Name & No./PO Box/RR#/Gen. Del./N° rue/C.P./R.R./poste restante

223 William Street

City/Town/Municipality / Ville/village/municipalité	Province/State Province/État	Postal Code/Zip Code Code Postal/Zip
Belleville	ON	K8N 3K1

to collect the species, size and quantites of fish from the waters as set out below.
Pour faire la collecte des espèces suivantes (stade et nombre indiqués ci-dessous):

Species Espèces	Eggs Oeuf X	Juvenile Fretin X	Acults Acultе X	Numbers Nombre	Name of Waterbody Nom de l'étendue d'eau
All Species as encountered	X	X	X	99999	Rideau River in Ottawa near the Queensway. See attached map.

Yes/Oui ☐ Additional species/Waterbody list attached / Liste d'espèces/d'étendue d'eau additionnelles ci-jointe

Purpose of collection / *But de la collecte*: Fish Removal and Relocation if Neccessary

Licence Dates / *Dates du permis*

Effective Date / Date d'entrée en vigueur (YYYY-MM-DD)	Expiry Date / Date d'expiration (YYYY-MM-DD)
2017-10-17	2017-12-31

Licence conditions / *Conditions du permis*: This licence is subject to the conditions contained in Schedule A if included. / Ce permis doit respecter les conditions de l'annexe A si celle-ci est jointe.

Yes/Oui ☒ No/Non ☐ Schedule A included. / Annexe A ci-jointe

Issued by (please print) Délivré par (veuillez écrire en caractères d'imprimerie)	Signature of Issuer / Signature du délivreur	Date of Issue/Date de délivrance (YYYY-MM-DD)
Scott Lee		2017-10-17

Signature of Licencee / Signature du titulaire du permis	Date (YYYY-MM-DD)
	2017-10-17

Personal information contained on this form is collected under the authority of the Fish and Wildlife Conservation Act, 1997 and will be used for the purpose of licencing, identification, enforcement, resource management and customer service surveys. Please direct further inquiries to the District Manager of the MNR issuing district.

Les renseignements personnels dans ce formulaire sont recueillis conformément à la Loi sur la protection du poisson de la faune, 1997 , et ils seront utilisés aux fins de délivrance de permis, d'identification, d'application des règlements, de gestion des ressources et de sondage sur les services a la clientèle. Veuillez communiquer avec le chef du district ou MRN qui délivré le permis si vous avez des questions.

FW0032 (04/00)

Licence to Collect Fish for Scientific Purposes
Permis pour faire la collecte de poissons à des fins scientifiques
Schedule A - Licence Conditions
Annexe A - Conditions du permis

Licence No. 1088207
No de permis _____

This licence is subject to the conditions listed below.

1. This Licence is valid to collect for the persons, species, numbers, and calendar year indicated.

2. Mandatory report forms documenting the sampling conducted under this licence must be submitted to the licence issuer within 30 days of the termination date, but in no case later than January 31 next following the year of issue. The Mandatory Report form (Part 1) must be completed for each Sampling Program and the Site Reports (Part 2) must be completed for each collection site. A separate map clearly indicating the location of each collection site must be attached to the Site Collection Collection Reports. Attach the Site Collection Reports and maps to the Mandatory Report Form and submit to the "Fish and Wildlife Technical Specialist, Ministry of Natural Resources, Kemptville District, 10 Campus Drive, P.O. Box 2002, Kemptville, ON, K0G 1J0 ". The submission of a satisfactory report is a prerequisite to any subsequent renewals.

3. Before carrying out any operation under the licence in any area the licensed person shall inform the Area Supervisor or District/Lake Manager of his or her intentions at least one week before commencing work and include information as to the type of operation, location, duration, and the names of personnel involved.

4. A copy of the original licence must be at the designated collections sites while sampling is occurring and carried by the licenced person or a designated assistant.

5. This licence is not valid in Provincial Parks, park reserves, or National Parks without the written permission from the authorized person in charge of the area concerned.

6. This licence does not allow access to any property without permission of the landowner.

7. Name of assistants covered under this Licence are as follows: **Dan Gillespie, Melissa Taylor and any other BT Engineering staff as required.**

8. Capture gear shall be inspected regularly and live holding traps must be inspected at least once daily. All capture gear shall be clearly marked with the licencee name and the licence number of this licence.

9. Licencee and assistants may collect fish with; Backpack Electrofisher, Dip Nets, Minnow Traps.

10. All persons working under authority of this licence must be trained in proper fish handling procedures prior to conducting any activity authorized by the licence. .

11. All persons using electrofishing equipment must be certified for use of that equipment prior to conducting any activity authorized by this licence.

12. The licencee shall follow the best management practices for the collection, handling, transportation and holding of fish identified in FSA Bulletin 2008-01 (June 10, 2008) included with the licence in order to minimize the risk of spreading aquatic invasive species and diseases.

13. All field equipment must be de-contaminated prior to use on each water body in order to prevent the spread of exotic species and disease.

14. Due to potential spawning activity by resident or migratory fish species, visual inspection of all sampling areas must be done prior tp sampling with seine or dip nets. Should spawning activity or redds be observed all sampling must be stopped in order to prevent disturbance to the fish and habitats.

15. Unless specified otherwise, all captured fish will be released live at the capture site except for voucher specimens, approved permanent collections and/or when further examination is necessary in the laboratory. Voucher specimens shall be deposited in the Royal Ontario Museum collection for taxonomic verification and voucher retention.

16. Any person acting under the authority of this licence, shall immediately report the capture of any invasive species (e.g. ruffe, tubenose goby,round goby, rusty crayfish, Asian carp, etc.) found outside its previously known range (as determined by the distribution information available at: www.invadingspecies.com/ndexen.cfm, to the appropriate Area Biologist at the local MNR District office. Any such specimens captured outside of their established range (not already naturalized) shall be eutharized (not returned to the water) and kept for identification purposes.

17. Unless specifically authorized by a separate Endangered Species Act (ESA) permit and/or Federal Species at Risk Act (SARA) permit, no person shall attempt to catch a Species at Risk.

18. Any person acting under the authority of this licence, shall photograph and release live any fish Species at Risk captured (e.g. atlantic salmon, redside dace, black redhorse, river redhorse, channel darter, eastern sand darter, northern brook lamprey (and american brook lamprey for comparison). The photographs must be forwarded to the appropriate Area Biologist or Species At Risk Biologist at the local MNR District office for identification and confirmation.

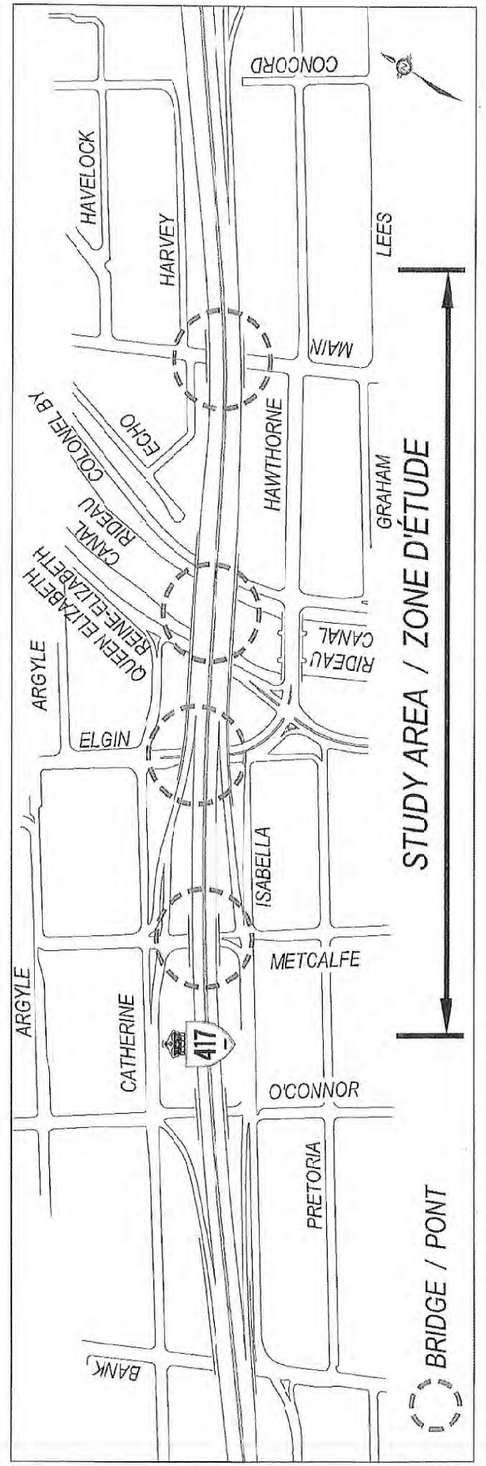
19. GPS coordinates (UTM) of the capture location must be submitted for any species at risk, as per the Species at Risk in Ontario (SARO) list that are encountered during this project and submitted to MNR.

20. Sampling must cease immediately in an area when a fish Species are Risk is Caught.

21. Sampling locations must be reported using GPS location data using: Projection: Universal Transverse Metres.

Signature of Licencee / Signature du titulaire du permis

Date Oct 18/17

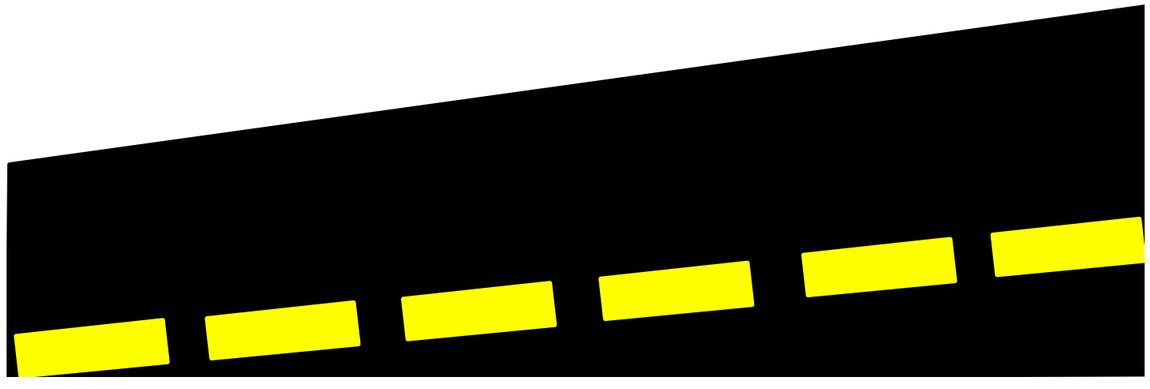


Oct 18/17

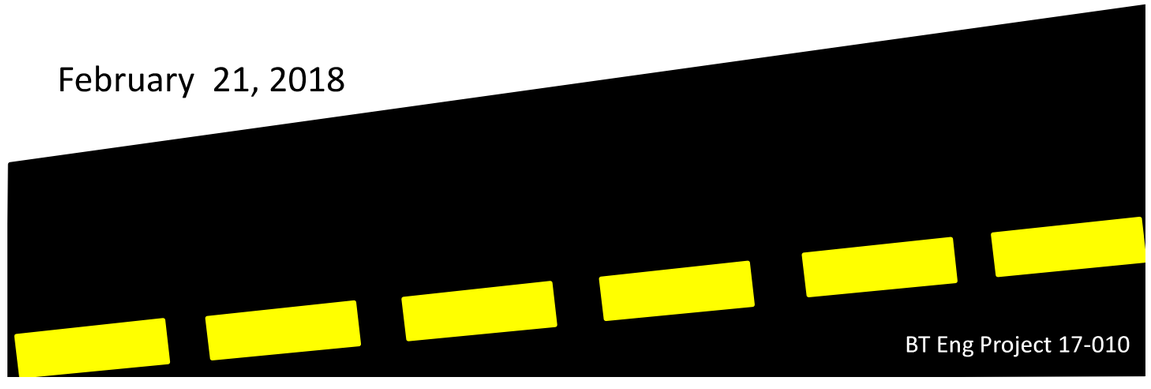
Appendix G1
Terrestrial Environmental Existing Conditions Report

Highway 417 Rehabilitation/Replacement of Downtown Bridges, Metcalfe Street to Main Street - Preliminary Design and Environmental Assessment
G.W.P. 4170-13-00

Terrestrial Environment Existing Conditions Report



February 21, 2018



BT Eng Project 17-010

MINISTRY OF TRANSPORTATION

Highway 417 Queensway Rehabilitation/Replacement of Downtown Bridges, Metcalfe Street to Main Street - Preliminary Design and Environmental Assessment

G.W.P. 4170-13-00

Terrestrial Environment Existing Conditions Report

This report has been prepared by:



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EXECUTIVE SUMMARY

This report has been completed to fulfill the requirements of the assignment undertaken by BT Engineering for the "Highway 417 Queensway Rehabilitation/Replacement of Downtown Bridges, Metcalfe Street to Main Street - Preliminary Design and Environmental Assessment", MTO G.W.P. 4170-13-00, for The Ministry of Transportation, Ontario. The purpose of this component of the contract was to conduct inventories, in order to assess the structure and composition of the existing terrestrial environment, within the study area, and record observations of flora and fauna species encountered.

On May 25, 2017, and again on June 17 and October 22, 2017 the study area was inspected to identify natural heritage features that may be affected by the proposed rehabilitation or replacement of bridges at Metcalfe Street, Elgin Street, the Rideau Canal and Main Street.

The study area is located within the Ottawa Valley Clay Plain in an area of shallow till and occasional bedrock outcrops (none observed in the study area). The surrounding lands are fully developed as a downtown urban area. There are no nearby identified environmentally sensitive areas or significant wetlands. Scattered tree groupings and neglected lot fringes offer some "natural" area. The Nicholas Street woodlot offers the largest undisturbed area. The majority of staging areas have been identified under Ontario's Ecological Land Classification System as Mineral Cultural Meadow (CUM1). Invasive species have moved into undisturbed corners and these pockets are classified as Mineral Cultural Thicket (CUT1). The Nicholas Street interchange woodlot at the Nicholas Street interchange is classified as a Dry, Fresh White Birch-Poplar-Conifer Mixed Forest Ecosite (FOM5).

Proposed staging areas for the rigid frame structures (Metcalfe Street, Elgin Street, Main Street Bridges), sites E1, E2, E3 and M1, are mainly manicured Kentucky Bluegrass with occasional landscape tree and shrub plantings. There are no natural values evident and therefore a very low potential to sustain native features with the exception of several large, healthy Sugar Maple trees at the west corner of Ballantyne Park. Scrubby trees along the back of the Park on the highway embankment slope could potentially have some (urban) wildlife value.

Rideau Canal bridge staging areas have been identified at Ballantyne Park and the Nicholas Street interchange. Bridge replacement construction alternatives, including: conventional construction using sequential staging for removal and the replacement; off-site construction utilizing a rapid replacement jack-and-slide technology; and, rapid replacement utilizing self-propelled mobile transporter (SPMT) transportation/removal to and from an off-site bridge construction and demolition staging area, were considered.

Staging areas under consideration for the conventional Rideau Canal Bridge replacement structures construction or jack-and-slide methodologies will require utilization of E1, M1, and M4. Mature trees north of the Queensway, in front of an apartment on Queen Elizabeth Driveway, and along the east and west Canal bank may require removal, including a specimen Red Oak. In order to prepare the site for demolition and bridge replacement, temporary filling of the Canal with rock/earth fill may be required.

The Nicholas Street Interchange woodlot staging area was identified as an assembly and demolition site for SPMT rapid replacement. Removal of all or a portion of the woodlot may be necessary in order to provide an adequate work area.

None of the staging areas within this study's context would be considered at all significant, with the possible exception of the Nicholas Street woodlot. Species at Risk may occasionally be present in the Study Area, although other than as casual visitors, it is unlikely that any of these species would normally be residents with the possible exception of bats.

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Table E1 below provides a summary of field information on each of the staging areas that were reviewed. GPS coordinates and works proposed at each Station are also noted in the table.

Table E1: Terrestrial Habitat Existing Conditions Summary at the Queensway Bridges

Staging Area UTM Co-ordinates (Zone 18)	Site Description	Proposed Work
E1- North side of ROW between Elgin Street and Queen Elizabeth Driveway E 446431 N 5028979	Rectangular area totally transformed from a natural condition. The site is on fill forming the highway embankment slope on the north side of the Queensway, adjacent to Catherine Street and the Rideau Canal. Lilac shrubs, Red Oak, Red Pine, apple and spruce plantings are concentrated in a grouping closer to the Rideau Canal.	Preparations for staging sites will include total removal of vegetation, and installation of roadway protection to permit temporary excavation and site levelling. The jack-and-slide method will require complete levelling of Staging Areas E1 and E2 and utilization of the entire Ballantyne Park. It may also be necessary to remove trees along the Rideau Canal north of the Queensway bridges and temporarily fill in portions of the Rideau Canal with rock/earth fill, after the annual October draw-down period.
E2 - North side of ROW between Metcalfe Street and Elgin Street E 446324 N 5028938	This triangular area on the north side of the Queensway has been totally transformed from a natural condition, dominated by a ground cover of manicured grass and landscape plantings (pine, spruce, apple, and oak). Manitoba Maple has become established. Area E2 has no natural environment features of significance and exhibits no potential to support any.	
E3 - North side of ROW between O'Connor Street and Metcalfe Street E 446133 N 5028818	Rectangular area totally transformed from a natural condition. The site is on fill forming the highway embankment slope. Vegetation is open, grass with scattered Red Oak, Red Pine, White and Blue spruce, none of notable size. Manitoba Maple and Staghorn Sumac occupy neglected areas. A mature Flowering Crab appears to be a survivor of the former railway corridor. There are no natural values evident and therefore a very low potential to sustain native features.	
M1 - Ballantyne Park east of the Canal on the south side of the Queensway fronting on Hawthorne Avenue E 446700 N 5029022	Site consists of manicured grass back to the highway shoulder with several large sugar maple trees at the southwest corner. Several maples along the road are diseased. A cluster of non-native, mature and aesthetically valuable Japanese Lilac trees are located in the central park. A variety of scrubby trees along the back of the Park on the highway embankment slope (Red Pine, White Spruce, Norway Spruce, Norway Maple) are mixed with Manitoba Maple and immature Black Walnuts at a parking lot. This location could potentially have some (urban) wildlife value. There are some significant specimen trees.	

Staging Area UTM Co-ordinates (Zone 18)	Site Description	Proposed Work
M4 – North of Old Town Hall, east of Main Street E 446774 N 5029079	This vacant lot consists of a sparsely wooded area and scrubby understory. Trees appear generally unhealthy and are located primarily on the perimeter of the site to the north, east, and west. Manitoba Maple, Norway Maple, and Green Ash (*Fraxinus pennsyvanica*) dominate, while the understory vegetative community is composed of Goldenrod (*Solidago sp.*) and Riverbank Grape (*Vitis riparia*). Grasses and wedy growth within the ROW runs parallel to Main Street. Although the trees offer the potential for bat cavities (none observed), there are no natural values evident and therefore a very low potential to sustain native features.	
Nicholas Street Interchange - Woodlot in Northwest Quadrant E 447027 N 5029463	There is an extensive grassed area in the interchange containing a large woodlot planted by MTO approximately 50 years ago. Another adjacent and large band of woody vegetation is next to a condominium and connected to the woodlot. Aspen poplars have surpassed most other planted species in growth rate; however, numerous specimens of Sugar Maple, Green Ash, White Birch, Basswood and willow also occur. Numerous invasive trees and shrubs have become established along the woodlot edge including Tartarian Honeysuckle, Manitoba Maple, Black Walnut, Staghorn Sumac and Dog-Strangling Vine. In order to utilize the site for rapid replacement it may be necessary to remove a portion or all of the woodlot.	The northwest quadrant has been identified as an assembly and demolition area. The existing Rideau Canal bridges would be removed and transported to this staging area, along the Queensway, for demolition and new bridges assembled for transport to the canal for placement.

1.0 INTRODUCTION AND STUDY AREA

The Study Area (see **Figure 1**) includes the Highway 417 Queensway north and south right-of-way corridors, bounded by Catherine Street to the north and Isabella Street and Hawthorne Avenue to the south and extending from Metcalfe Street in the west to Concord Street in the east. The northwest quadrant of the Highway 417/Nicholas Street Interchange has also been included. The rehabilitation or replacement of seven bridges at Metcalfe Street, Elgin Street, the Rideau Canal (including Colonel By Drive and Queen Elizabeth Driveway) and Main Street is under consideration.

The Study Area is located within the Ottawa Valley Clay Plain Physiographic Region in an area of shallow till and occasional bedrock outcrops (none observed in the study area). The surrounding lands are essentially flat and fully developed as a downtown urban area, with a mix of commercial and residential land use. The land dips imperceptibly towards the Rideau Canal, which bisects the Study Area from north to south.

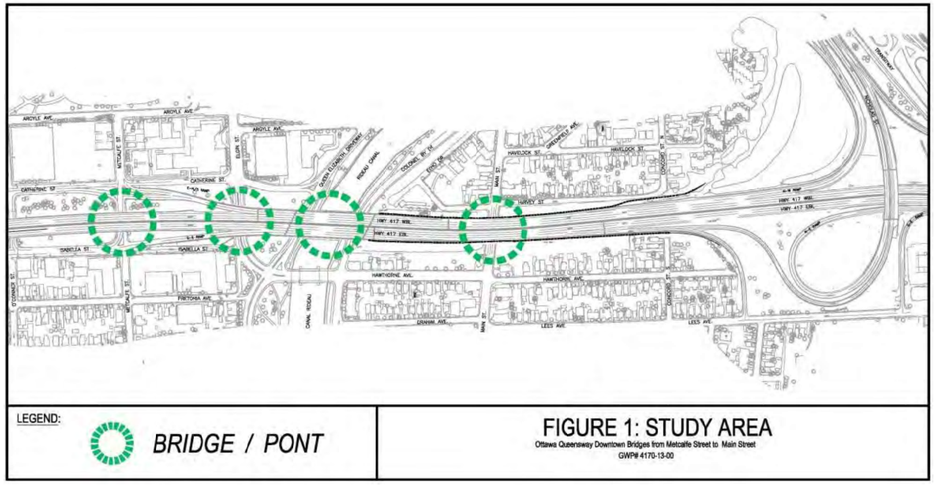

Figure 1: Study Area

On May 25, 2017 a site reconnaissance of the Study Area was undertaken. Several open areas adjacent to the highway were initially reviewed as potential staging sites for replacement structures, ranging from parking areas and parks to the grassed rights-of-way along portions of the highway corridor. The Study Area was revisited again on June 17 and October 22, 2017 as the alternative sites were expanded, construction methodologies were explored more widely, and the aerial extent of potential impacts to terrestrial site features could be more readily identified. Representative photographs of the Study Area can be viewed in **Attachment 1**.

The Ministry of Natural Resources and Forestry (MNRF) District Office in Kemptville was contacted for any background information on Natural heritage values within the Study Area. Related correspondence is in **Attachment 2**.

2.0 SITE DESCRIPTIONS - ALTERNATIVE BRIDGE STAGING AREAS

Rigid Frame Staging Areas (Metcalfe Street, Elgin Street, Main Street Bridges)

Preferred staging areas have been identified for rigid frame structure replacements at Metcalfe Street, Elgin Street and Main Street (see **Figure 2** and **Figure 3**). Staging areas E1 and E2 are on the north side of the Queensway right-of-way east and west of Elgin Street respectively, staging area E3 is between O'Connor Street and Metcalfe Street along the north right-of-way. Staging area M1 (Ballantyne Park) is in the southwest quadrant of the Hawthorne Avenue/Main Street intersection, with M4 North of the Old Town Hall east of Main Street.

In most all of these locations manicured Kentucky Bluegrass (*Poa pratensis*) dominates the sloped ground cover. Landscape plantings are often present. Spruce and pine are most commonly planted. Invasive species, both native and foreign, have moved into undisturbed corners. No Butternut trees (*Juglans cinerea*) were observed, although there are numerous Black Walnuts (*J. nigra*), including several maturing specimens, scattered throughout the study area.



Figure 2: Elgin Street and Metcalfe Street Staging Areas

Staging Area E1 – Between Elgin Street and Queen Elizabeth Driveway

A rectangular area totally transformed from a natural condition, staging area E1 is on fill forming the highway embankment slope on the north side of Highway 417. Conifer plantings including Red Pine (*Pinus resinosa*), Blue Spruce (*Picea pungens*) and White Spruce (*P. glauca*) occur along the grassed slope adjacent to Catherine Street. Several Lilac (*Syringa vulgaris*) shrubs, a 25 cm DBH (diameter at breast height) Red Oak (*Quercus rubra*), a Red Pine, an apple (*Malus* sp.) and Blue Spruce plantings are concentrated in a grouping closer to the Rideau Canal.

Staging Area E2 - Between Metcalfe Street and Elgin Street

As with site E1 this triangular area, on the north side of the exit ramps between Metcalfe Street and Elgin, has been totally transformed from a natural condition, dominated by a ground cover of manicured

grass with occasional landscape plantings (pine, spruce, and apple). Some non-native Manitoba Maple (*Acer negundo*) has become established. There is a single Bur Oak (*Q. macrocarpa*) present which may be of natural origin (e.g. developed from a cut stump along the former railway bed). This is a common species with no particular significance. The whole area east of staging area E2 has no natural environment features of significance and exhibits no potential to support any.

Staging Area E3 – Between O'Connor Street and Metcalfe Street

This site, very similar to staging areas E3 and E2, is a rectangular area totally transformed from a natural condition. The site is on fill forming the highway embankment slope on the north side between O'Connor Street and Metcalfe Street. Vegetation is an open, grass slope with scattered planted Red Oak, Red Pine, White and Blue spruce in small clusters throughout, none of notable size. Manitoba Maple and Staghorn Sumac (*Rhus typhina)* occupy neglected areas. Aside from a mature Flowering Crab (*Malus* sp.), which appears to be a survivor of the former railway corridor that preceded the highway and perhaps an even earlier semi-rural period, there are no natural values evident and therefore a very low potential to sustain native features.

Staging Area M1 -Ballantyne Park

This park site consists of manicured grass back to the highway shoulder. Several large, healthy (ca. 80 cm DBH) Sugar Maple (*A. saccharum*) trees at the west corner of the Park may be native. Five Sugar Maples of moderate size aligned along Hawthorne Avenue are diseased and in poor condition. A 40 cm DBH Red Oak in the easterly park area near Hawthorne Avenue is probably planted. A cluster of non-native but non-invasive, mature and aesthetically valuable Japanese Lilac (*Syringa* [*reticulata*?]) trees are located in the central area of the park. A variety of scrubby trees have been planted along the back of the Park on the highway embankment slope (Red Pine, White Spruce, Norway Spruce (*P. abies*) and Norway Maple (*A. platanoides*)), and have mixed with dense Manitoba Maple growth and scattered, immature Black Walnuts to the west, where the highway slope abuts a parking lot. This is one of the few locations that could potentially have some (urban) wildlife value.



Figure 3: Ballantyne Park Staging Area M1 and Staging Area M4

There is no native ground vegetation present, although there appear to be some significant values evident (specimen trees). This is a culturally significant site commemorating a pioneer Ottawa naturalist, intellectual and civic leader, James Ballantyne. There is a memorial structure in the centre of the Park identifying his former residence site. Retention/protection of the single mature Sugar Maple would be preferred as a specimen native tree and possibly also the Red Oak identified at the east of the Park. The lilacs in the central area portion should be retained or salvaged (aesthetics) if possible. All other (overwhelmingly non-native) vegetation could be removed and beneficially replaced, following construction, with native species including Sugar Maple, Bur Oak (*Q. macrocarpa*) and Basswood (*Tilia americana*).

Staging Area M4 -North of Old Town Hall, East of Main Street

This site adjacent to the Queensway ROW consists of a sparsely woodedarea and scrubby understory. Trees appear generally unhealthy and are located primarily on the perimeter of the site to the north, east, and west. Manitoba Maple, Norway Maple and Green Ash (*Fraxinus pennsyvanica*) dominate, while the understory vegetative community is dominated with Goldenrod (*Solidago sp.*) and Riverbank Grape (*Vitis riparia*). Grasses and weedy growth within the ROW runs parallel to Main Street. Although the existing trees offer the potential for bat cavities (none observed), there are no natural values evident and therefore a very low potential to sustain native features.

Rideau Canal Bridge Staging Areas

Staging area options to replace the two 3-span bridges over the Rideau Canal have been considered at Ballantyne Park and the Nicholas Street interchange. Several bridge replacement construction alternatives have been reviewed and recommended for further consideration including: conventional construction using sequential staging for removal and the replacement; off-site construction utilizing a rapid replacement jack-and-slide technology; and, rapid replacement utilizing self-propelled mobile transporter (SPMT) transportation/removal to and from an off-site bridge construction and demolition staging area.

Staging areas under consideration for the conventional Rideau Canal Bridge replacement structures construction would only be necessary for materials and equipment storage, and would likely include staging areas E1, possibly E2 and a portion of staging area M1. Environmental features of these sites have been discussed in the previous section.

To proceed with Canal bridge replacements utilizing jack-and-slide methodologies will require the full utilization/levelling of staging areas E1 and E2 as well as Area M1, which would likely result in utilization of the entire Ballantyne Park including the treed, weedy strip between the Queensway and the Royal Oak Pub on the north side of Hawthorne Avenue and Colonel By Drive. There may also be a requirement to remove several mature trees to the north of the Queensway Canal bridges, possibly including a 30 cm DBH Amur Maple (*A. ginnala*), Red Pine and Basswood in front of an apartment on Queen Elizabeth Driveway, and a row of large Silver Maple (*A. Saccharinum*) and Blue Spruce along the west Canal bank. Several larger trees line the east bank north of the bridges as well, including White Spruce and a 40 cm DBH Amur Maple. The northeast bridge quadrant is currently grassed with a 40+ cm DBH specimen Red Oak that will require removal. In the southwest quadrant are a Red and White Pine grouping, a blue spruce and a red oak (dying), all easily replaceable. In order to undertake the removal and replacement work, additional site preparation will be required. In order to prepare the site for demolition and bridge replacement, temporary filling of the Canal with rock/earth fill may be required after the annual October draining period.

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Nicholas Street Interchange Woodlot Staging Area

The northwest quadrant of the Nicholas Street interchange has been identified as a construction staging, assembly and demolition site for SPMT rapid replacement. The existing bridges would be individually removed and transported to the staging area along the Queensway for demolition, and new bridges assembled for transport to the canal for placement.

Although there is currently an extensive grassed area available for use, it may be necessary to remove all or a portion of an existing woodlot in order to provide an adequate work area. The woodlot is extensive, 250 m in length and 40 m in width at its widest. The woodlot is immediately adjacent to a similar sized but widening band of woody vegetation encroaching from the adjacent condominium development to the northwest. Together, they are slightly less than one hectare in size.

It appears the main woodlot has been entirely planted. From the size of many of the tree specimens it appears to be 50 years of age, although there may have also been supplemental plantings over an extended period. Remnants of plastic tree stem guards were observed in several internal areas. Aspen poplars (average 30-40 cm DBH), both Trembling Aspen (*Populus tremuloides*) and Large Toothed Aspen (*P. grandidentata*), have surpassed most other planted species in growth rate; however, numerous specimens of Sugar Maple, Green Ash, dying, White Birch (*Betula papyrifera*), Basswood and willow (*Salix* sp.) also occur throughout. The competition between planted species has left several stunted or dead within the woodlot interior. Dead or dying specimens of White Spruce and European Larch (*Larix decidua*) are partially or completely hidden in the dense understory. Numerous invasive trees and shrubs, native and alien, have become established along the extensive woodlot edge, including Tartarian Honeysuckle (*Lonicera tatarica*), Manitoba Maple, Black Walnut and Staghorn Sumac. The destructive and non-native, invasive Dog-Strangling Vine (*Cynanchum rossicum*) has become well established along several areas in recent years.

3.0 DISCUSSION

Following a preliminary review of the study area location, MNRF has identified the Rideau River and Canal as the key natural resource values in the general subject area (See **Attachment 2**). MNRF did not have any specific information available for any of the proposed staging areas or the Nicholas Street woodlot, nor did they identify any nearby environmentally sensitive areas or significant wetlands. None were noted under the City of Ottawa's Official Plan (2003). Three Earth Science Areas of Natural and/or Scientific Interest (ANSIs) are in the general vicinity 2 km. to the east and south, well outside the study area.

Scattered tree groupings of variable size, treed sections of Ballantyne Park and several neglected parking lot fringes offer some semblance of "natural" area in the urban core. The woodlot in the northwest quadrant of the Nicholas Street interchange just beyond the eastern end of the study area, appears to be 40 to 50 years of age and offers the largest undisturbed stand of woody vegetation in the Study Area. It appears to have been planted following highway construction in the 1970s and has been expanding in size since then. The woodlot is not present on a 1969 aerial photograph.

Species at Risk (SAR)

The Natural Heritage Information Centre (NHIC) and internal records at the MNRF have indicated that there is a potential for the following threatened (THR) or endangered (END) terrestrial species to be present in the study area.

- Barn Swallow (THR)
- Butternut (END)
- Chimney Swift (THR)
- Eastern Small-Footed Myotis (END)
- Northern Long-Eared Bat (END)
- Tricoloured Bat (END)

These Species at Risk (SAR) are identified as native plants or animals in danger of extinction and are either protected by the federal *Species at Risk Act* (SARA, 2002) or the Provincial *Endangered Species Act* (ESA, 2007).

Two Special Concern species (SC) have been documented to occur either on the site or nearby. Although not protected under the ESA, 2007, they are protected under the *Fish and Wildlife Conservation Act* and/or *Migratory Birds Convention Act*.

- Peregrine Falcon (SC)
- Snapping Turtle (SC)

MNRF has indicated that breeding birds may be present on site. The *Migratory Birds Convention Act* and the ESA may be triggered if these birds are affected. Negative impacts may be avoided by clearing vegetation, outside of the breeding bird season (April 15th – August 15th), or by surveys conducted by a qualified professional, to ensure no breeding birds are present before clearing of vegetation.

They also identify that no work should occur in turtle overwintering habitat from October 16th – March 15th, in order to protect hibernating turtles. Turtles can be found travelling on land during the active season (April 1st – October 30th). If the proposed works are to occur during these times, the MNRF recommends fencing off the site, prior to work being undertaken, in order to prevent turtles from accessing the site. **Table 1** below outlines the SAR that could possibly be present in the study area.

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Table 1: Potential Species at Risk in Study Area

Common Name (*Scientific name*)	SARA Status[1] ESA Status[2]	Habitat Requirements[3]	Habitat in Study Area
Little Brown Myotis	END	Buildings, trees for roosting and nesting; feeding over water and most terrestrial landscapes	Formerly very common and probably still occurs along the length of the Rideau Canal in urban Ottawa in small numbers
Eastern Small Footed Myotis[4] (*Myotis leibii*)	END	In the spring and summer these bats will roost in buildings, under bridges, or in hollow trees. They often change their roosting locations every day. At night, they hunt for insects to eat. In the winter these bats hibernate, choosing colder and drier sites than similar bats and will return to the same spot each year.	No urban record and no particularly suitable habitat
Northern Long-Eared Myotis[5] (*Myotis septentrionalis*)	END	These bats are associated with boreal forests, choosing to roost under loose bark and in the cavities of trees. These bats hibernate from October or November to March or April, most often in caves or abandoned mines.	No urban record and no particularly suitable habitat
Tricoloured Bat[6] - (Eastern Pipistrelle) (*Perimyotis subflavus*)	END	Tricolored bats mate in autumn in the area around their hibernacula. The females store their mates' sperm during their hibernation in winter and ovulate in early spring alone or in small groups, in caves or mines at temperatures from 4 to 10 °C, and they usually return to the same hibernation site year after year. Tricolored bats live for about 10 to 15 years.	No urban record and no particularly suitable habitat
Butternut (*Juglans cinerea*)	END	Butternut is a medium-sized tree that can reach up to 30 m in height. It belongs to the walnut family and produces edible nuts in the fall. Butternut usually grows alone or in small groups in moist, well-drained soil and is often found along streams.	Searched for in all woodland areas and not found

[1] Status on October, 2017. Status may change on both the SARA and ESA Registries
[2] Ibid
[3] Species at Risk, Ontario.ca
[4] Ontario's bats are threatened by a disease known as white nose syndrome, caused by a fungus. The fungus grows in humid cold environments, such as the caves and mines. The syndrome affects bats by disrupting their hibernation cycle, so that they use up body fat supplies before the spring when they can once again find food sources. It is also thought that the fungus affects the wing membrane, which helps to maintain water balance in bats.
[5] Ibid
[6] Ibid

Common Name (*Scientific name*)	SARA Status[1] ESA Status[2]	Habitat Requirements[3]	Habitat in Study Area
		It is also found on well-drained gravel sites and rarely on dry rocky soil. This species does not do well in the shade, and often grows in sunny openings and near forest edges. Butternut Canker, a fungal disease, spreads quickly and can kill a tree within a few years. Most trees are infected, although some live for many years.	
Barn Swallow (*Hirundo rustica*)	THR	Barn Swallows often live in close association with humans. They build their cup-shaped mud nests almost exclusively on human-made structures such as open barns, under bridges and in culverts that include ledges where they can build their nests, which are often re-used from year to year. They prefer unpainted, rough-cut wood, since the mud does not adhere as well to smooth surfaces. This bird's nests are often destroyed when old buildings or bridges are taken down. The number of Barn Swallows in Ontario decreased by 65 percent between 1966 and 2009.	Although formerly common under Canal bridges, never observed nesting beneath Highway 417 bridge (pers. obs.) and on longer structures occurring along the Canal
Chimney Swift (*Chaetura pelagica*)	THR	Before European settlement Chimney Swifts mainly nested on cave walls and in hollow trees or tree cavities in old growth forests. Today, they are often found in urban settlements where they nest and roost in chimneys and other structures.	Sites may be available in old buildings with large, brick chimneys in adjacent built areas
Peregrine Falcon (*Falco peregrinus*)	SC	Birds have adapted to city life. Urban Peregrines raise their young on ledges of tall buildings, even in busy downtown areas. Cities offer Peregrines a good year-round supply of pigeons and starlings to feed on.	Two breeding pairs move extensively throughout urban Ottawa and likely periodically perch on buildings in or about the study area
Snapping Turtle (*Chelydra serpentina*)	SC	Snapping Turtles spend most of their lives in water. They prefer shallow waters so they can hide under the soft mud and leaf litter, with only their noses exposed to the surface to breathe. During the nesting season females travel overland in search of a suitable nesting site, usually gravelly or sandy areas along streams.	Unlikely but possible in Canal but only as a transitory occurrence (no suitable habitat)

Vegetation Communities

Plant communities in staging areas E1, E2, E3 and M1 are by-and-large considered Mineral Cultural Meadow (CUM1) Ecosites, reflecting the urban nature of the sites with occasional landscape plantings. Several smaller, undisturbed corners have been invaded by aggressive species including Staghorn sumac and black walnut and could be classified more accurately as Mineral Cultural Thicket (CUT1). The vacant wooded lot comprising Staging Area M4 would appear to meet the definition of Cultural Woodland (CUW). The large woodlot at the Nicholas Street interchange, however, would appear to fit the Dry, Fresh White Birch-Poplar-Conifer Mixed Forest (FOM5) Ecosite definition, as a young early succession forest following disturbance (planting).

Although several tree specimens are approaching 45 cm+ in DBH and are in fair to good condition within the study area (Nicholas Street woodlot, north of the Queensway along the Rideau Canal, in front of buildings on Queen Elizabeth Driveway and Colonel By Drive and the specimen red oak in the northeast quadrant of the Rideau Canal bridges), none would qualify for City of Ottawa's Honour Role Trees = or >50 cm DBH.

Avifauna

The study area provides a highly disturbed and urbanized mix of habitat for bird species. Few native birds were seen utilizing the sites during any of the site visits. One Black-Capped Chickadee (*Poecile atricapillus*) was observed in Ballantyne Park (coming in from the adjacent residential area) and an American Goldfinch (*Spinus tristis*) perched momentarily in a Manitoba maple along the north right-of-way. No doubt the occasional Starling (*Sturnus vulgaris*), American Robin (*Turdus migratorius*) or Red-Winged Blackbird (*Agelaius phoeniceus*) nests in the tangle along the highway here, as they do commonly everywhere, but none were evident. Nesting birds are not an issue at any of the sites; however, if trees need to be cut down during nesting season (April 15 through August 15) at whatever sites are to be impacted, it will be necessary to do a 'just before' survey for nesting native migratory birds. The conclusion is that there is neither faunal significance – nor potential for significant terrestrial species - for any of the highly disturbed sites, with the possible exception of the Nicholas Street woodlot.

The undersides of all bridges at Main Street, Metcalfe Street, Elgin Street and the Rideau Canal were inspected on June 17, 2017 for the possible presence of Barn Swallow (*Hirundo rustica*) nests. The under-surfaces are smooth concrete, which appears to have made it impossible to attach nests. No nests were observed. The pier caps of the Rideau Canal bridges have suitable horizontal and vertical surfaces available for nests; however, no nests were observed. A Rock Pigeon (*Columba livia*) and Starling were observed, perched momentarily on the west pier cap, during the inspection.

Of the identified avian SAR for the study area, one or more of the bats, Chimney Swifts and Peregrine Falcons could possibly be resident. None of the aforementioned where observed on any of the field visits.

A detailed listing of all plants and animals observed in the study area during any of the field visits can be viewed in **Attachment 3.**

4.0 PRELIMINARY ASSESSMENT OF POTENTIAL IMPACTS ON NATURAL RESOURCE VALUES

MNRF suggests in their correspondence that cumulative effects of infrastructure development projects be given due consideration, including evaluation of past, present and possible future impacts of transportation improvements on surrounding areas.

Tree/Woodlot/Wildlife Significance

A surprising amount of woody vegetation and particularly small areas of semi-natural vegetation occur throughout the study area in isolated, often neglected locations. None of these areas would be considered significant on their individual merits. The exception, however, would be the Nicholas Street woodlot, which, due to its size (just under 1 hectare) and proximity to the downtown core, could identify this 'large' tract as significant, certainly within this study's context.

There are no nearby identified environmentally sensitive areas, ANSIs or significant wetlands noted by MNRF or under the City of Ottawa's Official Plan. With the exception of the Nicholas Street woodlot, the study area provides a highly disturbed and urbanized mix of habitat for bird and mammal species. Nesting birds are not an issue at any of the bridges (barn swallows). Aside from the larger tree specimens closer to the Rideau Canal on the north side of Highway 417, there are no natural values or features evident, at any of the proposed staging areas near the canal, and therefore there is a very low potential to sustain native features and significant natural environment values. The scrubby trees along the back of the Park are one of the few locations in the immediate vicinity of the bridges that could potentially have some urban wildlife value. Retention/protection of several specimen trees scattered through the study area would be preferred.

The woodlot in the northwest quadrant of the Nicholas Street interchange in the eastern end of the study area offer the largest undisturbed stands of woody vegetation and could be considered as significant. None of the individual trees are exceptional. Wildlife habitat opportunities for small mammals and songbirds, tolerant of the urban environment, are very good considering the area's isolated location away from human interference. Several of the bat species may utilize the area, given the perching opportunities in the woody vegetation.

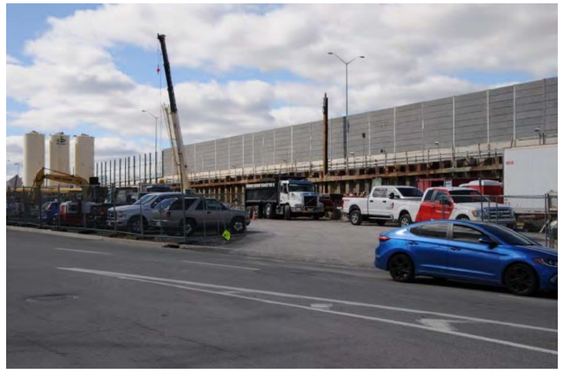


Figure 4: Example ROW Staging Area on the Queensway at O'Connor Street

Preparations for staging sites that are under consideration for Elgin Street, Metcalfe Street and Main Street bridge replacements (E1, E2, E3, M1 and M4) will essentially include total removal of vegetation, followed by roadway protection to permit temporary excavation and levelling of the site (see **Figure 4**). Several Queensway Rideau Canal bridge replacement construction alternatives have been reviewed and recommended for further consideration. They may require the full utilization/levelling of Staging Areas E1, E2, M1 and M2, as well as tree removals to the north of the Rideau Canal bridges. In order to prepare the site for

demolition and bridge replacement, temporary filling of the canal with rock/earth fill may be necessary. In order to assemble replacement bridges at the Nicholas Street interchange it may be necessary to clear a portion or perhaps all of the existing woodlot coverage in the northeast quadrant.

A figure that identifies potential vegetation disturbance areas, particularly if rapid removal techniques are employed for the canal bridge replacements, can be found in **Attachment 4**.

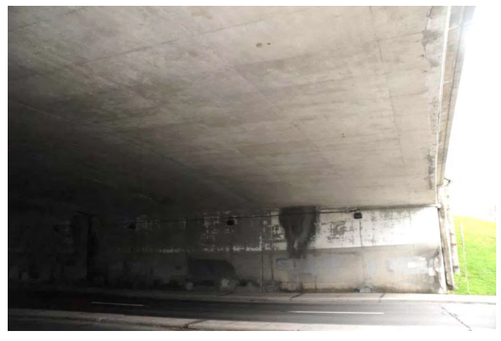
Attachment 1

ATTACHMENT 1: SITE PHOTOGRAPHS

Elgin Street Bridges



Highway 417 bridge over Elgin Street, viewed from the north. The underside of the deck offers no bird nesting opportunities



Metcalfe Street Bridges



The underside of the Highway 417 bridge over Metcalfe Street is similar to the Elgin Street bridge and offers no bird nesting opportunities



ATTACHMENT 1: SITE PHOTOGRAPHS

Main Street Bridges



The underside of the Highway 417 bridge over Main Street is also similar to the Metcalfe and Elgin Street bridges and offers no nesting opportunities



Rideau Canal Bridges



The underside of the bridges offer no nesting opportunities, with the exception of the pier caps, where a Rock Pigeon was perched

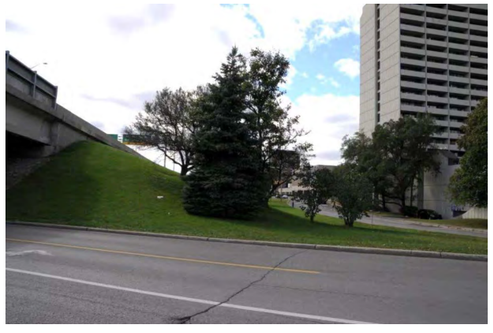


ATTACHMENT 1: SITE PHOTOGRAPHS

Site E1



Planted pines and spruces extend along the north side of Catherine Street. Lilac shrubs, a 25 cm DBH Red Oak, a Red Pine, an apple and Blue Spruce grouping is adjacent to Queen Elizabeth Driveway



Site E2



Planted White Pines and a dying ash along the base of the manicured grass ROW slope between Catherine Street and the Queensway ramp

Site E3



White Spruce and Red Pine trees have been planted across the upper ROW slope. Staghorn Sumac and Manitoba Maple have spread from elsewhere

ATTACHMENT 1: SITE PHOTOGRAPHS

North of Queensway West Side of Rideau Canal



Amur maples extend along Queen Elizabeth Driveway at an apartment (above). Silver Maples and Blue Spruce line the canal at the road (below)



North of Queensway East Side of Rideau Canal



Maples are located 75 m north of the Queensway on Colonel By Drive (above). A 40+ cm Red Oak is on the east bridge abutment slope (below)



ATTACHMENT 1: SITE PHOTOGRAPHS

Rideau Canal/Queensway Southeast Quadrant



Manitoba Maple, Green Ash, Black Walnut, Staghorn Sumac and Red Osier Dogwood have invaded the area between the Queensway and parking lot



Rideau Canal/Queensway Southwest Quadrant



A landscape plant grouping, trees and shrubs are scattered across the manicured grass slope adjacent to the west Canal bridge abutment



ATTACHMENT 1: SITE PHOTOGRAPHS

Site M1 (Ballantyne Park)



Several large Sugar Maples tower above the Park (above). Further along Hawthorne trees are diseased. A memorial plaque identifies this as a historic park (below)





Above, a dense growth of trees and shrubs grows along the north boundary against the noise barriers. Below, a construction company office immediately to the east is housed in an old gas station style building

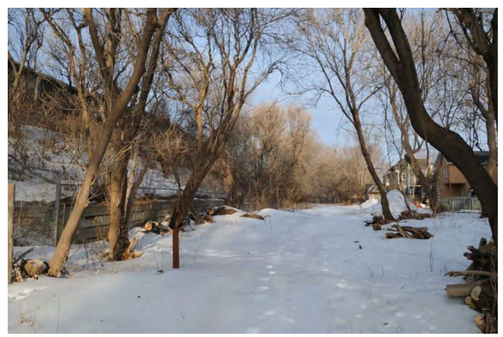


ATTACHMENT 1: SITE PHOTOGRAPHS

Site M4



Site M4 is located between the Queensway ROW and the old City Hall Building on Main Street across from the old gas station (above). Manitoba Maples are established along the perimeters of the property (below)





The adjacent ROW is grassed with scattered low shrubs and weedy growth for its entire length (above). Norway Maple and Green Ash appear towards the back (east end) of the property



ATTACHMENT 1: SITE PHOTOGRAPHS

Nicholas Street/Queensway Interchange Woodlot



The woodlot extends along the northwest quadrant of the interchange, surrounded by an extensive area of manicured grass and adjacent to a widening band of woody vegetation screening a condominium



A number of tree species were originally planted by MTO to create the woodlot. It has expanded significantly in size as a broad range of invasive species have established along the woodlot margins





Attachment 2

Ministry of Natural Resources and Forestry

Kemptville District

10 Campus Drive
Postal Box 2002
Kemptville ON K0G 1J0
Tel.: 613 258-8204
Fax: 613 258-3920

Ministère des Richesses naturelles et des Forêts

District de Kemptville

10, promenade Campus
Case postale, 2002
Kemptville ON K0G 1J0
Tél.: 613 258-8204
Téléc.: 613 258-3920

Wed. Nov 29, 2017

Rudi Warmé
BT Engineering (BTE)
223 William Street
Belleville, Ontario
K8N 3K1

rudi.warme@bteng.ca

Attention: Rudi Warmé

Subject: **Information Request - Infrastructure (Drain, Bridge, Culvert)**
Project Name: **EA for replacement of Highway 417 Queensway Metcalfe, Elgin, and Main Street bridges, and Nicholas Street Interchange**
Site Address: **Highway 417 at Metcalfe, Elgin, and Main Street bridges, and Nicholas Street Interchange, Ottawa**
Our File No. **2017_NEP-4315**

Natural Heritage Values
The Ministry of Natural Resources and Forestry (MNRF) Kemptville District has carried out a preliminary review of the area in order to identify any potential natural resource and natural heritage values.

The following Natural Heritage values were identified for the general subject area:

- River (Non-Sensitive)

Municipal Official Plans contain information related to natural heritage features. Please see the local municipal Official Plan for more information, such as specific policies and direction pertaining to activities which may impact natural heritage features. For planning advice or Official Plan interpretation, please contact the local municipality. Many municipalities require environmental impact studies and other supporting studies be carried out as part of the development application process to allow the municipality to make planning decisions which are consistent with the Provincial Policy Statement (PPS, 2014).

The MNRF strongly encourages all proponents to contact partner agencies and appropriate municipalities early on in the planning process. This provides the proponent with early knowledge regarding agency requirements, authorizations and approval timelines; Ministry of the Environment and Climate Change (MOECC) and the local Conservation Authority may require approvals and permitting where natural values and natural hazards (e.g., floodplains) exist.

As per the Natural Heritage Reference Manual (NHRM, 2010) the MNRF strongly recommends that an ecological site assessment be carried out to determine the presence of natural heritage features and species at risk and their habitat on site. The MNRF can provide survey methodology for particular species at risk and their habitats.

The NHRM also recommends that cumulative effects of development projects on the integrity of natural heritage features and areas be given due consideration. This includes the evaluation of the past, present and possible future impacts of development in the surrounding area that may occur as a result of demand created by the presently proposed project.

In Addition, the following Fish species were identified: alewife, Baitfish, banded killifish, black crappie, blackchin shiner, bluegill, bluntnose minnow, brown bullhead, common carp, emerald shiner, golden shiner, greater redhorse, johnny darter, johnny darter/tesselated darter, largemouth bass, logperch, mottled sculpin, muskellunge, northern pike, pumpkinseed, river redhorse, rock bass, shorthead redhorse, slimy sculpin, smallmouth bass, Sunfishes, walleye, white sucker, yellow perch.

Species at Risk
A review of the Natural Heritage Information Centre (NHIC) and internal records indicate that there is a potential for the following threatened (THR) and/or endangered (END) species on the site or in proximity to it:

- American Eel (END)
- Barn Swallow (THR)
- Blanding's Turtle (THR)
- Butternut (END)
- Chimney Swift (THR)
- Eastern Small-footed Myotis (END)
- Lake Sturgeon (THR)
- Northern Long-eared Bat (END)
- Tri-Colored Bat (END)

All endangered and threatened species receive individual protection under section 9 of the ESA and receive general habitat protection under Section 10 of the ESA, 2007. Thus any potential works should consider disturbance to the individuals as well as their habitat (e.g. nesting sites). General habitat protection applies to all threatened and endangered species. Note some species in Kemptville District receive regulated habitat protection. The habitat of these listed species is protected from damage and destruction and certain activities may require authorization(s) under the ESA. For more on how species at risk and their habitat is protected, please see: https://www.ontario.ca/page/how-species-risk-are-protected.

If the proposed activity is known to have an impact on any endangered or threatened species at risk (SAR), or their habitat, an authorization under the ESA may be required. It is recommended that MNRF Kemptville be contacted prior to any activities being carried out to discuss potential survey protocols to follow during the early planning stages of a project, as well as mitigation measures to avoid contravention of the ESA. Where there is potential for species at risk or their

habitat on the property, an Information Gathering Form should be submitted to Kemptville MNRF at sar.kemptville@ontario.ca.

The Information Gathering Form may be found here:
http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/FormDetail?OpenForm&ACT=RDR&TAB=PROFILE&ENV=WWE&NO=018-0180E

For more information on the ESA authorization process, please see:
https://www.ontario.ca/page/how-get-endangered-species-act-permit-or-authorization

One or more special concern species has been documented to occur either on the site or nearby. Species listed as special concern are not protected under the ESA, 2007. However, please note that some of these species may be protected under the Fish and Wildlife Conservation Act and/or Migratory Birds Convention Act. Again, the habitat of special concern species may be significant wildlife habitat and should be assessed accordingly. Species of special concern for consideration:

- Peregrine Falcon (SC)
- Snapping Turtle (SC)

If any of these or any other species at risk are discovered throughout the course of the work, and/or should any species at risk or their habitat be potentially impacted by on site activities, MNRF should be contacted and operations be modified to avoid any negative impacts to species at risk or their habitat until further direction is provided by MNRF.

Breeding birds may be present on site. The Migratory Birds Convention Act and the ESA may be triggered if these birds are affected. Negative impacts may be avoided by clearing vegetation outside of the breeding bird season (April 15th – August 15th) or by surveys conducted by a qualified professional to ensure no breeding birds are present before clearing of vegetation.

No work should occur in turtle overwintering habitat from October 16th – March 15th in order to protect hibernating turtles. Turtles can be found travelling on land during the active season (April 1st – October 30th). If the proposed works are to occur during these times, the MNRF recommends fencing off the site prior to work being undertaken in order to prevent turtles from accessing the site.

Please note that information regarding species at risk is based largely on documented occurrences and does not necessarily include an interpretation of potential habitat within or in proximity to the site in question. Although this data represents the MNRF's best current available information, it is important to note that a lack of information for a site does not mean that additional features and values are not present. It is the responsibility of the proponent to ensure that species at risk are not killed, harmed, or harassed, and that their habitat is not damaged or destroyed through the activities carried out on the site.

The MNRF continues to strongly encourage ecological site assessments to determine the potential for SAR habitat and occurrences. When a SAR or potential habitat for a SAR does occur on a site, it is recommended that the proponent contact the MNRF for technical advice and to discuss what activities can occur without contravention of the Act. For specific questions regarding the

Endangered Species Act (2007) or SAR, please contact MNRF Kemptville District at sar.kemptville@ontario.ca.

The approvals processes for a number of activities that have the potential to impact SAR or their habitat have recently changed. For information regarding regulatory exemptions and associated online registration of certain activities, please refer to the following website: https://www.ontario.ca/page/how-get-endangered-species-act-permit-or-authorization.

Please note: The advice in this letter may become invalid if:

- The Committee on the Status of Species at Risk in Ontario (COSSARO) re-assesses the status of the above-named species OR adds a species to the SARO List such that the section 9 and/or 10 protection provisions apply to those species; or
- Additional occurrences of species are discovered on or in proximity to the site.

This letter is valid until: Thu. Nov 29, 2018

For any questions or concerns, please do not hesitate to contact me.

Sincerely,

Jane Devlin
Management Biologist
jane.devlin@ontario.ca

Encl.\
-ESA Infosheet
-NHIC/LIO Infosheet

Ministry of Natural Resources and Forestry

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Ontario

Email to MNR



Natural Areas and Features Information Request Form

Contact Information

Clear Contact

Name: Rudi Warmé

Address: 223 William Street, Belleville, On, K8N 3K1

*All red fields are mandatory

Phone Number: (905) 373-5736 ☐ Owner ☑ Consultant

This includes X & Y Coordinates.

E-mail Address: rudi.warme@bteng.ca

Please see page 2 for assistance.

Site Information

Project Name: Queensway Bridges MTO GWP 4170-13-00

Clear Site

Geographic Township: City of Ottawa Lot: Concession:

**Please refer to map on page 2 for info

X: 45.4123 Y: -75.6834 Address: Rideau Canal under Highway 417 O

**If more than 1 site, please provide all individual coordinates in an attached spreadsheet

Type of Proposal

Clear Details

- ☐ Severance / Zoning
- ☐ Hydroline clearing
- ☐ RE Projects
- ☐ Aggregate Project
- ☑ Drains / Roads / Culverts
- ☐ Small Scale Projects (less than 5 hectares)
- ☑ Large Scale Projects (5 hectares or greater)
- ☐ Other: Bridge Replacements

Attachments ***Please attach a Site Map showing the area of interest

☐ Picture ☑ Map(s) ☐ Engineered Drawings ☐ Other: _____

Request

I would like to request the following information for the property identified above:

Site 1, Rideau Canal - existing fisheries information/aquatic SAR

To better respond to your request please briefly outline the purpose for which this information is required
(e.g. proposed development, lot severance, etc. or attach details):

MTO EA for "rapid" replacement of Highway 417 Queensway Metcalfe Street, Elgin Street, Rideau Canal and Main Street bridges, with new bridge assembly/old bridge demolition in vacant adjacent areas (MTO ROW).

Date of works proposed: 1 / Dec / 2020

Please forward the competed form to:

Kemptville.Inforequest@Ontario.ca OR **Fax: 613-258-3920**

Attention: Information Requests

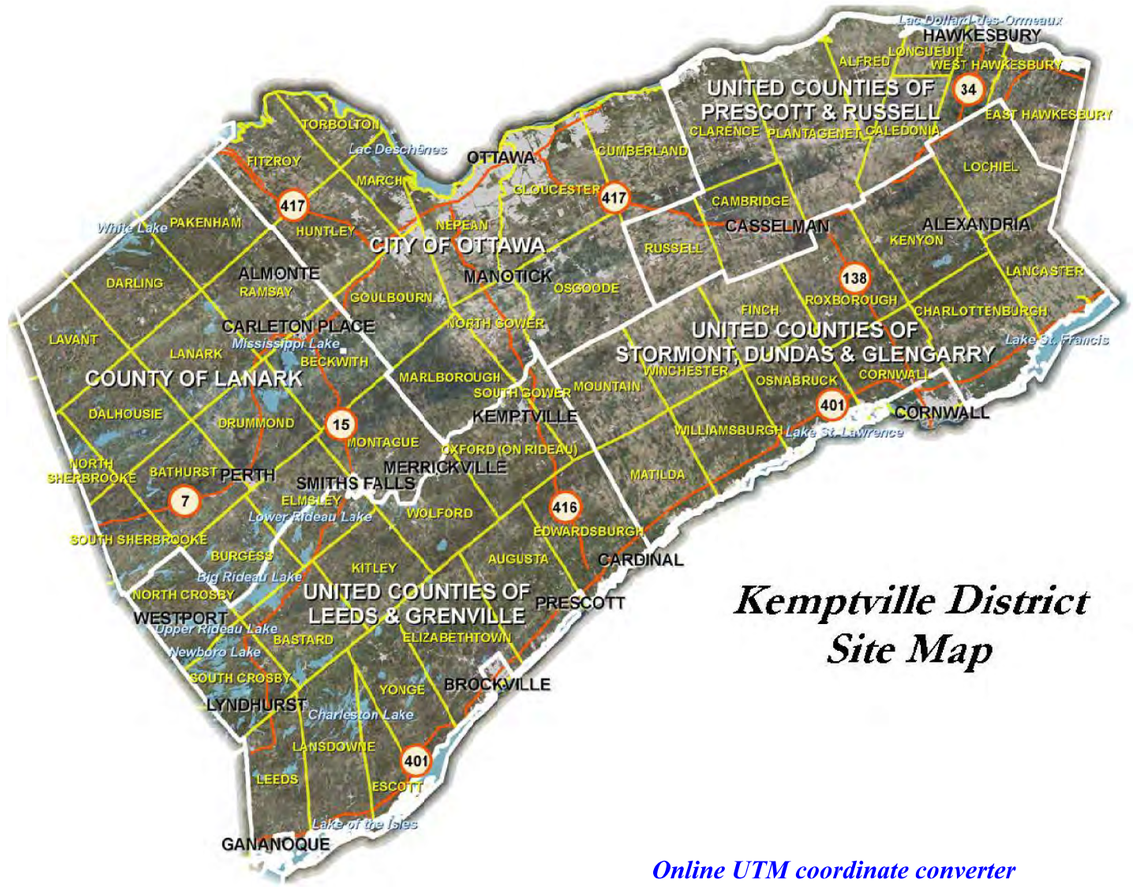
10 Campus Drive, Postal Bag 2002

Kemptville, ON K0G 1J0

Personal information contained in this form is collected in order to fulfill your request, respond to your inquiries and for other administration purposes. With regard to the personal information it collects, the ministry is bound by privacy protection rules under the Freedom of Information and Protection of Privacy Act and takes all necessary steps to safeguard personal information collected.

Please Note: This request MUST be made by the property owner or by someone acting on their behalf. Depending on the nature of the request, it may take 6-8 weeks to respond to your inquiry. If the request does not include the mandatory information, it may delay response time.

☑ ***I have read the above and agree to all Terms and Conditions***



Kemptville District Site Map

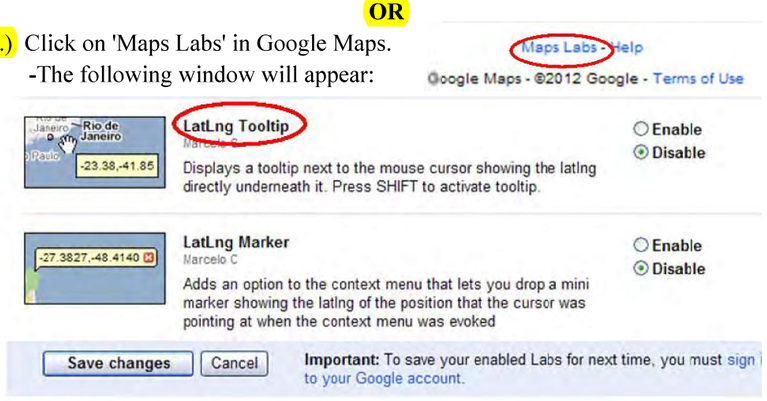
Online UTM coordinate converter

How to get X, Y coordinates from Google Maps (2 options):

1.) Right-click on the map, at the point of interest, and select 'What's here?'.
-The Latitude & Longitude of the mouse click, in decimal degrees, will automatically appear in the Search box.

OR

2.) Click on 'Maps Labs' in Google Maps.
-The following window will appear:



-Enable the LatLng Tooltip and then Save Changes.
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Ministry of Natural Resources and Forestry

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Ontario

Email to MNR



Natural Areas and Features Information Request Form

Contact Information

Clear Contact

Name: Rudi Warme

A dress: 223 William Street, Belleville, On, K8N 3K1

Phone Number: (905) 373-5736 ☐ Owner ☑ Consultant

~ mail A ress: rudi.warme@bteng.ca

*All red fields are mandatory

This includes X & Y Coordinates.

Please see page 2 for assistance.

Site Information

Project Name: Queensway Bridges MTO GWP 4170-13-00

Clear Site

Geographic Township: City of Ottawa Lot: Concession:

**Please refer to map on page 2 for info

X: 45.4126 Y: -75.6814 Address: ROW N. & S. and Ballantyne Park E

**If more than 1 site, please provide all individual coordinates in an attached spreadsheet

Type of Proposal

Clear Details

- ☐ Severance / Zoning
- ☐ H* roline clearing
- ☐ RE Pro'ects
- ☐ Aggregate Project
- ☑ Drains / Roads / Culverts
- ☐ Small Scale Projects (less than 5 hectares)
- ☑ Large Scale Projects (5 hectares or greater)
- ☐ Other: Bridge Replacements

Attachm nts ***Please attach a Site Map showing the area of interest**

☐ Pictur ☑ Map(s) ☐ Engineered Drawings ☐ Other: _____

Request

I would like to request the following information fo the property identified above:

Site 4, ROW East of Rideau Canal including Ballantyne park - SAR/Vegetation Information

To better respond to your request please briefly outline the purpose for which this information is required
(e.g. proposed development, lot severance, etc. or attach details):

MTO EA for "rapid" replacement of Highway 417 Queensway Metcalfe Street, Elgin Street, Rideau Canal and Main Street bridges, with new bridge assembly/old bridge demolition in vacant adjacent areas (MTO ROW).

Date of works proposed: 1 / Dec / 2020

Please forward the competed form to:
Kemptville.Inforequest@Ontario.ca OR **Fax: 656-258-3920**
Attention: Information Requests
10 Campus Drive, Postal Bag 2002
Kemptville, ON K0G 1J0

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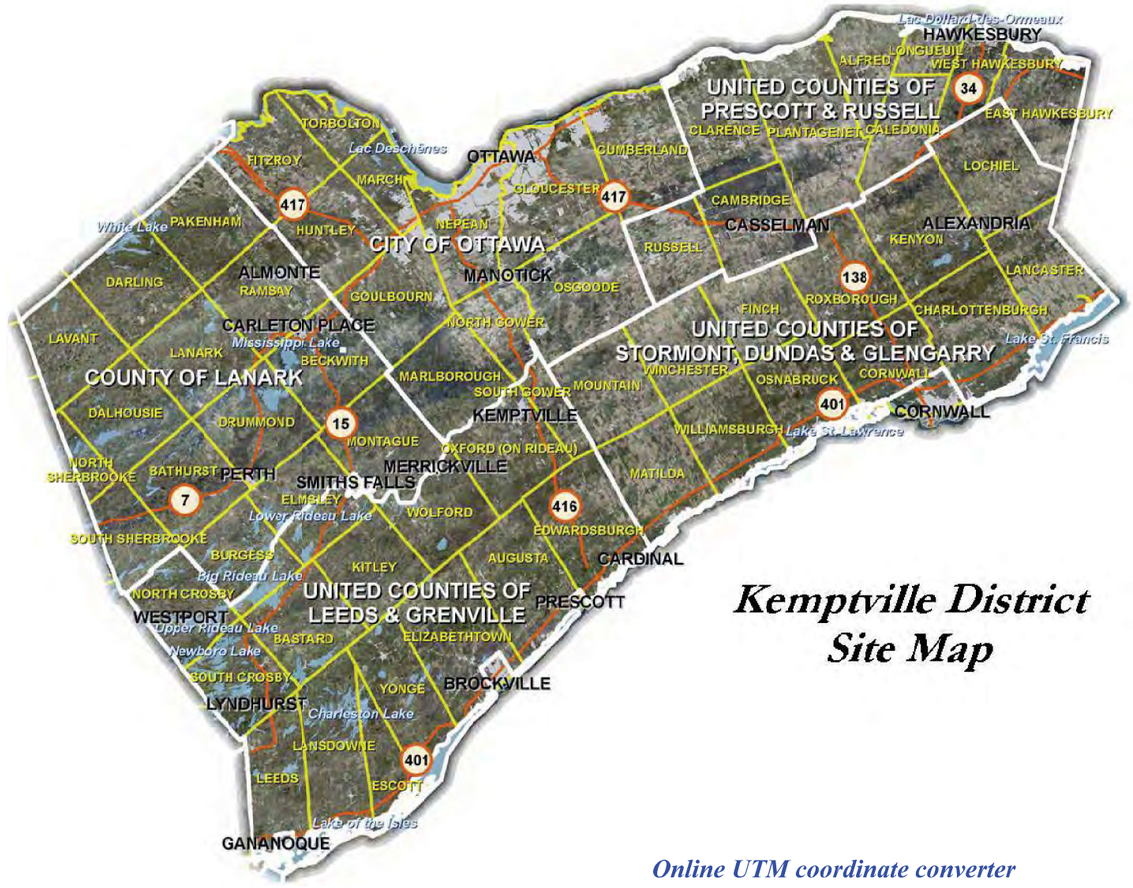

Kemptville District Site Map

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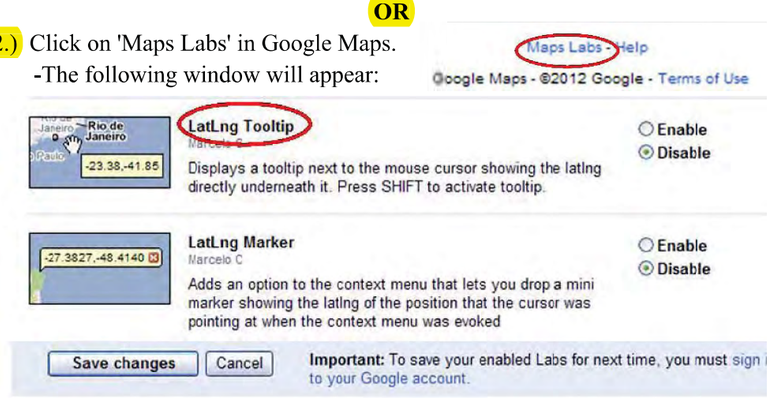

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Ministry of Natural Resources and Forestry

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Natural Areas and Features Information Request Form

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Phone Number: (905) 373-5736 ☐ Owner ☑ Consultant

~ mail A ress: rudi.warme@bteng.ca

**All red fields are mandatory*

This includes X & Y Coordinates.

Please see page 2 for assistance.

Site Information

Project Name: Queensway Bridges MTO GWP 4170-13-00

Clear Site

Geographic Township: City of Ottawa Lot: Concession:

***Please refer to map on page 2 for info*

X: 45.4102 Y: -75.6890 Address: ROW N. & S. of Hwy. 417 from Met

***If more than 1 site, please provide all individual coordinates in an attached spreadsheet*

Type of Proposal

Clear Details

- ☐ Severance / Zoning
- ☐ H* roline clearing
- ☐ RE Pro'ects
- ☐ Aggregate Project
- ☑ Drains / Roads / Culverts
- ☐ Small Scale Projects (less than 5 hectares)
- ☑ Large Scale Projects (5 hectares or greater)
- ☐ Other: Bridge Replacements

Attachm nts ****Please attach a Site Map showing the area of interest*

- ☐ Pictur
- ☑ Map(s)
- ☐ Engineered Drawings
- ☐ Other: _____

Request

I would like to request the following information fo the property identified above:

Site 3, ROW West of Rideau Canal - SAR/Vegetation Information

To better respond to your request please briefly outline the purpose for which this information is required
(e.g. proposed development, lot severance, etc. or attach details):

MTO EA for "rapid" replacement of Highway 417 Queensway Metcalfe Street, Elgin Street, Rideau Canal and Main Street bridges, with new bridge assembly/old bridge demolition in vacant adjacent areas (MTO ROW).

Date of works proposed: 1 / Dec / 2020

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Kemptville, ON K0G 1J0

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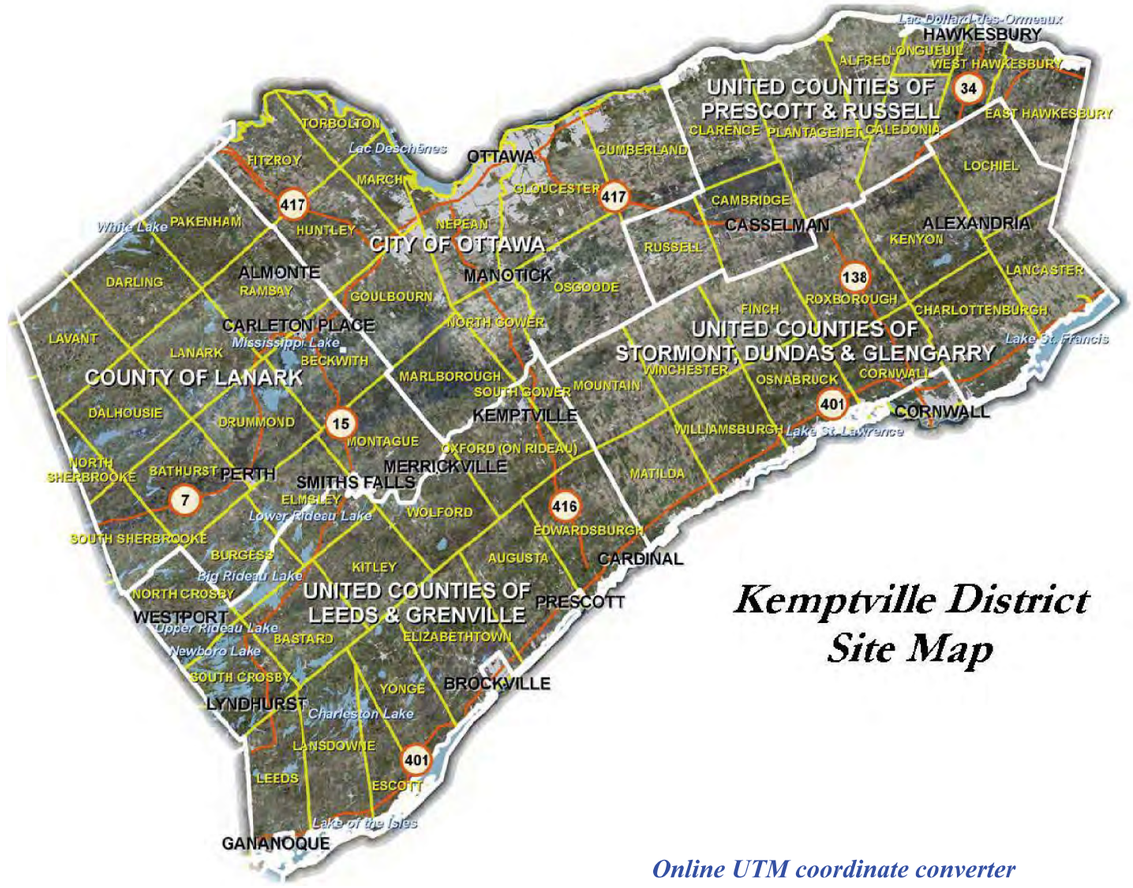

Kemptville District Site Map

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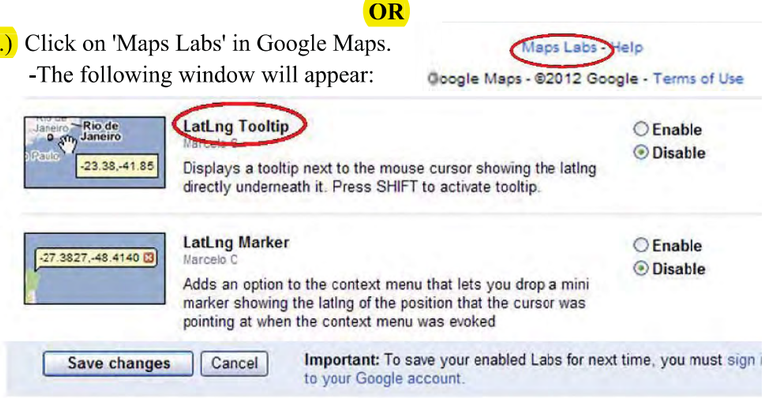

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Natural Areas and Features Information Request Form

Contact Information

Clear Contact

Name: Rudi Warme

A dress: 223 William Street, Belleville, On, K8N 3K1

Phone Number: (905) 373-5736 ☐ Owner ☑ Consultant

~ mail A ress: rudi.warme@bteng.ca

**All red fields are mandatory*

This includes X & Y Coordinates.

Please see page 2 for assistance.

Site Information

Project Name: Queensway Bridges MTO GWP 4170-13-00

Clear Site

Geographic Township: City of Ottawa Lot: Concession:

***Please refer to map on page 2 for info*

X: 45.4166 Y: -75.6776 Address: Woodlot at Nicholas Street/Queens

***If more than 1 site, please provide all individual coordinates in an attached spreadsheet*

Type of Proposal

Clear Details

- ☐ Severance / Zoning
- ☐ H* roline clearing
- ☐ RE Pro'ects
- ☐ Aggregate Project
- ☑ Drains / Roads / Culverts
- ☐ Small Scale Projects (less than 5 hectares)
- ☑ Large Scale Projects (5 hectares or greater)
- ☐ Other: Bridge Replacements

Attachm nts ****Please attach a Site Map showing the area of interest*

- ☐ Pictur
- ☑ Map(s)
- ☐ Engineered Drawings
- ☐ Other: _____

Request

I would like to request the following information fo the property identified above:

Site 2, Woodlot at Nicholas Street Interchange - Vegetation/SAR significance

To better respond to your request please briefly outline the purpose for which this information is required
(e.g. proposed development, lot severance, etc. or attach details):

MTO EA for replacement of Highway 417 Queensway Metcalfe Street, Elgin Street, Rideau Canal and Main Street bridges, with new bridge assembly/old demolition in vacant adjacent areas (MTO ROW).

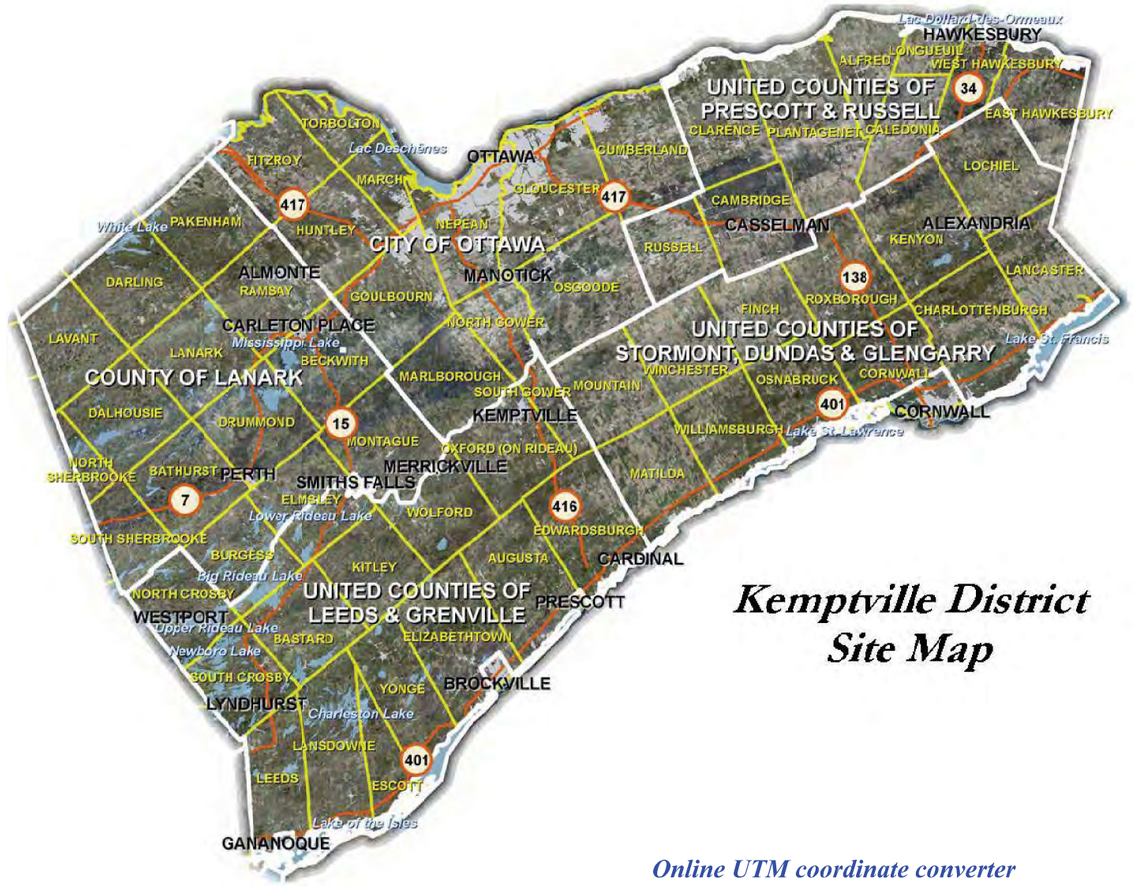
Date of works proposed: 1 / Dec / 2020

Please forward the competed form to:
Kemptville.Inforequest@Ontario.ca OR **Fax: 656-258-3920**
Attention: Information Requests
10 Campus Drive, Postal Bag 2002
Kemptville, ON K0G 1J0

Personal information contained in this form is collected in order to fulfill your request, respond to your inquiries and for other administration purposes. With regard to the personal information it collects, the ministry is bound by privacy protection rules under the Freedom of Information and Protection of Privacy Act and takes all necessary steps to safeguard personal information collected.

Please Note: This request MUST be made by the property owner or by someone acting on their behalf. Depending on the nature of the request, it may take 6-8 weeks to respond to your inquiry. If the request does not include the mandatory information, it may delay response time.

☑ ***I have read the above and agree to all Terms and Conditions***



Kemptville District Site Map

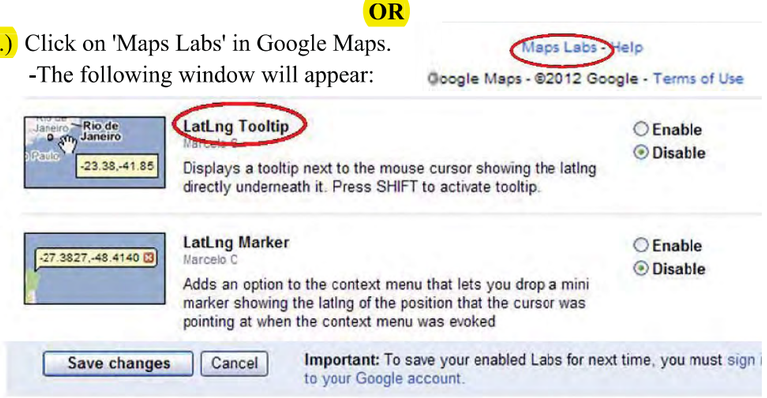
Online UTM coordinate converter

How to get X, Y coordinates from Google Maps (2 options):

1.) Right-click on the map, at the point of interest, and select 'What's here?'.
-The Latitude & Longitude of the mouse click, in decimal degrees, will automatically appear in the Search box.

OR

2.) Click on 'Maps Labs' in Google Maps.
-The following window will appear:



-Enable the LatLng Tooltip and then Save Changes.
-Now every time the **SHIFT** button is pressed in Google Maps, a Tool tip will appear with the Latitude and Longitude of the mouse location in decimal degrees.

Attachment 3

ATTACHMENT 3: SPECIES LISTING

Trees and Shrubs

Dog-Strangling Vine (*Cynanchum rossicum*)

Lilac (*Syringa vulgaris*)
Staghorn Sumac (*Rhus typhina)*
Japanese Lilac (*Syringa* [*reticulata*?])
Tartarian Honeysuckle (*Lonicera tatarica*)

Red Pine (*Pinus resinosa*)
Blue Spruce (*Picea pungens*)
White Spruce (*P. glauca*)
Norway Spruce (*P. abies*)
European Larch (*Larix decidua*)

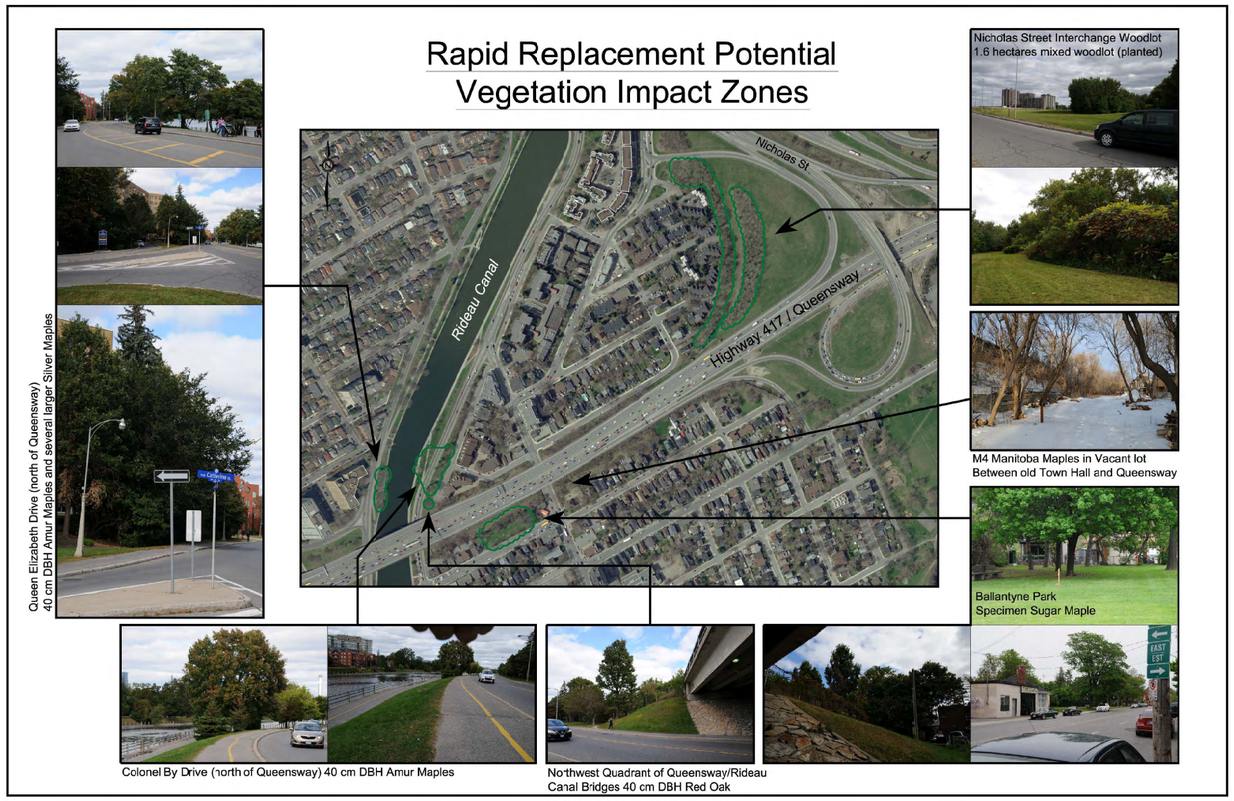
Black Walnut (*Juglans nigra*)
Red Oak *(Quercus rubra*)
Bur Oak (*Q. macrocarpa*)
Flowering Crabapple (*Malus sp.)*
Manitoba Maple (*Acer negundo*)
Sugar Maple (*A. saccharum*)
Norway Maple (*A. platanoides*)
Hackberry (*Celtis occidentalis*)
Basswood (*Tilia americana*)
Amur Maple (*A. ginnala*)
Silver Maple (*A. Saccharinum*)
Red Maple (*A. rubrum*)
Trembling Aspen (*Populus tremuloides*)
Large Toothed Aspen (*P. grandidentata*)
Red/Green Ash (*Fraxinus pennsyvanica*)
White Birch (*Betula papyrifera*)
Willow (*Salix* sp.)

Fauna

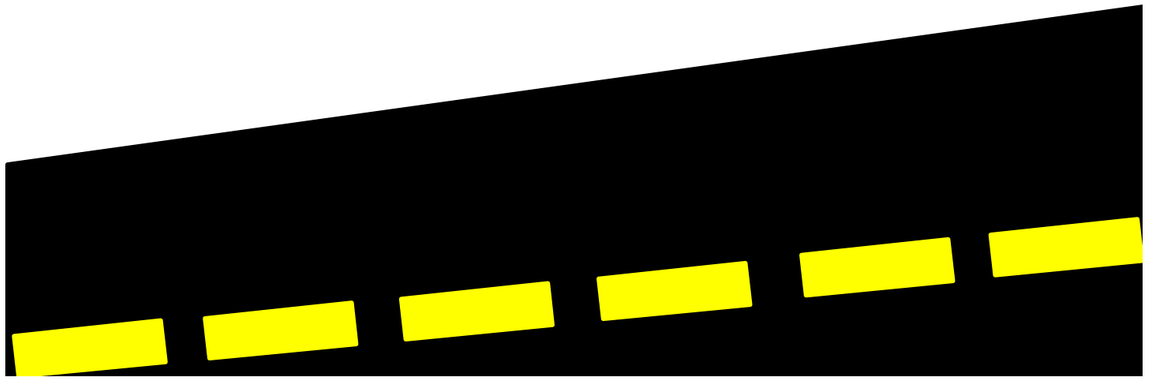
Grey Squirrel (*Sciurus carolinensis*)

Common Crow (*Corvus brachyrhynchos*)
Black-Capped Chickadee (*Poecile atricapillus*)
American Goldfinch (*Spinus tristis*)
Starling (*Sturnus vulgaris*)
American Robin (*Turdus migratorius*)
Red-Winged Blackbird (*Agelaius phoeniceus*)
Rock Pigeon (*Columba livia*)

Attachment 4



Appendix G2
Terrestrial Environmental Inventory Memorandum



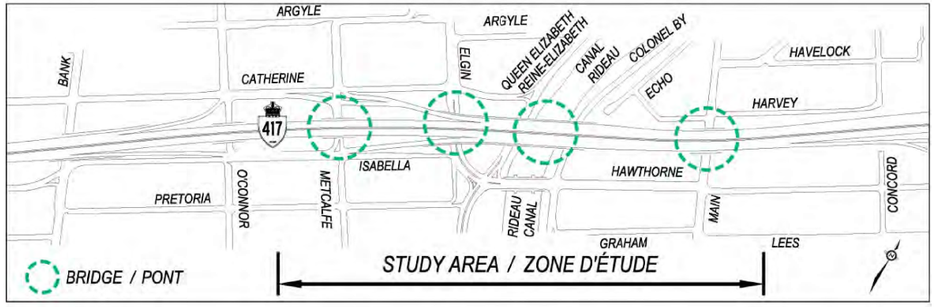
BT ENGINEERING
BTE
100 Craig Henry Drive, Suite 201
Ottawa, ON K2G 5W3

MEMORANDUM

TO:	Gord Bell, Environmental Planner, BTE	**DATE:**	July 17, 2017
CC:	Darcie Dillon, Assistant Project Manager	**BTE PROJECT #:**	BTEng17-010
SUBJECT:	Highway 417, Rehabilitation/Replacement of Downtown Bridges, Metcalfe Street to Main Street - Preliminary Design and Environmental Assessment Ministry of Transportation GWP 4170-13-00		
	Terrestrial Environment Site Review, Existing Conditions - May 25, 2017		

Introduction and Study Area

On May 25, 2017 a site reconnaissance of the study area was undertaken, which included the Highway 417 right-of-way corridor bounded by Catherine Street to the north and Isabella Street and Hawthorne Avenue to the south and extending from O'Connor Street to Concord Street. Included in the study area for detailed field review were four potential lay-down or construction staging areas, two of which were west of Metcalfe Street and another east of Main Street, outside the formal study area. The fourth potential staging area is Ballantyne Park in the southeast quadrant. The below figure identifies the study area and adjacent potential lay-down areas.



Discussion

A highly urbanized environment forms the bulk of the study area and staging areas. The botanical species found on the typically manicured Kentucky bluegrass slopes beyond the elevated highway surfaces are for the most part plantings or introduced landscape species that have escaped to colonize neglected sections of the right-of-way. The most prominent of these invasive species are Tartarian honeysuckle (*Lonicera tatarica*), Manitoba maple (*Acer negundo*), staghorn sumac (*Rhus typhina*), silver maple (*A. saccharinum*) and red/green ash (*Fraxinus pennsyvanica* - dying). Amongst other observed landscape plantings present are red pine (*Pinus resinosa*), blue spruce (*Picea pungens*) and white spruce (*P. glauca*). The herbaceous species noted are typically associated with disturbed environments and include dandelion (*Taraxacum officinalis*), common plantain (*Plantago major*) and common burdock (*Arctium minor*).

No butternut trees were observed and few native birds were seen utilizing the sites. One wayward Black-capped Chickadee was observed in Ballantyne Park (coming in from the adjacent residential area) and an American Goldfinch perched momentarily in a Manitoba maple at Staging Site 1. No doubt the occasional Starling, American Robin or Red-winged Blackbird nests in the tangle along the highway here as they do commonly everywhere, but none were evident this day. Nesting birds are not an issue at any of the sites; however, if trees need to be cut down during nesting season (May 1 through July 30) at whatever sites are to be impacted, it will be necessary to do a 'just before' survey for nesting migratory birds. The conclusion is that there is neither faunal significance – nor potential for terrestrial SAR - for any of the highly disturbed sites.

The undersides of all bridges at Main Street, Metcalfe Street, Elgin Street and the Rideau Canal were inspected on June 17, 2017 for the possible presence of bird nests. The under-surfaces are smooth concrete, which appears to have made it impossible to attach nests. No nests were observed. The pier caps of the Rideau Canal bridges have small horizontal surfaces available for nests; however, no nests were observed on either side of the canal. A rock dove and starling were observed perched on the west pier cap during the inspection.

Alternative Staging Areas

Site 1

An area totally transformed from a natural condition, the site is on fill forming the highway embankment slope on the north side between O'Connor Street and Metcalfe Street. Vegetation is an open, grass slope with scattered planted red oak (*Quercus rubra*), red pine, white and blue spruce in small clusters throughout, none of notable size. Manitoba maple and sumac occupied neglected areas. Aside from a mature flowering crab (*Malus* sp.), which appears to be a survivor of the former railway corridor that preceded the highway and perhaps an even earlier semi-rural period, there are no natural values evident and therefore a very low potential to sustain native features, let alone significant natural environment values.

Site 2

As with Site 1, this area has been totally transformed from a natural condition on the south embankment slope across from Site 1. Vegetation is dominated by dense cover of small dead/dying green ash (killed by Emerald Ash-borer) over a dense tangle of non-native, invasive shrubs including honeysuckle with scattered Manitoba maple and Russian-olive. No native ground vegetation was evident but invasive Garlic-mustard (*Alliaria petiolata*), riverbank grape (*Vitus riparia*) and Virginia creeper (*Parthenocissus quinquefolia*) dominate edges of shrubbery. There are no natural values evident, nor any potential to sustain native features, let alone significant natural environment values.

Site 3 (Ballantyne Park)

This park site consists of manicured grass back to the highway shoulder. Several large, healthy (ca. 0.8 m dbh) sugar maple trees (45.412351N 75.681413W) at the west corner of the Park may be native. Five sugar maples of moderate size aligned along Hawthorne Avenue are all in poor condition (diseased). A moderate sized red oak (45.41272N 75.68080W) in the easterly Park area by Hawthorne Avenue is probably planted. A cluster of non-native but non-invasive, mature and aesthetically valuable Japanese Lilac (*Syringa [reticulata*?]) trees (45.41259N 75.68132W) are located in the central area of the park. A variety of scrubby trees have been planted along the back of the Park on the highway embankment slope (red pine, white spruce, Norway spruce, Norway maple) and have mixed with dense Manitoba maple growth. This is one of the few locations that could potentially have some (urban) wildlife value.

There is no native ground vegetation present, although there appear to be some significant values evident (specimen trees). This is a culturally significant site commemorating a pioneer Ottawa naturalist, intellectual and civic leader, James Ballantyne. There is a memorial structure in the centre of the Park identifying his former

residence site. Retention/ protection of the single mature Sugar Maple would be preferred and possibly also the red oak identified at the east of the Park. The lilacs in the central area portion should be retained (aesthetics). All other vegetation could be removed and beneficially replaced following construction with native species including sugar maple, hackberry and basswood.

Site 4

As with the other sites this area is totally transformed from a natural condition. Vegetation is dominated by scrubby Manitoba maple over dense tangle of honeysuckle. Other invasive herbaceous species are evident at ground level, particularly Garlic-mustard, Himalayan balsam (*Impatiens glandulifera*) and Buckthorn (*Rhamnus cathartica*). Again, there are no natural values evident, and no potential to sustain native features or significant natural environment values.

Note: Since the date of the site review a number of additional staging sites have been brought forward for consideration, two of which are identified for further investigation. Further field surveys will be undertaken forthwith and a revised report issued for review.

Per:



Rudi Warmé, Biologist

Attachment: Site photographs

Photographic Diary – May 25, 2017

Alternative Staging Site 1



Planted spruce trees and invasive staghorn sumac and Manitoba maple occur on the grassed slope. A large, old flowering crab appears to be a remnant of earlier railway embankment years



Site 2



Dying red/green ash along Isabella Street. A large Russian olive stands above the honeysuckle shrubs and grape vines that have spread close to the edge of the road



Site 3 - Ballantyne Park



Viewed from Hawthorne Street, several large sugar maples tower above the Park. Further along Hawthorne the trees are diseased





A dense growth of trees and shrubs grows along the north boundary against the noise barriers

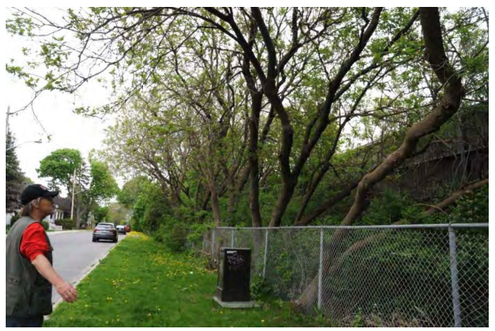




A historical is in the Park. A construction company office immediately to the east is housed in an old fashioned gas station style building



Site 4



This area is a grassed boulevard with a dense growth of Manitoba maples against the sound barrier



Rideau Canal Bridges



The underside of the bridges offer no nesting opportunities, with the exception of the pier caps, where a rock dove was perched



Elgin Street Bridges



Highway 417 bridge over Elgin Street. The underside of the deck offers no nesting opportunities



Metcalfe Street Bridge



The underside of the Highway 417 bridge over Metcalfe Street is similar to the undersurface of the Elgin Street bridge and therefore offers no bird nesting opportunities



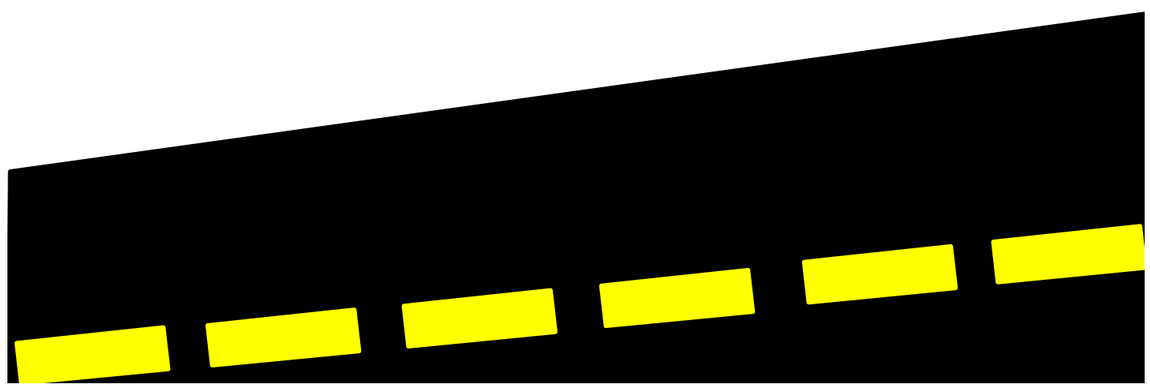
Main Street Bridges



The underside of the Highway 417 bridge over Main Street is also similar to the undersurfaces of the Metcalfe and Elgin Street bridges and therefore offers no bird nesting opportunities



Appendix H1
Stage I Archaeological Assessment Report



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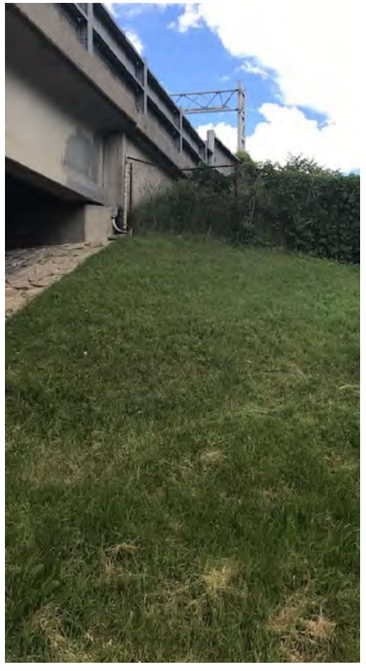



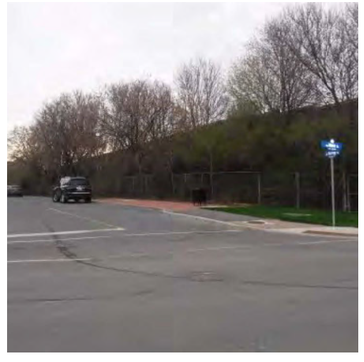

Stage 1 Archaeological Assessment
Preliminary Design & Environmental Assessment
Rehabilitation / Replacement, Highway 417 Bridges
from Metcalfe Street easterly to Main Street

Agreement #: 4016-E-0007

ORIGINAL REPORT

2401 5th Line East, Campbellford, ON K0L 1L0
Telephone: 705.201.1066 Facsimile: 866.231.6071 Email: info@centralarchaeology.ca

The Central ARCHAEOLOGY Group Inc.

Stage 1 Archaeological Assessment
Preliminary Design & Environmental Assessment
Rehabilitation / Replacement, Highway 417 Bridges
from Metcalfe Street easterly to Main Street

Agreement #: 4016-E-0007

ORIGINAL REPORT

July 18, 2017

Submitted to:

Darcie Dillon
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Ph: 613.228.4813
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CAGI Project No. CAGI-2017-LM5

Report in PDF format distribution: BTE
Ministry of Transportation
Ministry of Tourism, Culture and Sport

The Central ARCHAEOLOGY Group Inc.

Bringing the past to the present for the future

PROJECT PERSONNEL

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Client Contact

Darcie Dillon, BTE

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Derek Paauw

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Laura McRae

Derek Paauw

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Laura McRae

Artifact Analysis

Derek Paauw

Report Preparation

Laura McRae

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Administration

Deb Coit

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ACKNOWLEDGEMENTS

The Central Archaeology Group Inc. would like to extend their gratitude to the following individuals and parties.

- Darcie Dillon and Tina Stone, BTE.
- Ministry of Transportation.
- Rob von Bitter, Ministry of Tourism, Culture and Sport.
- The Lanark County Land Registry Office.
- The staff at the Trent University Maps and Geospatial Resources section of the Thomas, J. Bata Library, Peterborough.

ACRONYMS

AP	Archaeological Potential
a.s.l.	above sea level
BTE	BT Engineering
cm	centimeters
CAGI	Central Archaeology Group Inc.
CC	Carleton County
CoO	City of Ottawa
CR	County Road
GToN	Geographic Township of Nepean
Hwy	Highway
km	kilometre (s)
m	metre (s)
MTCS	Ministry of Tourism, Culture and Sport
MTO	Ministry of Transportation
NAP	No Archaeological Potential

EXECUTIVE SUMMARY

The Central Archaeology Group Inc. (CAGI) was contracted by BT Engineering (BTE) to conduct a Stage 1 archaeological assessment for a rehabilitation / replacement project for the Ministry of Transportation (MTO) on Highway 417 between Metcalfe Street and Main Street in the City of Ottawa (CoO). The Ministry of Transportation has requested this study in anticipation of the replacement of seven (7) structures at four (4) sites within this corridor. The purpose of this study therefore, is to provide a baseline level of data on known and potential cultural heritage resources within the subject property and to conduct a property survey on the expansion areas.

As an initial requirement of land use planning and development, the Ontario Ministry of Tourism, Culture and Sport (MTCS) has stated that three objectives must be met by way of a Stage 1 archaeological study: 1) provide information on the subject property's geography, history, previous archaeological fieldwork and current land condition; 2) evaluate the archaeological potential for the property and support recommendations for a Stage 2 survey; and, 3) recommend appropriate strategies for future assessments within the property. Therefore, the main purpose of the Stage 1 assessment is to investigate the cultural land use, archaeological history and the present conditions of the property. The majority of this process is background research conducted in the company office and other libraries and involves the examination of records such as historic settlement maps, land titles and documents, historical land use and ownership records, primary and secondary sources and the Ministry of Tourism, Culture and Sport's archaeological sites database.

Permission to access the area and to carry out the activities necessary for the completion of the Stage 1 background study was granted by BTE. Based on the results of the archaeological assessment, the following recommendations are provided for consideration to the MTCS, BTE and the MTO, and are subject to approval by the MTCS:

1) The entire MTO Queensway (Highway 417) Environmental Assessment Archaeological Project Area within the highway right-of-way, including proposed staging sites E-1, E-1e, E-2, E-3, E-4, M1, M4 and M5 have been subject to extensive and deep land alterations that have severly damaged the integrity of any potential archaeological resources, and therefore does not require further archaeological assessment (as illustrated by the areas marked in yellow on Map 9).

2) Should the proposed staging areas M2, M3 and M6, as outlined on plan 3 , be subjected to ground disturbing activities during this project, additional archaeological work (Stage 2 Property Survey) will be required (as illustrated by the areas marked in red on Map 9). This assessment should be undertaken by an archaeologist licensed in the Province of Ontario. Based on the existing landscape conditions, the Stage 2 Assessment of these areas will require the excavation of mechanical trenches (1 m x 4 m) using a backhoe or equivalent heavy machinery at targeted areas. Any utility locates must be completed before Stage 2 mechanical testing begins.

3) Notwithstanding the results and recommendations presented in this study, The Central Archaeology Group Inc. notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. Therefore, in the event that archaeological remains are found during subsequent construction and development activities, the consultant archaeologist, approval authority, and the Cultural Programs Unit of the Ministry of Tourism, Culture and Sport should be immediately notified.

The MTCS is requested to review, and provide a letter indicating their satisfaction with, the results and recommendations presented herein, with regard to the 2011 Standards and Guidelines for Consultant Archaeologists and the terms and conditions for archaeological licenses, and to enter this report into the Ontario Public Register of Archaeological Reports.

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1.0 PROJECT CONTEXT

1.1 Objectives

The objectives of a Stage 1 background study, as outlined by the *Standards and Guidelines for Consultant Archaeologists* (2011:13), are as follows:

- provide information on the subject property's geography, history, previous archaeological fieldwork and current land condition;
- evaluate the archaeological potential for the property and support recommendations for a Stage 2 survey; and,
- recommend appropriate strategies for future assessments within the property.

1.2 Development Context.

The Central Archaeology Group Inc. (CAGI) was retained by BTE (the proponent) to conduct a Stage 1 archaeological assessment for a rehabilitation / replacement project for the Ministry of Transportation (MTO) on Highway 417 between Metcalfe Street and Main Street in the City of Ottawa (CoO). The Ministry of Transportation has requested this study in anticipation of the replacement of seven (7) structures at four (4) sites within this corridor. This archaeological assessment was triggered by MTOs Class Environmental Assessment.

The study area includes part of Lots F and G, Broken Front C and part of Lots F and G, Broken Front D, Geographic Township of Nepean (GToN), Carleton County (CC) (Plan 1; Map 1; Image 1). Permission for access to conduct the archaeological assessment was granted by BTE. Private property was not accessed for this project. Photographs were taken from along each road right-of-way with public property access.

The archaeological assessment was undertaken in accordance with the requirements of the Ontario Heritage Act (R.S.O. 1990), the Standards and Guidelines for Consultant Archaeologists (2011) and the Environmental Assessment Act (R.S.O. 1990). All archaeological consulting activities were performed under the Professional Archaeological License of Laura McRae (P248). The Ontario Ministry of Tourism, Culture and Sport has designated this assessment as PIF P248-0291-2017. This project is further identified as CAGI-2017-LM5 under CAGI records.

1.3 Historical Context.

1.3.1 Historic Documentation

There are several histories of Carleton County, from its use by the pre-contact First Nations peoples through to the English period, Loyalist migration and Euro-Canadian settlement. Some of the more useful documents include: *Illustrated Atlas of the County of Carleton* (Belden 1879), *Chronology of late Quaternary events in the Ottawa Region: Quaternary geology of the Ottawa Region, Ontario and Quebec* (Fulton and Richard 1987), *The Algonkin Nation* (Hessel 1993), *An Inventory of the Prehistoric Archaeology Sites of the Ottawa - Carleton* (Jameison 1988), *A Background Study for Nomination of the Ottawa River Under the Canadian Heritage River Systems* (Morrison 2005) and

The Soils of the Regional Municipality of Ottawa - Carleton (excluding the Ottawa Urban Fringe) Volume 2 (Schut and Wilson 1987).

There are also a significant number of consultant reports (archaeological and built heritage) available for consultation from the County, municipalities, the Ministry of Tourism, Culture and Sport, township offices and the local historical societies.

In addition to historical literature and consultant reports, historical maps and plans, orthographic images and photographs from the National Air Photo Library (NAPL) may also be referenced.

The study area is situated within the GToN, CC. The history of the area will be discussed below.

1.3.2 Pre-Contact Period

The Palaeoamerican Period. The project area lies within traditional Algonquin territory (see Map 2). In 1983, the Algonquins of Pikwàkanagàn filed a claim to the Government of Canada, and in 1985, to the Government of Ontario, for rights and title to the Ottawa and Mattawa River watersheds. The basis of the claim is that the Algonquins never ceded rights to their territory through sale or treaty, nor had it been lost through war. The Algonquins have made such claims since 1772. However, their petitions, until the last two decades of the twentieth century, had went unanswered. In 1991, the Government of Ontario, and in 1992, the Government of Canada, agreed to enter into negotiations with the Algonquin of Ontario. The negotiation process continues to this day. The following section outlines a general history of First Nations people in the region of the project area before and after European contact. Although with the arrival of United Empire Loyalists at the end of the eighteen century and European migrants at the beginning of the nineteenth century, the physical environment has been drastically altered through large scale agriculture, by examining First Nations cultural practices, both before and after European contact, archaeological potential for the project area will be inferred.

The traditional territory of the Algonquin is quite vast, covering a large portion of eastern Ontario. It extends from North Bay east to the Ottawa River, south through Algonquin Park to just south of Bancroft and continues east to just north of Kingston. From the Kingston area it stretches north to just east of Hawkesbury and then continues back west along the Ottawa River. Today there are a number of Algonquin communities throughout the Ottawa Valley: Algonquins of Pikwàkanagàn; Shabot Obaadjiwan (Sharbot Lake); Greater Golden Lake; Antoine; Kljicho Manito (Bancroft); Ottawa; Mattawa / North Bay; Snimikobi (Ardoch); Bonnechere; and Whitney. The closest Algonquin community to the project area is Ottawa.

Although eastern Ontario has a unique deglaciation history, which would have prohibited early occupation, some of the work done further to the west, in the Great Lakes region can be extrapolated. In the 1970s archaeologists in southern Ontario began looking at ancient glacial lake beaches for Palaeoamerican and Archaic archaeological sites with positive results (Jackson et al. 2000, Storck 2004). Traditionally, and which is still common practice to this date, archaeological investigations in eastern Ontario were being conducted at modern water levels and archaeologists were only testing easily accessible areas which yielded "likely" locations of past human occupation (Hurley 1971a; 1971b), overlooking the drastic environmental changes that occurred over the past 10,000 years. Some archaeologists are just beginning to realize that sites can be found further inland on the former beaches of the Champlain Sea and the Fossmill outlet (Kennett and Branson 1999:97). Since very

little investigation have been undertaken in these areas (Watson 1999:38), thus far, only a small number of Palaeoamerican sites and few Archaic and Woodland period sites have been found.

The following is but a summary of the First Nations cultural history of the project area. Given the number of sites that have been discovered by both archaeologists ad amateurs alike, in combination with extensive oral accounts by First Nations, and hundreds, if not thousands of ethnohistoric reports, recounted by early European visitors, some more obscure than others, a complete interpretation of the region's cultural history would be a monumental undertaking, consisting of a lifetime of research, which unfortunately has yet to be completed. Instead, this section offers a glimpse of the First Nations history that will assist in the planning process. It is the task of the archaeologist to expound on it if and when archaeological resources are encountered.

First Nations history in the project area is directly linked to the retreat of the vast Laurentide ice sheet that began to melt approximately 15,000 years ago. At its extent, the approximately kilometre-thick ice sheet extended as far south as northern Pennsylvania. As the ice melted, salt water from the Atlantic Ocean flooded the region, creating the Champlain Sea. With isostatic rebound and changing environmental factors, this vast inland sea soon drained and by 10,000 years ago, the landscape first became inhabited by humans.

Although there is considerable debate as to when the first humans entered the Americas via the Bering Strait (Adovasio 2002), archaeological evidence supports the arrival of the Plano people in the region sometime around 8,000 BCE. The landscape at this time was vastly different than what it is today. At the time, based on palaeoenvironmental studies, there would have been subarctic conditions, somewhat resembling the interior landscape of northern Labrador today. There would have been a mixture of ice and soil supporting lichens, brush and small trees (Ritchie 2003). The primary source of food for these early peoples, who were organized into small bands, would likely have been caribou. As such, subsistence patterns would have been based on hunting caribou as the herds moved across the open landscape.

No archaeological evidence of these early people has yet to be found in the region surrounding the project area. This is largely a result of a lack of archaeological research in the study area and the inability of archaeologists to identify and test the former shorelines of the Champlain Sea since it moved rapidly across the landscape (Pilon 2005). Thus, the cultural sequence that is assumed is based largely on palaeoenvironmental markers and archaeological evidence from further to the south and west.

As the climate warmed, the barren landscape gave way to boreal forest and by five thousand years ago, the environment was similar to how it appeared when the first Europeans encountered great stands of trees. The first evidence of humans in the region dates to approximately five to six thousand years ago with the Shield Archaic. Based on distinct technological and stylistic differences, the Shield Archaic lasted to approximately 500 BCE.

Two important archaeological sites associated with this period have been found near Pembroke on islands in the Ottawa River (Pilon 2005:14). The sites were located in areas suitable for fishing and access to regional transportation and communication routes. Evidence of direct or indirect trade was also assumed with the discovery of artifacts made from native copper from the western end of Lake Superior.

The people associated with the Shield Archaic phase likely originated from the south and west, possibly descending from the Plano people of the Late Palaeoamerican period, and likely arrived in the region in pursuit of caribou herds. As the climate warmed and the caribou herds disappeared, there was a marked shift towards the procurement of small animals and fish. In addition to subsistence patterns, it is known that the Shield Archaic people lived in wood framed tents, not too dissimilar from the wigwam and were the first Aboriginal people to use metal, manufacturing tools from native copper.

With the introduction of pottery in the region around 500 BCE, archaeologists refer to the groups using this new technology as the Laurel people. However, more likely than not, they are descended from the Shield Archaic, although there is considerable debate about their origin, with evidence of their presence in southern Ontario, Quebec, and the northern United States. The Laurel tradition is contemporaneous with the Middle Woodland period of the Northeast and thus the introduction of pottery is somewhat later than it is to the south.

Laurel sites tend to be found along major lakes and rivers and there appears to be a focus toward moose and beaver hunting. However, fishing was still an important activity. There is also evidence that extensive trade networks existed, suggesting that the Laurel people had contact with other Aboriginal groups living further away. An important archaeological site dating to this period was also found near Pembroke at Indian Point, where one of the earliest styles of pots in the Northeast, referred to as Vinette I, was found (Pilon 2005:16).

Prior to the arrival of the Europeans, when the names of particular groups begin to be recorded in ethnohistoric accounts, archaeological sites are referred to by the distinctive stylistic elements found on their pottery, such as Blackduck, Selkirk, and Ontario Iroquois (Pollock 2005:12). This often creates confusion outside the archaeological community, where there is a misconception that a particular pottery style represents a singular cultural entity. Instead, elements of these styles were likely used by more than one group, disseminated through trade and later imitated. In addition to the early vessel found at Indian Point, thousands of pottery sherds dating to various ceramic traditions have been found throughout dozens of sites in the region.

With the arrival of the Europeans, distinguishing specific cultural groups inhabiting the region becomes less arduous, since it is now possible to draw upon ethnohistoric accounts, which could include the journals of early explorers and visitors to the more in- depth accounts of missionaries, who were charged by the European authorities and the Church with converting that Aboriginal population, often to the detriment of the First Nations, and thus obligated to provide details to their progress. However, piecing together the post-contact First Nations history for the project area still remains challenging simply because little effort has been made to date to consolidate the known resources into a logical and comprehensive history.

The predominate First Nations group inhabiting the region at the time of contact, and therefore, likely the descendants of the Laurel groups in the area, are the Algonquins. There is considerable confusion between the term used to describe Algonquian-speaking groups in the Northeast, including the Maliseet and Mi'kmaq of Atlantic Canada, to name a few, and the group of First Nations people that inhabited the region around the Ottawa River. However, in this section, Algonquin, derived from the Maliseet word for "allies," is used to describe the latter. The Algonquin called themselves the Anishinabeg, meaning "people."

The Algonquins that Samuel de Champlain encountered on his journey up the Kichi Sibi (Ottawa River) or the River of the Algoumequin, as Champlain called it, were identified by the various locations or tributaries they inhabited. Unfortunately, since little headway was made into the interior by French explorers during early contact, in combination with the devastating effects of European diseases and endemic warfare with the Mohawk on the Algonquin population, virtually nothing is known about the people and bands whose territory did not border the Ottawa River.

The traditional territory of the Algonquin is somewhat difficult to define in the modern sense of boundaries and borders. However, at the time of European contact, the Montagnais (Innu), were the neighbours to the west, with Saint Maurice River, believed to demarcate the eastern extent of Algonquin territory. To south, were the St. Lawrence Iroquois, who archaeologically, disappeared shortly after the departure of the first French explorers in the early sixteenth century, and to the north and west by the Nipissing, Ottawa, and Cree. Although the extent of Algonquin territory is not known, their heartland has always included the Ottawa River, from its headwaters in north-central Quebec to its outlet near Montreal at the Lake of Two Mountains. Within the Algonquin territory, lived various bands.

Champlain makes reference to several bands following his visit to the Ottawa Valley in the early seventeenth century. Probably the largest of these bands was the Kichesipirini, who had their village on Morrison Island. The Matouweskarini, occupied the territory along the Madawaska River, to where it flowed into the Ottawa River, near Arnprior. The Kinouchebiriiniouek lived along the Bonnechere River. Two other groups that were known to Champlain lived further south. They are the Waweskarini, whose territory encompassed the Rouge, Petite Nation, and Lièvre Rivers, west of Montreal, and the Onontchataronon, who lived along the South Nation River, southeast of Ottawa.

A more obscure band, of which little mention is made in the ethnohistoric records, are the Otaguotouemins, who were said to inhabit the land between Deep River and Mattawa, and further inland. Unfortunately, little documentary evidence exists of the groups living north of Mattawa since no Europeans travelled this route until 1670.

Although we are left with the names of some Algonquin bands, there is actually little written about the inhabitants. Based on the ethnohistoric record, it would appear that Algonquin territory was based on watersheds (Morrison 2005:25). Therefore, given the various rivers in the region, presumably there were more bands. Although the northern bands were not as sedentary as the Iroquois or the Huron, who practiced agriculture, the Algonquin were limited to their territory to procure resources or trade for others. They practiced a seasonal transhumance, where families would occupy certain parts of the territory at particular times of the year, hunting or gathering specific resources. For example, in the winter, they would travel inland and live in extended family camps, to hunt large game, such as moose and deer. By the spring, families would come together at large camps near the mouths of rivers to fish.

Although the Algonquin had amicable relations with the Huron, trading with them for corn prior to the arrival of Europeans, the close relationship that developed between the Huron and the French, and subsequent trade, resulted in tensions with the Algonquin in the first half of the seventeenth century. In 1627, the Algonquin sought trade with the Dutch at Fort Orange (Trigger 1978:346). This economic relationship did not last long as the Mohawk, who did not have access to an abundance of furs and thus could not trade for European goods, sacked Fort Orange and went to war with the Dutch for four years.

By the mid-seventeenth century, European diseases and warfare with the Iroquois was taking a toll on the Algonquins. The Iroquois, who would obtain firearms from the Dutch and British, began harassing the Algonquins and French along the St. Lawrence and southern section of the Ottawa River. As a result, many Algonquins, in particular, the Matouweskarini, Onontchataronons, and Kichesipirini began spending the summer near the French settlements at Trois-Rivières and Ville Marie. By 1650, the Iroquois had destroyed the Huron and began harassing the Nipissings. Given the narrow waterway and larger canoes, the Iroquois rarely raided the region surrounding the project area as the resources were not as plentiful as they were further to the south and along the shore of the Great Lakes.

By the mid-1660s, with help from the French, the Algonquins, along with Nipissing, Huron, and Abenaki, lead a series of attacks on the Iroquois, south of Lake Ontario, resulting in the capture of all the Mohawk villages and an eventual peace treaty in 1667. Uneasy about French expansion into the interior, the Iroquois, comprising the western nations of the Seneca, Cayuga, and Onondaga, once again went to war in 1680. In spite of resumed hostilities, the fur trade flourished until a trading post was destroyed on Lake Temiskaming in 1689. In 1696, Algonquin, Nipissings, and Odawa warriors attacked south of Lake Ontario, destroying several Oneida and Onondaga villages. The Odawa, Ojibway, and Potawatomi also attacked Iroquois settlements along the north shore of Lake Ontario.

As a result, in 1701, hostilities ended with the Iroquois with the signing of a peace treaty in Montreal, known as the Great Peace.

War and disease greatly diminished the Algonquin population. During the Seven Years War, the Algonquin sided with the French, who were ultimately defeated in 1763. When New France was ceded to Britain, former French territory was divided into three provinces: Quebec, West Florida, and East Florida. Quebec included the St. Lawrence valley, parts of eastern Ontario, and the Lower Ottawa Valley. The territory north and west of the newly established province was considered First Nations territory with the Upper Ottawa Valley belonging to the Algonquin.

At the conclusion of the American Revolution, tens of thousands of United Empire Loyalist refugees from the former American Colonies made their way north in search of new land. As a result, the British entered into a series of treaties with the First Nations (Morrison 2005:31).

Table 1. Summary of the First Nations archaeological sequence in southern Ontario.

Date (BP)	Periods and Cultural Tradition
12,000 to 8,000	Palaeoamerican
12,000 to 10,000	Early Palaeoamerican
10,000 to 8,000	Late Palaeoamerican
8,000 to 3,000	Archaic
8,000 to 7,000	Early Archaic
7,000 to 5,500	Middle Archaic

Date (BP)	Periods and Cultural Tradition
5,500 to 3,000	Late Archaic
(5,500 to 4,200)	(Laurentian Archaic)
(4,200 to 3,000)	(Post-Laurentian Archaic)
3,000 to 450	Woodland
3,000 to 2,400	Early Woodland
2,400 to 1,000	Middle Woodland
1,000 to 450	Late Woodland
450 to Present	Historic

1.3.3 Post-Contact Period

Beginning in the early seventeenth century with the French, explorers such as Samuel de Champlain and Étienne Brûlé, encountered groups of people speaking an Algonquian language along the Ottawa River Valley. These were the Weskarini, Onotchataronon, Kichesipirini, Matouweskarini, and Otaguotouemin Algonquians (Trigger 1976: 279). The loosely aligned First Nations groups subsisted by hunting, fishing, and gathering, and undertook limited horticulture. Champlain first met the Algonquians in 1603 at the trading centre of Tadoussac near the mouth of the St. Lawrence River (Hessel 1993: 14). Searching for the Northwest Passage in 1613, Champlain entered Algonquin territory and explored the Ottawa Valley as far north as Morrison's and Allumette Islands. The main body of the Kichesipirini lived on Morrison's Island and controlled the portages at the base of Allumette Lake. From their strategic location, the Kichesipirini collected tolls from all French trade to and from the interior nations such as the Nipissing, Huron, Ottawa, and Ojibway (Hessel 1993; Trigger 1976). Since at least the late sixteenth century, the Algonquin groups were at war with the Mohawk Iroquois, the easternmost group of the Five Nations Iroquois over control of the upper St. Lawrence trade routes.

By the mid-seventeenth century, the French traders and missionaries began to resent the Algonquin self-proclaimed role as middlemen along the Ottawa River. This soon resulted in adversarial relations between the Algonquin leaders and the French colonial officials. The endemic warfare of the age, and severe smallpox epidemics in 1623-1624, and again between 1634 and 1640, brought about drastic population decline among the Algonquin peoples (Hessel 1993). The French unwillingness to provide military support to the Algonquin against their mutual enemy, the Mohawk, led to the defeat and dispersal of the known Algonquin bands by the Five Nations Iroquois between 1640 and 1650 (Trigger 1976: 610, 637-638). Survivors of the various bands coalesced as a single First Nation people to the north of the Ottawa Valley, and at the French posts of Montreal, Sillery, and Trois- Rivières.

Following the dispersal of the various Algonquin peoples as political entities in the mid seventeenth century, the Ottawa Valley remained the major trade and exploration route to the interior of New France. The Algonquian-speaking Ottawa from the Georgian Bay area became the pre-eminent First Nations traders and joined flotillas of French *courier de bois* who traveled through the French River-

Lake Nipissing-Mattawa River route from Georgian Bay before descending the Ottawa River to deliver furs and receive goods at Montreal (Kennedy 1970:70).

The interior to the west of the Ottawa River and south of Lake Nipissing remained virtually unexplored by Euro-Canadians. Several Algonquin families were known to have settled at Golden Lake and Round Lake on the Bonnechere River in the early 1800s (McKay 1981:9-11). Other Algonquin groups may have settled on nearby lakes, but no written records are available.

Government land surveys of the east interior of Upper Canada began as a military endeavor to find water or an overland route through the Huron Tract to bypass the vulnerable lower Great Lakes. Lieutenant Henry Briscoe of the Royal Engineers crossed by the Madawaska Highlands from Georgian Bay to the Ottawa River in 1826, and has the distinction of being the first Euro-Canadian recorded to pass within the confines of the future Algonquin Park area (Briscoe 1826 in Wyatt 1971). Briscoe concluded that a suitable canal route was not present through the Canadian Shield, but others, notably Charles Shirreff, believed that the interior could be settled by farmers and serviced by a canal (Wyatt 1971:4). Alexander Shirreff, the son of Charles, searched for a possible canal route across the uplands in 1829 (Shirreff 1831 in Wyatt 1971). In his subsequent report, Alexander considered hardwood stands to reflect fertile soils, and thus promoted the Lake Opeongo area as suitable for future farming settlements. In 1836, the government passed legislation to survey the Ottawa River and the waterways of bordering lands (Wyatt 1971:22). David Thompson, the surveyor of the Thompson River in British Columbia, examined the area from Penetanguishene on Georgian Bay through the Muskoka-Madawaska region. In 1837, Thompson found evidence of previous campers, likely Alexander Shirreff, on a bay at the northeastern corner of Canoe Lake, in what would become Algonquin Park (Wyatt 1971:4).

Fur trade was proliferate in the area, and since the fur trade in New France was based in Montreal, Ottawa River navigation routes through the Mattawa area were of strategic importance in the movement of trade goods inland and furs down to Montreal. Therefore, in 1830, a permanent Hudson's Bay post was set up on the Mattawa Explorers' Point and after a series of portages, fur traders would cross the watershed into Lake Nipissing. In 1837 this post, called the Mattawa House, became an important Hudson's Bay Company post and centre of the fur trading and lumber business (Morrison 2005:215).

At the beginning of the nineteenth century, there was a shift from the fur trade to the lumber industry due to the Napoleonic blockades and Europe's demand for quality pine. Settlement followed and a large number of farms and lumber camps began to appear in the area. A mutually beneficial relationship soon developed between the lumber industry and the farmer as lumber camps depended on farmers to sell foodstuffs to shanties and lumber camps, and farmers depended on the lumber industry for seasonal work in the winter (Mercer 1998:5). Unfortunately, the lumber industry was also wholly responsible for the almost complete destruction of the primary forests in the region, and many parts of Northern Ontario. Companies such as Booth, Gillies, and Eddy were responsible for clear cutting the great red and white pine forests of Ontario and Quebec (Barnes 2000:6). When these larger trees were depleted, smaller trees were used for sawn lumber. Sawmills were set up on the lakes and rivers to process the timber close to where it was felled. Furthermore, an increasingly literate society created a new demand for paper for newsprint (Barnes 2000:7). Thus, a market for poorer grade lumber devastated the forests even further. Nevertheless, lumbering was a transitory trade, and once the desirable timber was gone, the lumbermen moved on as well.

Carleton County is bounded to the west by Renfrew County, to the north by the Ottawa River, to the southwest by Lanark County, to the southeast by Grenville and Dundas Counties, and to the northeast by Russell County.

Although the first European to traverse Carleton County was Champlain in 1615, travel to Upper Ottawa occurred on a more regular basis during the fur trading era (Belden 1879: iii). The economy of the fur trade remained attractive to traders and explorers in the Ottawa Valley region until the English defeated the French during the Seven Years' War. At this point, commercial and economic attentions switch to lumbering and forestry (Belden 1879: iii).

Like the majority of Upper Canada, this area was settled by disbanded soldiers via military colonization following the American Revolution (Belden 1879: iv). The County was created in 1800 from portions of Dundas and Grenville Counties and was named after Guy Carleton, the 1st Baron Dorchester. The same situation followed the War of 1812 and resulted in the settling of what would become known as the Village of Richmond in Carleton County by former officers of the Royal Army and Navy in the year 1818 (Belden 1879: iv). At this time, there were already scattered settlements through the area that had been established by single families (Belden 1879: iv).

After 1820, settlement of the area began at an increasingly rapid rate. With the onset of the construction of the Rideau Canal that began in 1826, settlement spiked and the entire County of Carleton became populated. The majority of settlers in this part of Ontario tended to be Irish although there were also former military men, and their families, who had recently been disbanded from units of the British Military. With the influx of settlers during the early 1800s, the Geographic Township of March was surveyed and settlement was encouraged.

The Township's name is derived from the Fourth Duke of Richmond, Charles Lennox's title, the Earl of March. Now part of the City of Ottawa, it is bounded by Torbolton Township to the northwest, the Ottawa River to the north, Nepean to the east, Goulbourn Township to the south and Huntley Township to the southwest. The Township was first surveyed in 1798 and land grants initially went to United Empire Loyalists and their children. The first settler within the township was Ira Honeywell of Prescott (Mika and Mika 1977:21). A number of Euro-Canadian settlers soon followed.

The map provided on Map 2 is of the best quality possible that could be found to include in this report.

1.3.4 Study Area Specific History

Highway 417. Highway 417 extends from the Quebec border to Arnprior; approximately 186 kilometres in length. The section of Highway 417 through Ottawa was originally constructed between 1957 and 1966 but was reconstructed during the 1980s to its present form. The core section of the highway in downtown Ottawa is eight lanes (four for eastbound and four for westbound) along with single or double lane exit and entranceway ramps. It was constructed on an elevated berm and ranges between 120 metres and 180 metres in width.

Rideau Canal. Construction on the Rideau earthworks began in 1816, when Lieutenant Joshua Jebb of the Royal Engineers was placed in charge of surveying a route from Lake Ontario to the Ottawa River. This was to extend through the Cataraqui River and into Rideau Lake, continuing northwards towards the Ottawa. The task of construction was handed to Lieutenant Colonel John By of the Royal

Engineers in 1826. Thousands of labourers and tradesmen were hired under the supervision of the Royal Engineers. Conditions were difficult as the area along the proposed route was generally unpopulated during the early to middle nineteenth century. A number of deaths resulted from disease (i.e., malaria, dysentery, small pox, tuberculosis), accidents (i.e., blasting, rock falls, drownings) and alcoholic overindulgence that occurred during construction. Many of these workers were buried alongside the canal route, some in existing cemeteries but some were interred alongside the watercourse, now in unmarked graves noted only by piles of field stones.

For Colonel By, the defence of the canal was of primary importance and he wished to construct several blockhouses along its length to fortify the water course. Four were constructed (Kingston Mills, Newboro, the Narrows on Rideau Lake and Merrickville) before Colonel By was informed of the decision to postpone construction of the blockhouses.

Construction on the Rideau Canal was completed by the spring of 1832 and many of the individuals who helped build the canal were employed as lockmasters. The canal quickly became a commercial success and although it was never used as a military supply route, it did act as a military deterrent.

Study Area. The Highway 417 bridges over Metcalfe Street, Elgin Street, Queen Elizabeth Drive/ Colonel By Drive, and the west half of Main Street are located on parts of Lot F, Broken Front C in the Geographic Township of Nepean (now the City of Ottawa). The Highway 417 bridges over Queen Elizabeth Drive/Colonel By Drive are also located on parts of Lot G, Broken Front C in the Geographic Township of Nepean (now the City of Ottawa). The Highway 417 bridge over Main Street includes portions of Lots F and G, Broken Front D in the Geographic Township of Nepean (now the City of Ottawa). The following is a history of those lots from the issuance of the original patent from the Crown to the modern era when the land was expropriated by the Ontario Department of Highways (now the Ministry of Transportation) for the construction of Highway 417, which was completed in the project area in 1965.

The project area forms part of the Merivale District in the northeastern part of the Township of Nepean. This section of the township was largely held by land speculators who sought their fortunes in the expansion of the settlement at Bytown, later the City of Ottawa. Thus, early settlers simply could not afford to purchase the land for agricultural pursuits. As a result, much of the northeastern portion of the Township of Nepean remained wilderness until the 1840s, when it was finally opened up for agricultural development.

Lot F, Broken Front C. The patent for Lot F was first granted by the Crown to William Fraser on May 20, 1801. William Fraser was an absentee land speculator. William Fraser was born in Stratherrick, Inverness, Scotland in 1749. William immigrated to the Province of New York with his family in 1766 and settled in the Mohawk Valley. William lived with his father at their farm near Ballstown, while his brother, Thomas, maintained the family farm leased from Sir William Johnson. William married Lillias on September 16, 1774. At the outbreak of the American Revolutionary War, William and Thomas joined the Loyalist cause. In the spring of 1777, with a group of other Loyalists, they attempted to march to Canada, but were captured by rebel forces and imprisoned in Albany. They escaped and made their way to Montreal, where William was commissioned as a captain and his brother, Thomas, a lieutenant, in General Burgoyne's army. After the defeat of General Burgoyne during the Saratoga Campaign at the end of October 1777, the Frasers returned to Montreal, where they formed a company of rangers, They were garrisoned on the Yamaska River for the remainder of the war.

After the American Revolutionary War in 1783, William and his family migrated to Grenville County and settled on Lot 17, Concession 1 in the Township of Edwardsburg, where he served on the Land Boards, distributing land to Loyalist refugees. William also served as magistrate and was appointed the Sheriff of the Johnstown District. In 1804, William moved to the Township of Matilda and became a colonel in the Grenville Regiment in 1820. In 1792, William petitioned the colonial government for all of the land in the Township of Gloucester, which was approved in 1793, but shortly thereafter reversed with the land never being transferred into his name. Between 1797 and 1802, William submitted several more claims for land and was granted a substantial number of lots, including Lot F, Broken Front C. William Fraser died on February 20, 1826.

On November 14, 1831, Lot F, Broken Front C was partitioned by an Isabella Fraser to Alexander McDonell. The name “Isabella” may have been a transcription error made at the Land Registry and was meant to actually read “Lillias,” William’s wife, or perhaps a daughter. Upon William’s death, Lillias petitioned the British Army for a widow’s pension for her husband’s service. The name “Isabella” was never used in the correspondence (The National Archives of the United Kingdom 1827). William Stewart acquired the property from Alexander McDonnell on August 8, 1833. The land had yet to be developed.

William Stewart was born about 1803 in Carbost, Isle of Skye, Scotland to Ranald Stewart and Isabella McLeod. William arrived in Quebec with his family, including nine siblings, in 1816. The Stewart family settled in the Township of Lancaster in Glengarry County. Steward became employed with a merchant in Montreal, eventually settling in Bytown in 1827, where he opened a dry goods and supplies store with his partner, John G. McIntosh. In 1828, William was elected as a councillor for Bytown. By the 1830s, William expanded into the timber trade in the Upper Ottawa Valley and he became a founding member of the Ottawa Lumber Association, lobbying in London for improvements to navigation on the Ottawa River. On April 16, 1836, William married Catherine Stewart of Cuidrach, Isle of Skye. Together they had nine children.

William served in the Legislative Assembly of the Province of Canada from 1843 to 1847. After he left the Legislature, William suffered financially and was forced to sell his timber rights to John Egan. In 1850, he also sold his mercantile business. William withdrew from public life and devoted the remainder of his life to his farm, which encompassed all of Lot F, Broken Front C (Keshen and St-Onge 2001:80). The location of William Stewart’s farm on the property could not be found during the course of research for this project. In 1852, the residents of Bytown petitioned the Legislature for the Province of Canada for city status, which would have included William’s land on Lot F, Broken Front C and part of Lot F, Broken Front D. William requested that his land, which at that time still remained largely forested, be excluded. In 1855, when Ottawa was granted city status, the boundary was along the northern border of William’s land. William died in Toronto on March 21, 1856 (Hirsch 1985).

Upon William’s death, his son, McLeod, and wife, Catherine, managed his affairs. In 1873, William’s son, Archibald submitted a plan for subdivision (Registered Plan 48) for the development of Lot F, Broken Front D, between the Rideau Canal and the Rideau River. This would become known as Archville and later, Ottawa East Village. A plan for subdivision of Lot F, Broken Front C, west of the Rideau Canal, which also included a portion of Lot F, Broken Front C, was submitted on March 20, 1877. This would become Stewarton as it appears in the 1879 Illustrated Historical Atlas of the County of Carleton, Ont. (H. Belden & Co. 1879; see Map 3).

The project area, which encompasses the current right-of-way for Highway 417, was acquired by the Canada Atlantic Railway Co. for the construction of a railroad to service John Rodolphus Booth’s lumber holdings in the Ottawa Valley and the communities along the line. Construction of the Canada Atlantic Railway Co. railroad began in 1880 and was completed in 1882. In 1890, Booth constructed a bridge across the St. Lawrence River to connect his railroad with the Central Vermont Railway and gain access to markets in New England (Lee 2006:103). In 1904, the Grand Trunk Railway moved to purchase the Canada Atlantic Railway, but because of delays in Parliament, the sale was not finalized until 1914. In the interim, the Grand Trunk Railway leased the railroad from the Canada Atlantic Railway Co. Given its financial troubles, in 1923, the Grand Trunk Railway was nationalized and became part of the Canadian National Railway. Portions of the former Canada Atlantic Railway began to be abandoned in the 1930s. An aerial photograph taken of the project area in 1928 (Image 2) shows the railroad intact. However, by 1958 (Image 2), the railroad and its associated infrastructure was dismantled.

The Highway 417 bridges over the portions of the project area at Metcalfe Street and Elgin Street were built with the boundaries of the Canada Atlantic Railway Co. workshops and Canada Atlantic Railway Co. mainline. The Highway 417 bridge that crosses over Metcalfe Street was built overtop of the car building shops, which ran parallel with Catherine Street and the coal bins that ran parallel with Isabella Street. The Highway 417 bridge at Elgin Street was built overtop of railroad tracks. The facilities are identified on Sheet 75 Charles E. Goad September 1902 (revised 1912) insurance plans for the City of Ottawa. The Grand Trunk Railway was identified as the owners of the facilities and railroad tracks in the revised 1912 edition (Plan 5). The section of Highway 417 constructed over the Rideau Canada follows the footprint of the Canada Atlantic Railway Co. railroad bridge built over the canal. The approach to the railway bridge from the west, passed underneath a bridge that connected Elgin Street over the railway property and continued into a ravine before entering the bridge over the canal. This section of the project area is identified on Sheet 71 of the Charles E. Goad September 1902 (revised 1912) insurance plans for the City of Ottawa (Plan 6).

On the east side of the Rideau Canal, Highway 417 and the Highway 417 right-of-way were also constructed overtop of the original Canada Atlantic Railway Co. main line as can be seen on Sheet 159 of the Charles E. Goad September 1902 (revised 1912) insurance plans for the City of Ottawa (Plan 7). The Highway 417 bridge over what is today Colonel By Drive was constructed over a portion of the Rideau Canal that had since been partially filled in, likely during the construction of Highway 417. The east bank of the Rideau Canal was once closer to Echo Drive. Colonel By Drive did not exist at the time. Where the Highway 417 bridge crosses Main Street, which is the boundary between concessions Broken Front C and Broken Front D, the highway and bridge were constructed over the Canada Atlantic Railway Co. main line. The Grand Trunk Railway is identified as the operator of the railroad in the revised 1912 insurance plan.

The Canada Atlantic Railway Co. grounds and engineers shop, built in 1895, and the Bronsons & Weston Co. timber storage yard, established sometime after 1886, but before 1888, were located in the northeast corner of Lot F, Broken Front C, west of the Rideau Canal. The Canada Atlantic Railway Co. grounds and engineers shop was located immediately south of what is today the intersection of Cartier Street and Argyle Avenue, approximately 130 m northeast of the closest portion of the project area at the Highway 417 bridge over the Rideau Canal. The entrance to the Bronsons & Weston Co. storage yard was located immediately north of the Canada Atlantic Railway Co. grounds northeast of the intersection of what is today Cartier Street and Argyle Avenue. None of the buildings remain to this day. Many were demolished before 1912. The Rideau Canada Western Pathway, which runs along the

canal, was built on the former rail bed leading into the Canada Atlantic Railway Co. grounds and the Bronsons & Weston Co. yard further to the north. The Bronsons & Weston Co. had leased the land for 20 years in 1886 to pile lumber. The lumber mill was located at Chaudière Falls. The layout of the Canada Atlantic Railway Co. grounds and the Bronsons & Weston Co. storage yard is depicted on the right half of Sheet 105A of the January 1888 (revised January 1901) insurance plan for the City of Ottawa (Plan 4).

Initially, Highway 417 through Ottawa was envisioned in the 1930s and 1940s as an expressway that ran through the city on the former Canadian National Railway line (originally the Canada Atlantic Railway Co. line) as part of the Greber Plan to modernize the city's infrastructure. The Queensway, as it was called, was constructed in four phases. The project area, including the bridge over the Rideau Canal and the approaches to the bridge were part of the fourth and final phase of construction, having been completed in November 1965. In 1966, the Queensway was given the designation of Highway 17. On June 12, 1967, the Crown, transferred the former Canadian National Railway line property to the National Capital Commission. It would later be transferred to the Ontario Department of Highways on November 24, 1970 prior to the expansion of the expressway into a freeway that would be designated Highway 417.

Lot G, Broken Front C. The original patent for Lot G, Broken Front C, was first granted by the Crown on May 20, 1801, to William Fraser as part of his holdings acquired in the northeastern part of the Geographic Township of Napean. Upon his death, ownership of the property was transferred to "Isabella" Fraser, who in turn, sold it to Patrick Smith on November 14, 1831. Throughout the 1850s, much of the land on Lot G, Broken Front C and D, remained undeveloped. Instead, plots were leased to local farmers for market gardens. Beginning in 1857, and throughout the 1860s, much of Lot G, Broken Front C, was subdivided and parcels of various sizes were sold off, especially on the east bank of the Rideau Canal, where the original canal road (now Riverdale Avenue and Main Street) connected the area and hinterland with the City of Ottawa. The subdivision of land is noted in the 1879 Illustrated Historical Atlas of the County of Carleton, Ont. (H. Belden & Co. 1879; see Map 3).

Throughout the latter half of the nineteenth century Lot G, Broken Front C was largely dominated by farms and working class homes. Although the project area is located within the former lands acquired for the construction of the Canada Atlantic Railway Co. railroad, by the beginning of the twentieth century, development within Lot G, Broken Front C, included some industry. For example, on the southeast corner of the intersection of Metcalfe Street and Isabella Street was the Library Bureau of Canada, Ltd., manufacturers of office furniture (Plan 5). The Hooper Bros. marble works was located on the southwest corner of the intersection of Elgin Street and Isabella Street. The block between the intersection of Isabella Street and Metcalfe Street and O'Connor Street and Metcalfe Street was largely comprised of working class homes. Today, this section of the project area is dominated by a grocery store, condominiums, and smaller businesses.

Lot F, Broken Front D. The original patent for Lot F, Broken Front D was first granted by the Crown to William Stewart in March 1844. William Stewart had acquired neighbouring Lot F, Broken Front C from Alexander McDonnell in 1833. According to the 1879 Illustrated Historical Atlas of the County of Carleton, Ont. (H. Belden & Co. 1879; see Map 3), much of Lot F, Broken Front D remained undeveloped throughout the latter half of the nineteenth century. In 1873, William's son, Archibald, acquired ownership of the property, but it was not initially subject to his residential development of Archville. By the beginning of the twentieth century, the land north of the project area, fronting Harvey Street was mostly comprised of working class homes. On the south side of the Grand Trunk Railway

railroad, which would become the corridor for Highway 417, was Wildwood Avenue, which also consisted of working class homes (Plan 7). Wildwood Avenue and these home were subsequently demolished during the construction of Highway 417. However, their footprint remain outside the project area. Today, many of the original working class houses remain along Harvey Street and Hawthorne Avenue.

Lot G, Broken Front D. The original patent for Lot G, Broken Front D was first granted by the Crown to Hamnett Kirkes Pinhey in 1856. Hamnett was born in Plymouth, England on December 11, 1784. He married Mary Anne Tasker in London on December 12, 1812. In 1819, Hamnett retired from business, having been a partner in a ship and insurance broker business in England. With his accumulated wealth, Hamnett petitioned the Colonial Secretary for land in Upper Canada, which he was granted. Hamnett's 2000 acre estate was located along the Ottawa River in the Township of March, where he established a farm. Hemnett built a saw mill and grist mill on the property. He also became the local agent for the Canada Company (Hall 1985). Hemnettt invested in real estate throughout the region and through these endeavors, he likely acquired Lot G, Broken Front D, which remained undeveloped during his short ownership. Hamnett died on March 3, 1857. Before his death, Lot G, Broken Front D was acquired by Martin Kealey.

Throughout the latter half of the nineteenth century, Lot G, Broken Front D was subdivided into various sized parcels and acquired by individuals such as Crown Attorney Robert Leeds, who purchased 20 acres, including the project area, from Martin Kealey in 1862. Robert Lee built his home on the property in 1863 and maintained the forests on the land to escape the urban lifestyle, calling his small estate, Wildwood. According to the 1879 Illustrated Historical Atlas of the County of Carleton, Ont. (H. Belden & Co. 1879; see Map 3), Robert Lees house was located in the vicinity of the north end of Concord Street South, but it was demolished during the construction of Highway 417. Beginning at the end of the nineteenth century and the beginning of the twentieth century, the Robert Lees property was transformed to accommodate working class homes (Plan 7). Wildwood Avenue, which was named after his beloved estate, also disappeared with the construction of Highway 417. Today this section of the project area remains largely residential.

1.3.6 Summary

The land registries, census records and historic maps show that this area was mainly rural and had a relatively low level of occupancy in the eighteenth and nineteenth centuries. This was primarily due to the presence of absentee land speculators who only wished to own the land for future sale instead of settling upon it. Eventually however, the land within the project areas was acquired by the Canada Atlantic Railway Company for the construction of a railroad to service lumber holdings within the Ottawa Valley and communities situated along the line. Its construction began in 1880 and was completed in 1882. The entire project area is situated within this railway corridor. The Highway 417 bridges over the portions of the project area at Metcalfe Street and Elgin Street were built with the boundaries of the Canada Atlantic Railway Co. workshops and Canada Atlantic Railway Co. mainline. The Highway 417 bridge that crosses over Metcalfe Street was built overtop of the car building shops, which ran parallel with Catherine Street and the coal bins that ran parallel with Isabella Street. The Highway 417 bridge at Elgin Street was built overtop of railroad tracks. The section of Highway 417 constructed over the Rideau Canada follows the footprint of the Canada Atlantic Railway Co. railroad bridge built over the canal. On the east side of the Rideau Canal, Highway 417 and the Highway 417 right-of-way were also constructed overtop of the original Canada Atlantic Railway Co. main line. The Highway 417 bridge over what is today Colonel By Drive was constructed over a portion of the Rideau

Canal that had since been partially filled in, likely during the construction of Highway 417. The east bank of the Rideau Canal was once closer to Echo Drive. Colonel By Drive did not exist at the time. Where the Highway 417 bridge crosses Main Street, which is the boundary between concessions Broken Front C and Broken Front D, the highway and bridge were constructed over the Canada Atlantic Railway Co. main line.

Initially, Highway 417 through Ottawa was envisioned in the 1930s and 1940s as an expressway that ran through the city on the former Canadian National Railway line (originally the Canada Atlantic Railway Co. line) as part of the Greber Plan to modernize the city's infrastructure. This highway was constructed in four phases. The project area, including the bridge over the Rideau Canal and the approaches to the bridge were part of the fourth and final phase of construction, having been completed in November 1965. In 1966, the Queensway was given the designation of Highway 17. On June 12, 1967, the Crown, transferred the former Canadian National Railway line property to the National Capital Commission. It would later be transferred to the Ontario Department of Highways on November 24, 1970 prior to the expansion of the expressway into a freeway that would be designated Highway 417.

1.4 Archaeological Context

1.4.1 Current Conditions

Current conditions of the property exhibited extensive disturbance in the form of highway construction and culvert installation. Steep slopes were also associated with the highway. Within and outside of the project area we noted secondary growth vegetation which denoted the physical characteristics of the soil as well as a low-lying ground surface. Vegetation included grasses, bullrushes, purple loosestrife, vetch, chicory, common yarrow. No structures were noted.

Site conditions are delineated on Map 8 and photographs can be found in Section 9.0.

1.4.2 Physiography

The assessment of physical and environmental conditions of a region is important to the analysis of past human settlement behavior as well as for the interpretation of features and site patterns on the landscape. The cultural development of every society is strongly influenced by the surrounding natural environment which provides a finite set of resources that humans use to fulfill a variety of needs. Geomorphology, soils, water sources, climate, and vegetation are all significant factors in understanding patterns on the landscape. Changes in the landscape over time influences the types of cultural materials found during an archaeological assessment as well as their visibility.

Location. The project area is located on Lot F and Lot G, Broken Front C and Lot F and Lot G, Broken Front D in the GToN, CC within the City of Ottawa. The GToN is situated within the northern portion of LC, along the Ottawa River. The project area is situated between 60 metres and 65 metres above sea level (a.s.l.) (Image 1).

Glacial History and Geomorphology. Landscape features seen today are the result of the most recent period of glaciation. Beginning with the Illinoian glacier and ending with the Wisconsinan, the ice masses advanced as far south as Ohio and as far east as the continental shelf edges. The first interstadial period, the Sangamonian, witnessed ice retreat of the Illinoian glacier as far north as Hudson Bay. At this time, Easton (1992) posits that global temperatures were warmer or similar to that which we experience today. This period extended until approximately 75,000 years BP with the onset of the Wisconsinan glaciation.

The Wisconsinan glaciation is characterized by a series of advances (stadials) and retreats (interstadials), scouring, transporting and depositing surface materials across Ontario. Seven major stadials and six interstadials, along with several minor phases, have been recorded (Table 2).

Table 2. Major stadial and interstadial periods, including timelines and features, of the Wisconsinan glaciation (taken from Remmel 2009:20-23).

Period	Stadial / Interstadial	Years BP	Feature / s
Nicolet	Stadial	70,000	-blocked the St. Lawrence River -caused water to dam into Lake Scaborough -created the Scarborough Bluffs
St. Pierre	Interstadial	67,000	-St. Lawrence River is free of ice -Great Lakes waters drain towards the Atlantic Ocean
Guildwood	Stadial	55,000	-ice covers all of Ontario and extends into northern US
Port Talbot	Interstadial	48,000-36,000	-two warm intervals separated by a cold phase -palynological studies indicate boreal tree taxa -meltwaters drain through present-day New York
Cherrytree	Stadial	35,000-28,000	-ice sheet covers most of Southern Ontario -formation of Glacial Lake Thorncliffe
Plum Point	Interstadial	27,000	-ice retreats across Ontario
Nissouri	Stadial	20,000	-ice sheet reaches maximum extent
Erie	Interstadial	15,000	-ice retreats -Lake Erie drains eastward through the St. Lawrence River
Port Bruce	Stadial	14,000	-ice advances across Ontario and into US
Mackinaw	Interstadial	13,000	-ice retreat causes spliting of ice lobes -split exposes a dome of higher land called Ontario Island -Proglacial Lakes Arkona I, II, and III form at southern ice margins

Period	Stadial / Interstadial	Years BP	Feature / s
Port Huron	Stadial	12,900	-short-lived advance -Glacial Lakes Lake Whittlesey, Warren I, Warren II, Wayne and Warren III form
North Bay	Interstadial	11,840-8,100	-warmer climate -ice retreats across Canadian Shield -drainage flows east -formation of Glacial Lake Grassmere
Driftwood	Stadial	8,200-8,100	-deposition of clay tills in the Lake Barlow-Ojibway region -about 8,000 Glacial Lakes Ojibway and Agassiz catastrophically drain into Hudson Bay

The North Bay Interstadial, as it retreated across the landscape, exposed our project area.

Retreat during this phase was quite rapid and a number of post glacial lakes developed as a result of meltwater flow and drainage, ice dams and glacial deposits (i.e., Lake Algonquin, Lake Iroquois, Lake Erie and the Champlain Sea). Consequently, substantial areas would have been inundated by the copious flow of meltwaters at elevations well above modern sea levels before the formation of drainage outlets. Three major drainage outlets formed during this period: the Kirkfield Outlet (~11,500 BP) which drained Lake Algonquin into Lake Iroquois across the Kawarthas (south of the project area); the Fossmill Outlet (~10,800) which drained Lake Algonquin into the Champlain Sea to the Atlantic Ocean through Algonquin Park by way of the Petawawa and Barron Rivers; and, the Mattawa Outlet was exposed as the glacier receded northward and exposed lower outlets (~10,000) which continued to drain Lake Algonquin into the Champlain Sea via the Mattawa River (north of the project area) (Chapman and Putnam 1984:25-39; Larsen 1987:19; and Kaszycki 1985).

In existence from ~12,800 BP - 10,000 BP (Chapman and Putnam 1984:39; Gadd 1980), the Champlain Sea was a temporary inlet of the Atlantic Ocean. Although the maximum extent of this marine transgression is not yet known in specific terms, it has been posited that its eastern limits extended to the clay beds found within Leeds County and the Frontenac Axis, an eastern extension of the Canadian Shield which reaches into the Appalachian region of the United States. We also know that the northwestern arm of the Champlain Sea extended just north of Deep River (Barnett 1988). Unfortunately, because of the rocky nature of the region, the shoreline features of the western extension of the Champlain Sea remain unknown (Chapman and Putnam 1973:117).

As these glacial water sources drained, the zones created could have supported an extensive variety of animal, insect, bird, and vegetation species. Resource exploitation of these zones by early peoples is supported by the discovery of archaeological sites along the edges of ancient shorelines (palaeo-shorelines) across North America.

Palaeoecology. The last ice age completely disturbed vegetational patterns throughout the Eastern Ontario. Climatic warming marked an official end to the Pleistocene Period and caused an abrupt change in the composition of forests, woodlands and parklands south of the ice sheets.

With deglaciation, vegetation migrated northwards and different species populated the ice free margins. Palynological analysis of pollen grains (Pielou 1991; Remmel 2009:30; Wright 1964) illustrates that more diversified vegetation developed with slight differences noted between the west side of the continent and the lowlands and east side of the continent. Furthermore, the process of recolonization depended on the production rates of different species and their ability to grow on freshly exposed terrain which may have reduced pH levels (Matthews 1992:122). Initially, species more common to herbaceous tundra environs grew (i.e., herbs, mosses and lichens) followed by shrub tundra communities (i.e., sedges and small shrubs) and then to spruce (Picea ssp.) and poplar (Populus ssp.) woodlands. Warming temperatures also encouraged deciduous growth like hemlock and beech and also caused treelines to shift northward, terrestrial and marine species to increase their range northward, and in the mountains, caused the above to shift to higher elevations.

Taxa noted within the project area are today not much different from that which it would have been thousands of years ago. The project area lies within the Northern Hardwood Forest, which is within the Great Lakes-St. Lawrence Forest ecoregion. This is a transitional forest which illustrates an overlap of northern needle-leaved trees and southern broad-leaved deciduous trees and produces a mosaic of various vegetative communities controlled by local climate and soils.

Climatic upheavals wrought diverse changes amongst terrestrial and marine animal and bird migration patterns and habitats. It may be assumed that mammals typically found today in these environments, would have been present during the late Pleistocene and early Holocene Periods in the project area (i.e., caribou, bear, fox, hare, chipmunk, squirrel, mouse, weasel, lemming, vole, moose, porcupine and bat) (Remmel 2009:32). Today, mammals such as black bear (*Ursus americanus*), moose (*Alces alces*), white-tailed deer (*Odocoileus virginianus*) and wolf (*Canis lycaon*) are commonly seen throughout the region. Furthermore, marine fossils in the vicinity of the former Champlain Sea indicate large mammals such as whale, walrus and seal inhabited the area during the open-water season (Chapman and Putnam 1984; Cronin 1977; Loring 1980). As these mammals would have migrated into the region following their food sources, it is also safe to assume that smaller marine life, whose skeletal existence may not have survived to become part of the archaeological record, were present.

Moreover, as the prevailing climate of the time would likely have meant that the Champlain Sea would have frozen over during the winter season, marine mammals would have been forced to migrate into the Gulf of St. Lawrence, where the waters were open. However, as hypothesized by Loring (1980:35), “local populations of belugas or seals might have been trapped in areas of open water surrounded by ice and would have been easily killed by hunters...” This suggests that marine as well as terrestrial exploitation of food resources would have been an important aspect of subsistence practices of the local indigenous populations. Therefore, the probability of at least a partial maritime-based economy in the region of the project area is high.

Physiography and Geology. The project area is located within the Mixed Wood Plains ecozone (Map 4). According to Natural Resources Canada (2011), the Mixed Wood Plains can be characterized by the following description:

> “... topography ranges from extremely flat areas in the southwest and southeast to rugged terrain of the Niagara Escarpment. Vegetation is diverse, characterized by mixed deciduous-evergreen forests and tolerant hardwood forests including those forests known as Carolinian

forests. Alvars and tallgrass prairies also occur. Wetlands are numerous in certain areas, although many wetlands have been drained. Carolinian Canada (the most southerly portion of this ecozone) boasts the highest concentration of species in Canada. The number of species at risk is also high."

Bedrock geology within the project area is comprised of Ordovician rocks (Map 4). The Shield is broken into many sections, or "provinces." Almost 3 billion years ago, these provinces began to rub against each other, causing friction and a build up of pressure. Many fissures and faults were created in the area as the Earth's crust twisted, sheared, and folded. Molten material, specifically andesite, a dark grey coloured rock, was forced up through the fissures to the surface. As it reached the ground, the new rock, in some cases carrying precious metals such as gold and silver, cooled and became part of the landmass. These ancient folded rocks are known as Greenstone belts which eventually were overlain with more recent glacial sediments.

Sedimentary rocks of Paleozoic and Mesozoic age formed between approximately 570 to 66.4 million years ago, during a global warming period, when several periods of marine inundation of North America were responsible for the deposition of thick layers of sediments which eventually resulted in the formation of shale, limestone and sandstone (Eyles 2002:5).

The area surrounding the project area is composed of Upper Ordovician. Specifically, the project is located within a formation which includes such rocks as shale, limestone, dolostone, sandstone, arkose and siltstone (Map 5). These formations typically include chert formations. The project area is surrounded by rocks of this origin.

One of the most common characteristics of Palaeoamerican material assemblages is the prevalence of cherts and similarities of lithic tools across wide ranging regions (Mason 1981, 1986; Goodyear 1989). Chert is a fine-grained, siliceous material which is easy to knap and therefore commonly used in the production of stone tools. In addition to chert use, quartz materials were also widely utilized, particularly in more northern regions or within the Canadian Shield, where quartz and quartzite materials were more locally available.

An increase in quartz exploitation during the Archaic period has been documented in the Northeast (Deal 1991; McGhee and Tuck 1974; Robinson 2006; Sanger 2005; Suttie 2005). As veins of good-quality siliceous material (i.e., chert, ryolite, chalcedony) are limited, it stands to reason that this could also be anticipated within the area.

The Project Area is situated within the Ottawa Valley Clay Plains and encompasses one specific surficial geology type; clay plains (Map 6) (Chapman and Putnam 1984:205). However, it is surrounded by quite complex surficial deposits. These surficial types are the result of glacial recession and melting as well as inundation of the area and gradual recession of meltwaters by Lake Champlain and include limestone plains, till plains (drumlinized), sand plains, peat and muck, eskers, beaches and shorecliffs and drumlins.

Soils. Soil, in terms of its morphological characteristics, is defined as unconsolidated surface material forming "natural bodies" made up of mineral and organic materials as well as the living matter within them. It is a dynamic entity with materials continually and simultaneously absorbed, released and transformed.

The formation of soils is heavily influenced by its parent material, climate, topography, bio-activity and time, however, it is mainly the combined effects of climate and living matter that convert a material to soil. For example, in moisture-rich environs, the dampness and rich vegetation may lead to deep, richly organic soils, good for agricultural production. However, in desert areas, where precipitation is low, the lack of moisture and vegetation may lead to sparse soil development and where soils exist, they may be thin and highly mineral. Furthermore, human disturbances such as grave sites, dwellings, agricultural activities and garbage dumps may also affect soil development, giving it other unique characteristics.

The soils of the project area formed to their current composition over the past 10,000 years or so; since glacial melting at the end of the last ice age. Soils formed from glacial deposits vary in composition depending on the rock type over which the glacier travelled. Since glaciers advance and retreat with time, the composition and depositional environment of the parent material can be quite complex. Overall, the texture of soil produced in glacial deposits reflects the mode and distance of transport as well as the type of rock scoured. Shale and limestone scouring tends to produce a soil with relatively more clay and silt-size materials, whereas igneous and metamorphic rocks produce mostly sandy soils. Deposits beneath the ice usually result in finer textured, denser materials, whereas outwash and front and side deposits are generally coarser. Furthermore, glacial till, glaciofluvial and glaciolacustrine sediments often occur in close association. With time, soil horizons, or "zones within the soil that parallel the land surface and have distinctive physical, chemical and biological properties" develop (Holliday 2004:3). Soil horizons together, form a profile; a vertical arrangement of horizons seen in a two-dimensional arrangement (what we see during observations).

The soils of Carleton County vary considerably across the region, with glacial surface deposits and deep, well-drained soils (Hills et al. 1944). The characteristics of the soils within the project area have been formed by their parent materials and the geological structure of these materials. The structural type which lies within the project area are "sorted clays, silts, sands and gravels laid down by water." (Hills et al. 1944:12). Unfortunately, a soil map is not available for the project area as it is considered part of the City of Ottawa and was developed before mapping of the area began.

Hydrology. The modern water courses we see today evolved as their ancestral waterways and their tributaries adjusted to the retreat of the Champlain Sea. During glacial melt and ice retreat at the end of the Pleistocene and beginning of the Holocene periods, there was a much larger flow of water through the project area than at present and on several occasions, rivers shifted into new channels. However, by approximately 8,000 years ago, modern drainage patterns were established (Kennedy 1970).

The project area is now located within the St. Lawrence watershed which is within the larger Atlantic Ocean drainage basin (Map 7), and is drained via a number of meandering waterways (Map 1; Image 1). Watersheds are typically defined by the topography of the surrounding landscape and includes such factors as shape, contours and elevations. They are comprised of streams, creeks, brooks, rivers, lakes, ponds, wetlands, estuaries, uplands, forests and meadows and also shorelines.

Present within, or within relative close vicinity to the project area today are lakes and rivers (i.e., Dows Lake, Ottawa River, Rideau River, etc.), creeks and streams (i.e., Sawmill Creek, Green Creek, McEwan Creek, etc.) and a number of low-lying and wet areas identified as marsh or swamp. Although the geography of the area has been largely shaped by the geomorphology of the region, many of these watersheds have been altered by human intervention; a by-product of development.

Water routes played a very important role in the early development of Canada and served as a transportation route for pre-contact First Nations groups prior to European arrival. These water sources were used to traverse the interior of the province prior to the construction of railways and roads. The potential for the discovery of archaeological resources increases drastically in particularly difficult areas along these routes, such as at rapids or chutes, where a portage was necessary. In addition, the shores of rivers and creeks were particularly attractive for temporary and semi-permanent settlement, especially in areas of the shore that were easily accessible by water. These areas were of particular interest, not only for their transportation value, but for access to potable water and foodstuffs, especially fish. The presence of secondary water sources, including permanently or seasonally inundated swamps, offered access to a variety of resources, including migratory birds, rice, and reeds for basket-making.

According to the *A Background Study for Nomination of the Ottawa River Under the Canadian Heritage Rivers System* (2005:1-2):

> "The Ottawa River cradles the natural and cultural heart of eastern Ontario and western Quebec. Canada's Aboriginal Peoples established their presence here some 6,000 years ago, followed by Europeans in pursuit of furs, timber, and land. From the area's first inhabitants to the explorers, guides, traders, loggers, settlers, and entrepreneurs that followed, the Ottawa River was truly the original trans-Canada highway.
>
> The Ottawa River played an integral role in many of the key stories that make up Canada's history. It was the route for much of the early European exploration of North America, including Samuel de Champlain. Explorers in search of the Northwest Passage began their journeys along the Ottawa River. Other celebrated figures in Canadian history including Nicollet, Radisson, La Vérendrye, Dulhut and De Troyes, traveled west along the Ottawa River to establish trade relationships with First Nations communities, laying the groundwork for the fur trade.
>
> The fur trade relied on the famous waterway routes that began and ended with the Ottawa River. France's North American colonial economy depended on the fur trade, which led to the development of the coureurs de bois and voyageurs era, and later to the creation of the North West and Hudson's Bay Companies. Amid the profound social, political, and economic changes of the 17th century, the Ottawa River remained one of North America's most important trading routes. It played a central role in the story of the fur trade in North America, and thus in the development of Canada.
>
> The rich forests along the Ottawa Waterway attracted thousands of European immigrants in search of work. Waterpower for mills and transporting logs first drew settlers, and these sites eventually became permanent settlements. Descendents of Irish, French Canadian, Scottish and other nationalities produced a unique Ottawa Valley culture that is expressed in language, music and dance.
>
> The great white pines of the Ottawa River Valley built British warships, and went on to construct Boston, New York, and Chicago. The timber and later lumber trades of the Ottawa Valley were made possible by the river itself and its tributaries, which were at the heart of the distribution process. The canal and steamboating era permitted extensive travel, trade and settlement.

> Subsequent hydroelectric development over the past century has dramatically transformed the Ottawa River. Economic development and settlement along both shores of the Ottawa River continue to be intimately intertwined with river resources.
>
> The natural heritage that made the Ottawa River so attractive to its early inhabitants continues to be significant on a national level. Flowing 1271 kilometres from its source deep in the wilderness of AbitibiTémiscamingue, the Ottawa River is one of the few rivers in the world to completely turn back on itself to flow southeast before reaching the St. Lawrence River. As the largest tributary to the St. Lawrence, the health of the Ottawa River watershed plays a significant role in the St. Lawrence basin ecosystem."

The Ottawa River is truly an original Canadian highway.

Climate. Modern climatic variation depends almost entirely upon location and human impacts on the environment. The project area, located in eastern Ontario, is influenced by the modifying factor of the Great Lakes. The Great Lakes tend to add moisture to the air in the autumn and winter in conjunction with protecting the region from the worst of the cold during the winter months, and during the spring and summer they act to moderate the temperature of the region. This produces an ideal environment for agricultural practices as the growing season tends to be longer and the cold months not as harsh as through the remainder of Canada.

1.4.3 Previous Archaeological Assessments

Archaeological research within Ontario is often limited to discoveries made during development activities. However, this does not necessarily reflect the known and unknown, yet unrecorded archaeological history of the area. Throughout the nineteenth and early twentieth century, as Euro-Canadian settlers and loggers penetrated the forests and lakes of the region, some would encounter and collect evidence of past First Nations activities, in the form of stone and copper tools, or organic paraphernalia. This practice continued well into the twentieth century and is still carried out to this day by cottagers, tourists, and local residents, some who have amassed significant collections. Furthermore, there are oral references to evidence of pre-contact First Nations occupation made by the first Euro-Canadian settlers to the region, which sometimes results in sites being "recreationally" excavated by non-professional archaeologists.

With increased sensitivity towards the need to preserve cultural heritage within the Province, hundreds of archaeological projects have been recently undertaken within Ontario. Often initiated by development projects, including infrastructure development and improvement, subdivision applications, and construction activity, First Nations and early Euro-Canadian history of the region is being revealed.

A search of the database of archaeological assessments found that two additional archaeological assessments were conducted within the study area and/or within 100 metres of the project area. The first was conducted in 2002 by C.R. Murphy Archaeology. It is entitled *Stage 1 Archaeological Assessment of Highway 417 from Highway 416 easterly to Anderson Road, City of Ottawa, Ontario (W.P. 663-93-00).* This archaeological assessment found that significant prehistoric or historic archaeological sites may be found at any location beyond the present limits of the developed Highway 417 right-of-way. As a result, a Stage 2 assessment was conducted by the same firm in 2004. This Stage 2 property survey did not find or recover any cultural materials within the present limits of the

developed Highway 417 right-of-way nor within the proposed Hunt Club Road extension and the Hunt Club Road/Highway 417 interchange. It recommended that all future work to Highway 417 which requires ***new property*** receive Stage 2 archaeological and built heritage field investigation (C.R. Murphy Archaeology 2004).

1.4.4 Registered Archaeological Sites

The Ontario Ministry of Tourism, Culture and Sport maintains a database (OASD) of all known registered archaeological sites in the Province. A search of the database within a one kilometre radius around the study area indicates the presence of 10 archaeological sites, most of which fall under the post-contact time period. These sites are: Appin Place (BiFw-80), Curran Residence (BiFw-34), Sapper's Bridge (BiFw-33), Arts Court (BiFw-177), Oblates Cemetery (BiFw-176), Barrack Hill Cemetery (BiFw-171), Marlborough Avenue (BiFw-11), Lansdowne Park Site (BiFw-103), The Devlin Residence Site (BiFw-102) and BiFw-10. The closest site to the project area is the Appin Place site. It is situated 175 metres to the northwest, between Argyle Avenue and McLeod Street.

Table 3. Registered archaeological sites within a one kilometre radius of the project area.

Borden Number	Site Name	Time Period	Affinity	Site Type	Cultural Materials	Current Development Status
BiFw-80	Appin Place	Post-Contact	Euro-Canadian	farmstead	unknown	Further CHVI
BiFw-34	Curran Residence	Post-Contact	unknown	midden	glass, ceramics, bone	unknown
BiFw-33	Sapper's Bridge	Post-Contact	unknown	unknown	construction materials, nails, ceramics	unknown
BiFw-177	Arts Court	Post-Contact	Euro-Canadian	residential	unknown (completely disturbed)	No Further CHVI
BiFw-176	Oblates Cemetery	Post-Contact	unknown	cemetery	grave goods	No Further CHVI
BiFw-171	Barrack Hill Cemetery	Post-Contact	Euro-Canadian	burial	grave goods	No Further CHVI
BiFw-11	Marlborough Avenue	Pre-Contact		findspot	stone maul	unknown
BiFw-103	Lansdowne Park Site		unknown	unknown	unknown	unknown
BiFw-102	The Devlin Residence Site	Post-Contact	unknown	unknown	unknown	unknown
BiFw-10	-	Pre-Contact	unknown	findspot	stone implement	unknown

1.4.5 Historical Plaques

Aside from the presence of nearby registered archaeological sites, other indicators of the presence of extant archaeological remains are the proximity of historical plaques to the study area that commemorate important events in a region's past, whether it be the birth of an individual, the site a specific battle, or the construction of a unique building. Generally, historical plaques and markers point to a specific locale on the landscape that can be visited by the public. Although plaques and markers may not be placed in the exact location that the event has occurred, generally they are in close proximity, taking into consideration access to the public. In Ontario, historical plaques may be erected by the federal government through the Historic Sites and Monuments Board of Canada (HSMBC), the Ontario Heritage Trust (OHT), and local heritage agencies or historical societies. There are no historical plaques or markers within the study area; however, there are four within 200 metres. These include: Diamond Jenness 1886-1969 (168 metres to the northwest), Edward Sapir 1884-1939 (168 metres to the northwest), Meetings of Parliament (168 metres to the northwest) and Victoria Memorial Museum Building (227 metres to the northwest). All of these plaques are situated within the block delineated by Argyle Avenue, O'Connor Street, McLeod Street and Metcalfe Street.

1.4.6 Summary

Archaeological and cultural heritage work conducted in the immediately surrounding area has not provided any evidence of archaeological remains. However, the physical setting of the project area indicates that it may retain potential for extant cultural materials associated with pre-contact First Nations and Euro-Canadian settlement in the area.

Pre-contact First Nations groups migrated across Ontario, likely following the ice sheet as it receded northwards and adapting to the changing environment. The newly exposed landscape would have been a productive ecozone, with large numbers of terrestrial and marine mammals, birds, insects and vegetation populating the margins. This biomass would have been considerable and would have offered a readily available food source for migrating populations. Archaeological and cultural heritage work conducted in the surrounding area has provided evidence of archaeological remains, dating back to the Late Archaic period and extending into the Historic period.

2.0 FIELD METHODS

A Stage 1 property inspection of the Project Area was conducted by Laura McRae and Derek Paauw on June 20, 2017 under the professional archaeological consulting licence P248 (P248-0291-2017) in order to observe the current land conditions and evaluate the Project Area's archaeological potential. All portions of the Project Area, including its periphery, were inspected and photographed from publicly accessible right-of-ways (Images 1 to 24 and Map 8). The weather on the day was approximately 29 degrees Celsius, sunny and humid. The lighting conditions were good. At no time during the archaeological assessment were weather or lighting conditions detrimental to the observation of features of archaeological potential

The Project Area is made up completely of the Queensway (Highway 417 corridor and right-of-way), ramps and intersections. The Project Area also crosses a portion of the Rideau Canal but it does not deviate from the current right-of-way (Images 14, 16, 17, 19). There are no listed or registered heritage properties or cemeteries within the Project Area, or within 50 m of the Project Area.

Field notes and photographs of the study areas were taken during the inspection by Laura McRae. Image locations and orientations were noted and are illustrated on the site conditions map (Map 8).

Table 4. Photo # and description.

Image #	Description
4	Viewing south towards project area 1 and a candidate staging area.
5	Viewing southeast towards project area 1.
6	Viewing west along the Highway 417 corridor. Note the extent of its elevation and the steep slope.
7	Viewing east along the south side of the Highway 417 corridor.
8	Viewing north towards project area 1.
9	Viewing north towards project area 2.
10	Viewing northwest towards project area 4.
11	Viewing west along the south side of the Highway 417 corridor and a candidate staging area.
12	Viewing south from the north side of Highway 417
13	Viewing southwest towards project area 3.
14	Viewing west from the south side of Highway 417 towards project area 3 and the Rideau Canal.
15	Viewing east along the Highway 417 corridor. Note the slope.
16	Viewing northwest towards Highway 417 and the Rideau Canal.

Image #	Description
17	Viewing north towards Highway 417 and the Rideau Canal.
18	Viewing west from below Highway 417.
19	Viewing east from the north side of Highway 417. Within project area 3.
20	Viewing southwest towards project area 2. From the north side of Highway 417.
21	Viewing southeast towards project area 2.
22	Viewing northeast towards a candidate staging area on Hawthorne Street.
23	Viewing southeast towards a candidate staging area on Catherine Street, east of O'Connor.
24	Viewing north towards a candidate staging area on Isabella Street, east of O'Connor.

3.0 ANALYSIS AND CONCLUSIONS

3.1 Archaeological Potential

Assigning levels of potential archaeological significance is employed by applying provincial environmental assessment guidelines (Weiler 1980). The information includes the identification and evaluation of any feature that has one or more of the following attributes:

* Potential can be determined via archaeological exploration, survey, or fieldwork. The information gleaned from these activities can provide answers to hypothesized questions (i.e., relate to particular times and places) regarding events and/or processes that occurred in the past, thereby adding to our knowledge and appreciation of history.

* Potential may be determined through archaeological exploration, survey, and fieldwork that may contribute to testing the validity of anthropological principles, cultural change and ecological adaptation, thereby contributing to the understanding and appreciation of our human-made heritage.

* The possibility that various technical, methodological, and theoretical advances might occur during archaeological investigation of a feature, alone or in association with other features exists. This therefore may contribute to the development of better scientific means of understanding and appreciating our human-made heritage.

Evaluating archaeological potential of an area involves the assessment of various criteria. The most common criteria used to evaluate archaeological potential relate to its physical setting which may include potable water sources, elevated landforms, and well-drained areas to which First Nations settlement was often oriented, as well as the presence of fertile soils suitable for cultivation. Features and characteristics that indicate archaeological potential are defined within Section 1.3.1 of the S&Gs (MTCS 2011:17-18) and include:

* Previously identified archaeological sites;

* Water source:

    * Primary water sources (e.g. lakes, rivers, streams, creeks);

    * Secondary water sources (e.g. intermittent streams and creeks; springs; marshes; swamps);

    * Features indicating past water sources (e.g. glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels, shorelines of drained lakes or marshes and cobble beaches);

    * Accessible or inaccessible shoreline (e.g. high bluffs, swamps or marsh fields by the edge of a lake, sandbars stretching into marsh);

* Elevated topography (eskers, drumlins, large knolls, plateaux);

* Pockets of well drained sandy soil, especially near areas of heavy soil or rocky ground;

* Distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases;

* Resource areas including:

    * Food or medicinal plants;

    * Scarce raw minerals (e.g., quartz, copper, ochre or outcrops of chert);

    * Early Euro-Canadian industry (fur trade, logging, prospecting, mining);

* Areas of early Euro-Canadian settlement including:

    * Early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, farmstead complexes);

    * Early wharf or dock complexes, pioneer churches and early cemeteries;

* Early historical transportation routes (e.g., trails, passes, roads, railways, portage routes);

* Property listed on a municipal register or designated under the Ontario Heritage Act or that is a federal, provincial or municipal historic landmark or site;

* Property that local histories or informants have identified with possible archaeological sites, historical events, activities or occupations.

Many of the above features of archaeological potential have a buffer assigned to them, extending the zone of archaeological potential beyond the physical feature. The following buffers are commonly accepted by the MTCS and specifically indicated in Section 1.4 of the S&Gs (MTCS 2011:20-21).

* 300 metre buffer: previously identified archaeological site; water sources; areas of early Euro-Canadian settlement; or locations identified through local knowledge or informants;

* 100 metre buffer: early historical transportation route;

* No buffer, potential is restricted to the physical limits or the feature: elevated topography, pockets of well-drained sandy soil, distinctive land formations, resources areas, listed or designated properties and landmark properties.

Features of archaeological potential found on or in the vicinity of the Project Area include: water sources, areas of early Euro-Canadian settlement and early historical transportation routes.

3.2 Archaeological Integrity

A negative indicator of archaeological potential is extensive below grade land disturbance. This includes widespread earth movement activities that would have eradicated or relocated any archaeological resources to such a degree that their information potential and cultural heritage value or interest has been lost.

Activities that are recognized to cause sufficient disturbance to remove archaeological potential include: quarrying, major landscaping involving grading below topsoil, building footprints and infrastructure development. Activities including agricultural cultivation, gardening, minor grading and landscaping do not necessarily remove archaeological potential (MTCS 2011:18).

> Archaeological potential can be determined not to be present for either the entire property or a part(s) of it when the area under consideration has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources.

Natural physical features can also indicate that all or portions of a Project Area have low or no archaeological potential including: permanently wet areas, exposed bedrock and slopes greater than 20 degrees (except in locations likely to contain pictographs or petroglyphs).

3.3 Conclusions

The Stage 1 archaeological assessment of the Project Area determined that it had no archaeological potential for either pre-contact and Euro-Canadian archaeological resources.

A significant amount of disturbance has occurred within the Project Area through the early to middle twentieth century development of the Highway 417 corridor and right-of-way (Queensway), removing much of its archaeological potential (Map 9). Disturbance activities also include the construction of sideroads, exit and entrance ramps, infrastructure and the major landscaping involving grading below topsoil associated with all of those activities. All of the Project Area has been disturbed through development sufficiently that there is no potential for the recovery of archaeological resources of cultural heritage value or interest within those portions of the Project Area in a meaningful context. This conclusion is consistent with the definition of ‘complete and intensive disturbance’ described in Section 1.3.2 of the S&Gs (MTCS 2011:18).

These urban development disturbances have also been confirmed by several other Stage 1 and Stage 2 archaeological assessments partially within the Project Area (C.R. Murphy Archaeology 2002, 2004).

Three proposed staging sites, M2, M3 and M6 however, are not situated within the Highway 417 right-of-way. These areas retain potential based on their proximity to waterways, historic concession roads and early Euro-Canadian settlement.

4.0 RECOMMENDATIONS

The Stage 1 archaeological assessment indicates that the Project Area had general archaeological potential for the recovery of both pre-contact and Euro-Canadian archaeological resources, but that this archaeological potential has been removed through significant disturbance associated with the development of the Project Area. Given the findings of the assessment, the following recommendations are forwarded:

1) The entire MTO Queensway (Highway 417) Environmental Assessment Archaeological Project Area within the highway right-of-way, including proposed staging sites E-1, E-1e, E-2, E-3, E-4, M1, M4 and M5 have been subject to extensive and deep land alterations that have severly damaged the integrity of any potential archaeological resources, and therefore does not require further archaeological assessment (as illustrated by the areas marked in yellow on Map 9).

2) Should the proposed staging areas M2, M3 and M6, as outlined on plan 3 , be subjected to ground disturbing activities during this project, additional archaeological work (Stage 2 Property Survey) will be required (as illustrated by the areas marked in red on Map 9). This assessment should be undertaken by an archaeologist licensed in the Province of Ontario. Based on the existing landscape conditions, the Stage 2 Assessment of these areas will require the excavation of mechanical trenches (1 m x 4 m) using a backhoe or equivalent heavy machinery at targeted areas. Any utility locates must be completed before Stage 2 mechanical testing begins.

3) Notwithstanding the results and recommendations presented in this study, The Central Archaeology Group Inc. notes that no archaeological assessment, no matter how thorough or carefully completed, can necessarily predict, account for, or identify every form of isolated or deeply buried archaeological deposit. Therefore, in the event that archaeological remains are found during subsequent construction and development activities, the consultant archaeologist, approval authority, and the Cultural Programs Unit of the Ministry of Tourism, Culture and Sport should be immediately notified.

The MTCS is requested to review, and provide a letter indicating their satisfaction with, the results and recommendations presented herein, with regard to the 2011 Standards and Guidelines for Consultant Archaeologists and the terms and conditions for archaeological licenses, and to enter this report into the Ontario Public Register of Archaeological Reports.

5.0 ADVICE ON COMPLIANCE WITH LEGISLATION

This report is submitted to the Minister of Tourism and Culture as a condition of licensing in accordance with Part VI of the *Ontario Heritage Act,* R.S.O. 1990, C. 0.18. The report is reviewed to ensure that it complies with the standards and guidelines that are issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism, Culture and Sport, a letter will be issued by the ministry stating that there are no further concerns with regards to alterations to archaeological sites by the proposed development.

It is an offence under Sections 48 and 69 of the *Ontario Heritage Act* for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Report referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act.* The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.

The *Cemeteries Act,* R.S.O. 1990 C. 4 and the *Funeral, Burial and Cremation services Act,* 2002, S.O. 2002, C. 33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

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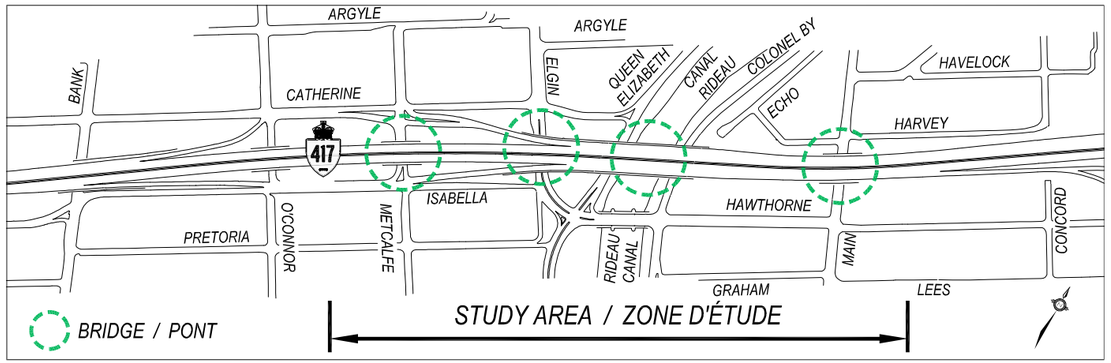
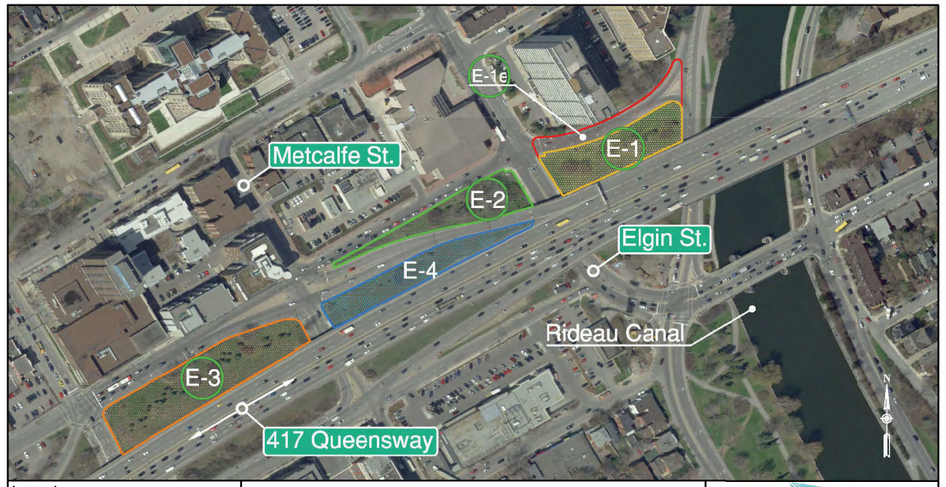
9.0 PLANS



Plan 1. Schematic of the project area (courtesy of BTE).

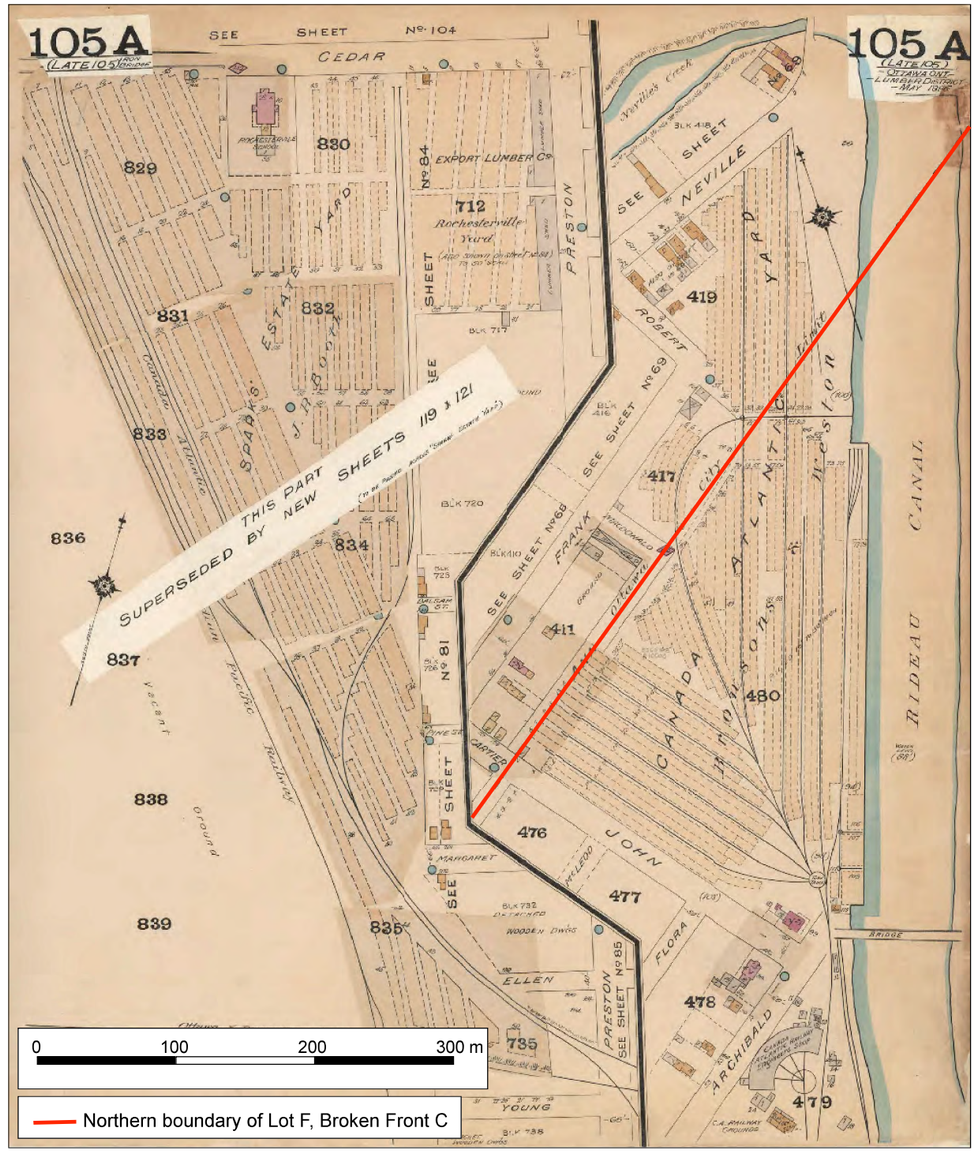


Legend			
Potential Staging Site Area	POTENTIAL STAGING SITES FOR THE METCALFE STREET AND ELGIN STREET STRUCTURES		
Preliminary Recommendation to Carry Forward	GWP 4170-13-00 OTTAWA QUEENSWAY DOWNTOWN BRIDGES REHABILITATION/REPLACEMENT FROM METCALFE STREET TO MAIN STREET ENVIRONMENTAL ASSESSMENT	BT ENGINEERING	Scale N.T.S.

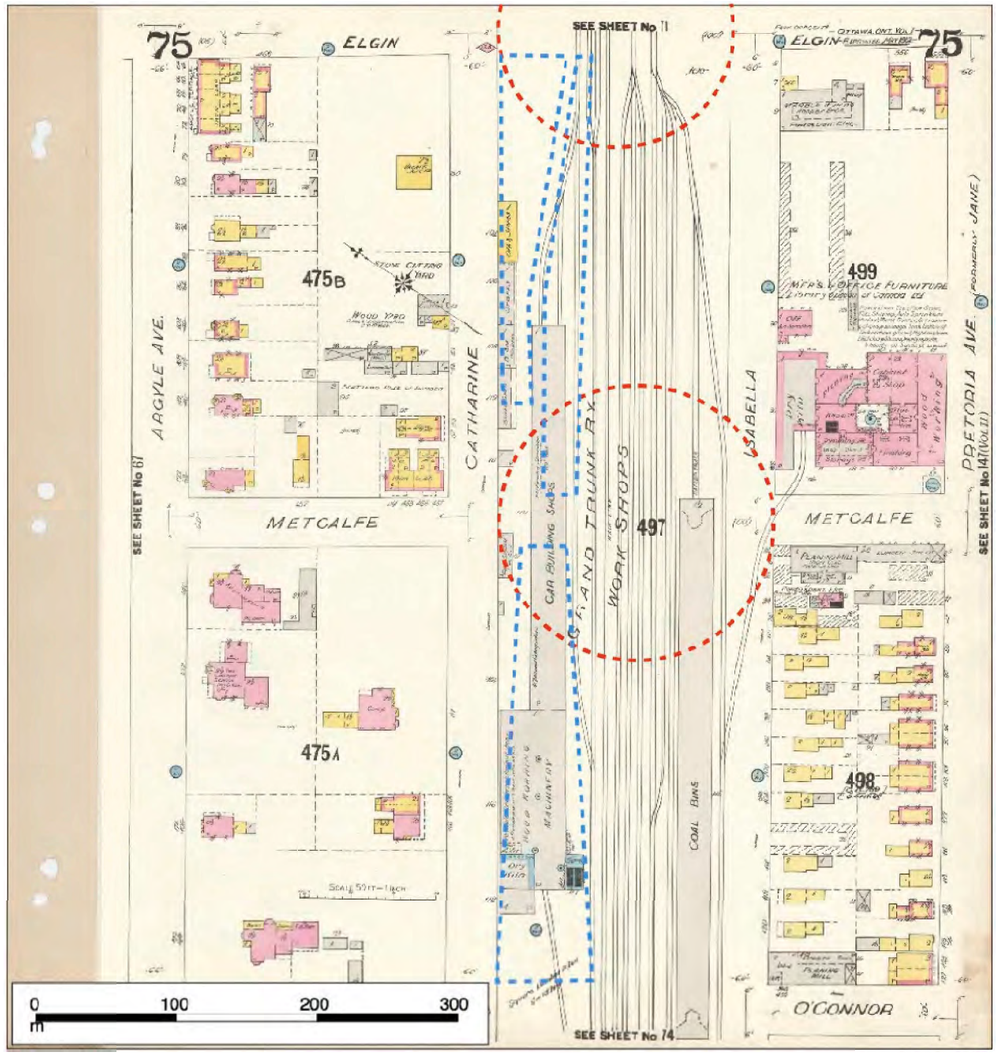
Plan 2. Potential Staging Sites for Metcalfe Street and Elgin Street (courtesy of BTE).



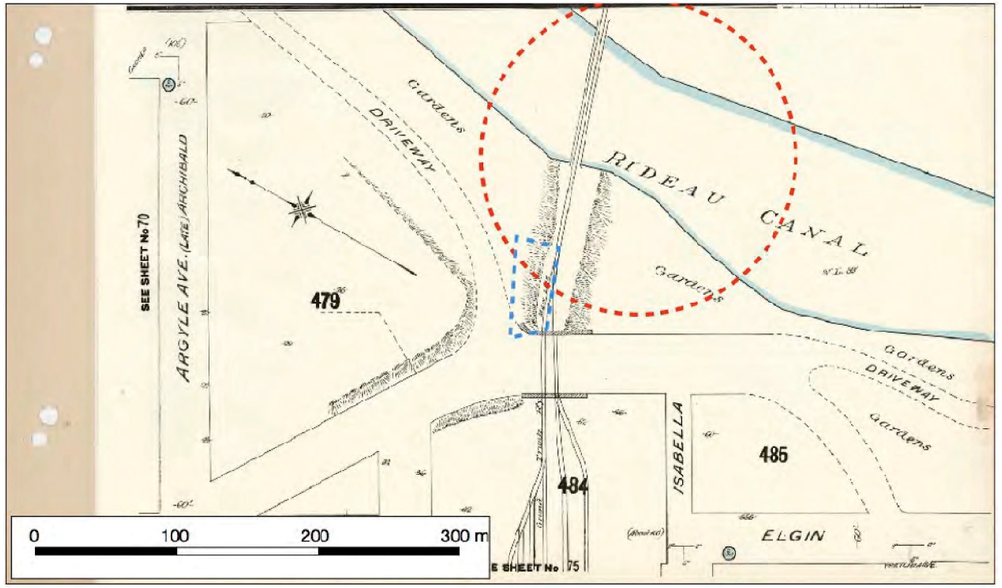
Plan 3. Potential Staging Sites for Main Street (courtesy of BTE).



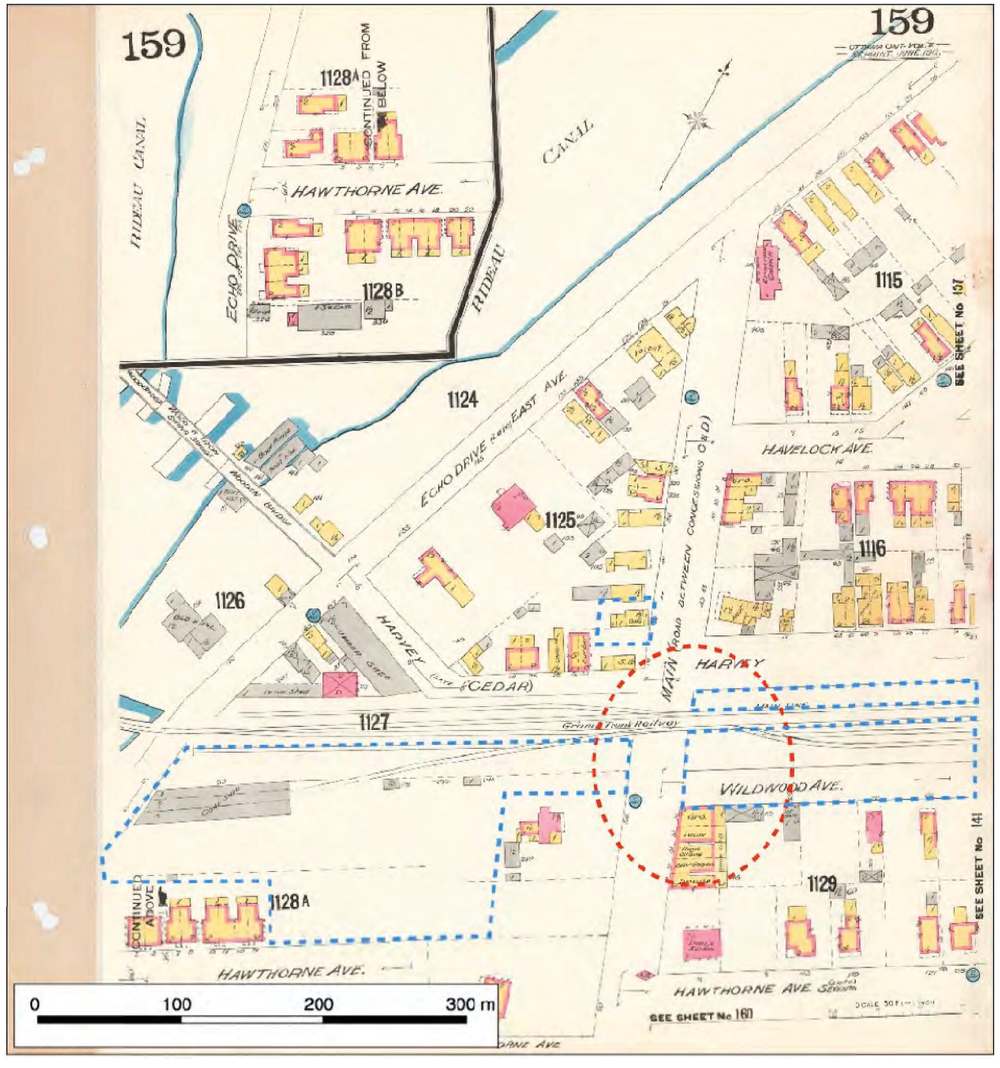
Plan 4. Charles E. Goad Insurance plan of the northeast corner of Lot F, Broken Front C, west of the Rideau Canal, encompassing the Canada Atlantic Railway Co. grounds and the Bronsons & Weston Co. storage yard as it appeared in January 1888 and revised in January 1901 (LAC Microfiche NMC13793).



Plan 5. Charles E. Goad Insurance plan of Metcalfe Street and Elgin Street at the intersections of Catherine Street and Isabella Street as they appeared in September 1902 and revised in 1912 (LAC R6990-291-X-E). Project Areas are delineated in red. Candidate staging sites are in blue.

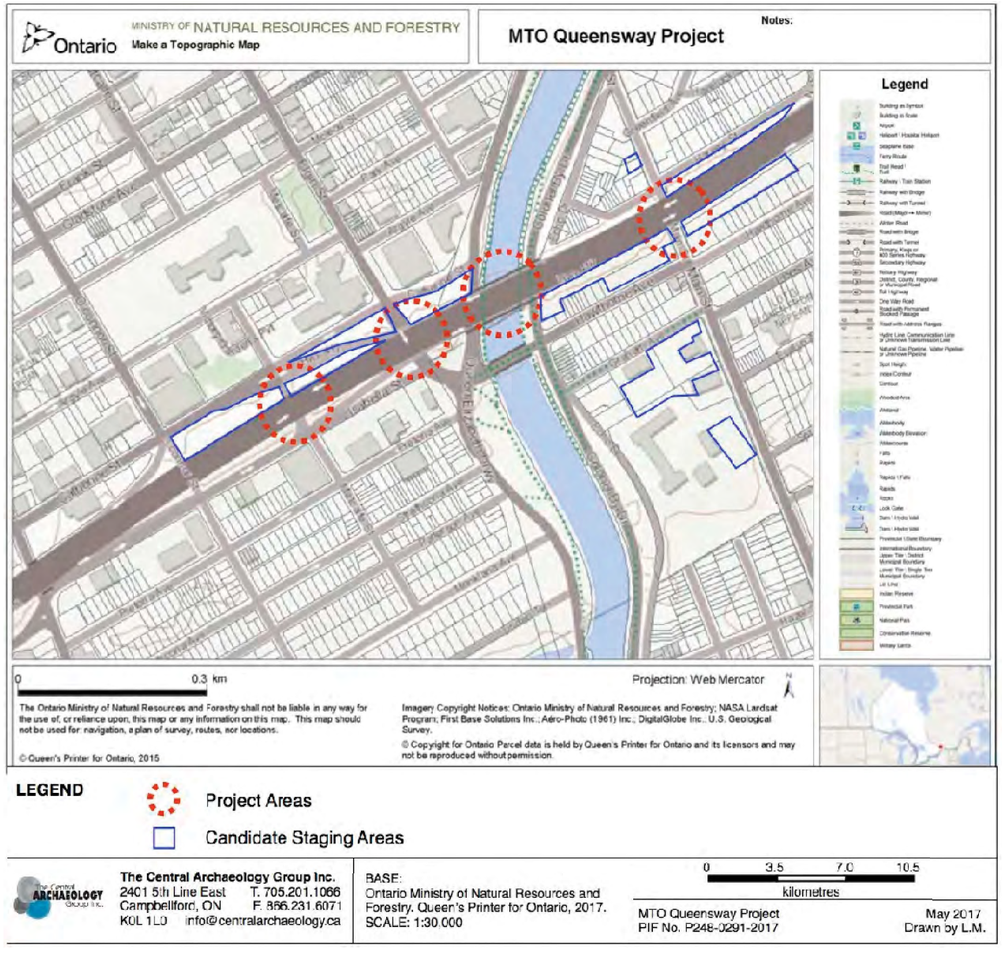


Plan 6. Charles E. Goad Insurance plan of Elgin Street at the intersections of Catherine Street and Isabella Street and the west bank of the Rideau Canal as they appeared in September 1902 and revised in 1912 (LAC R6990-291-X-E). Project Area is delineated in red. Candidate staging sites are in blue.



Plan 7. Charles E. Goad Insurance plan of the east bank of the Rideau Canal and Main Street as they appeared in December 1902 and revised in June 1912 (LAC R6990-291-1-E). Project Area is delineated in red. Candidate staging sites are in blue.

8.0 MAPS



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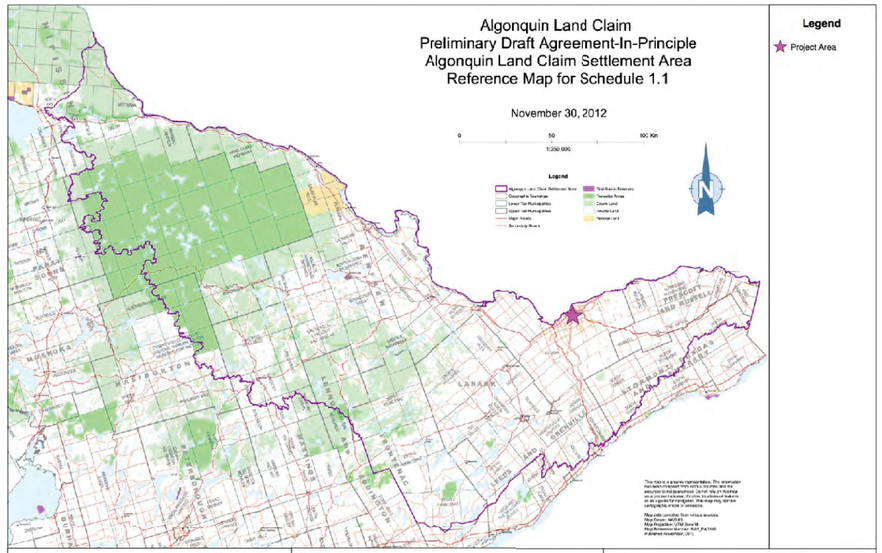
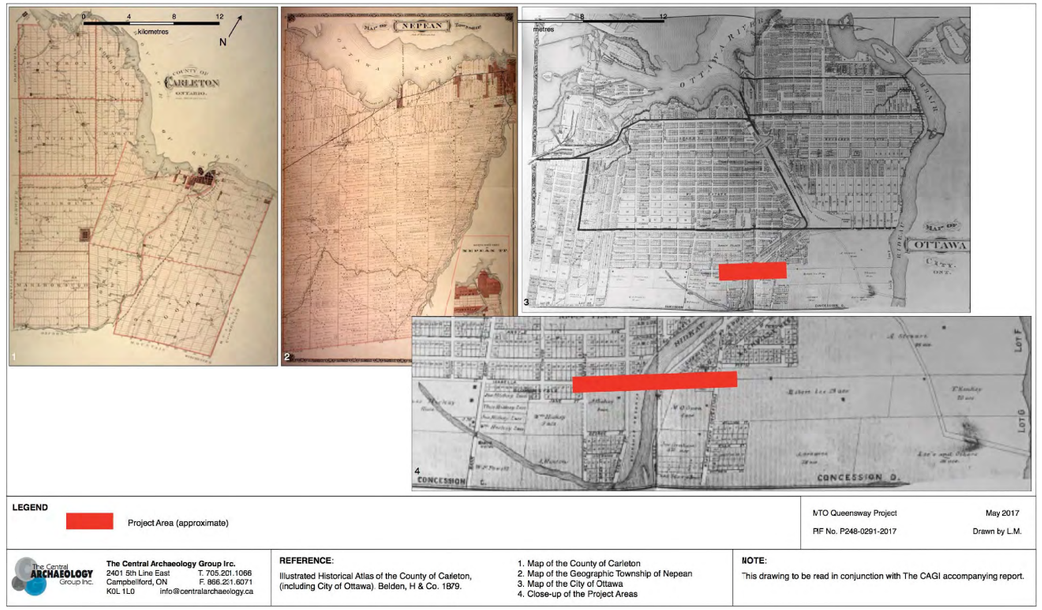
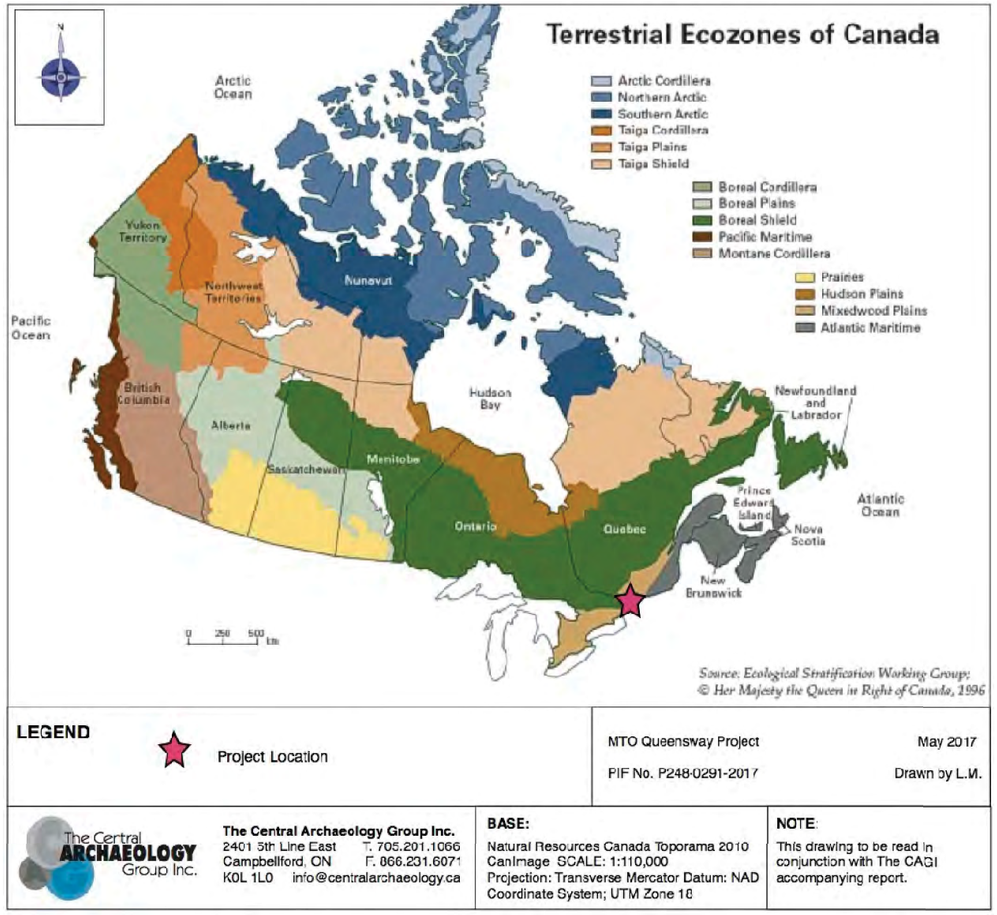


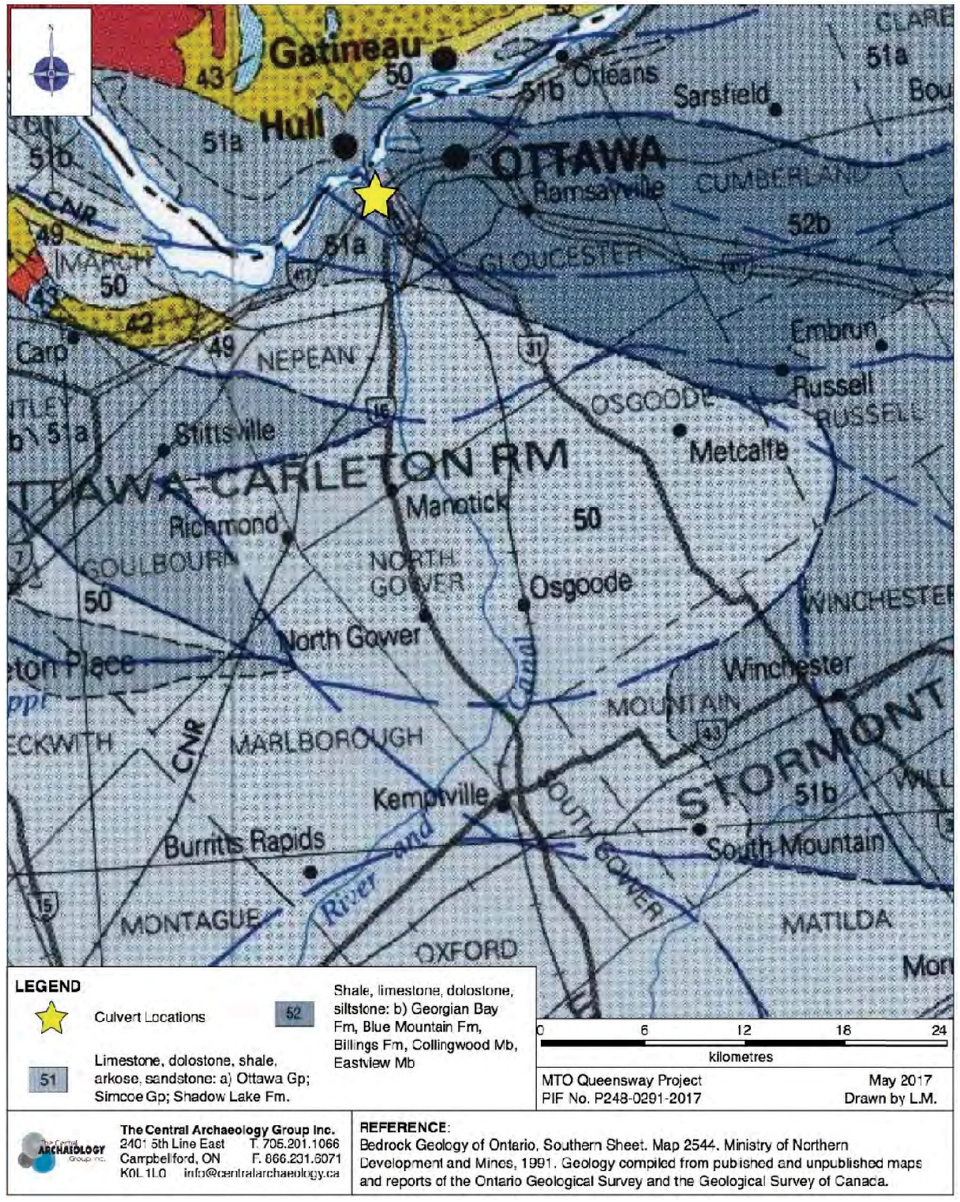
Map 2. Algonquin land claim settlement area (Ministry of Aboriginal Affairs 2012).



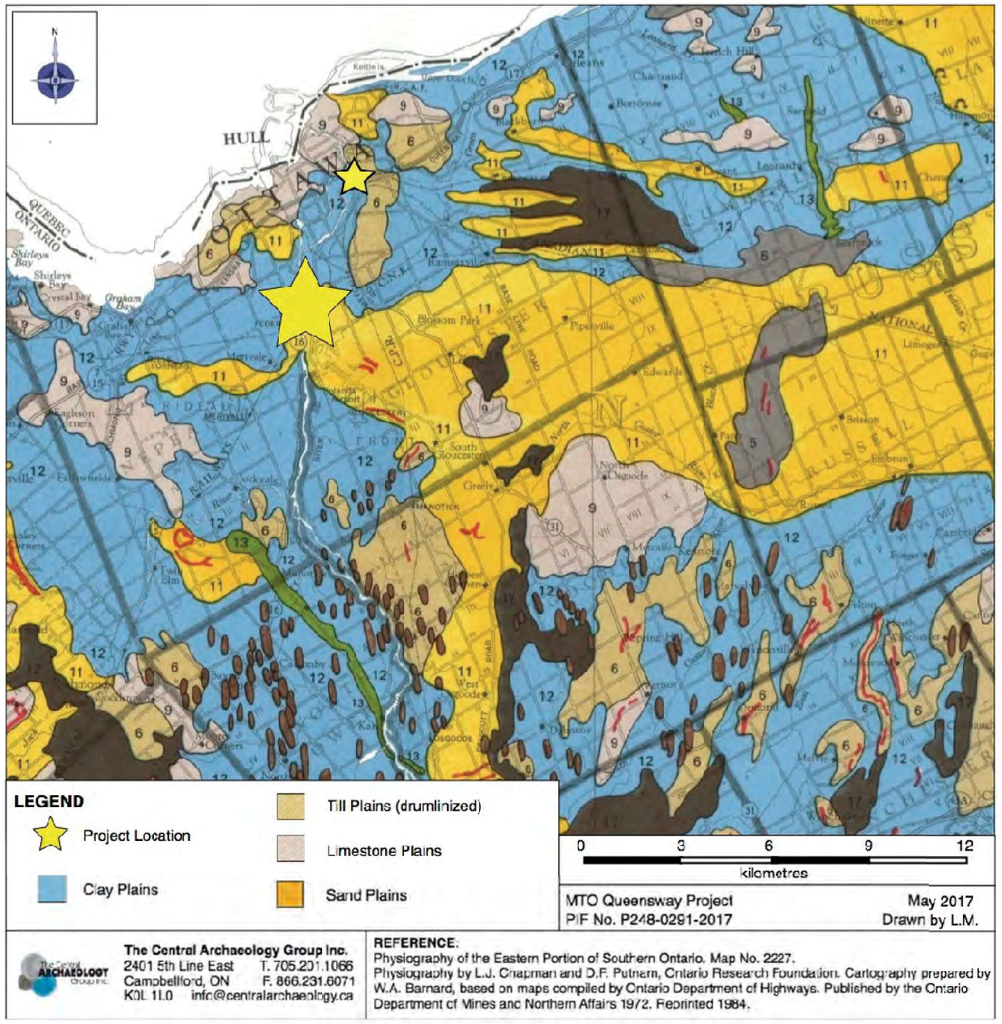
Map 3. Historical atlas maps of Stormont County, the Geographic Township of Cornwall and a close-up of the study area.



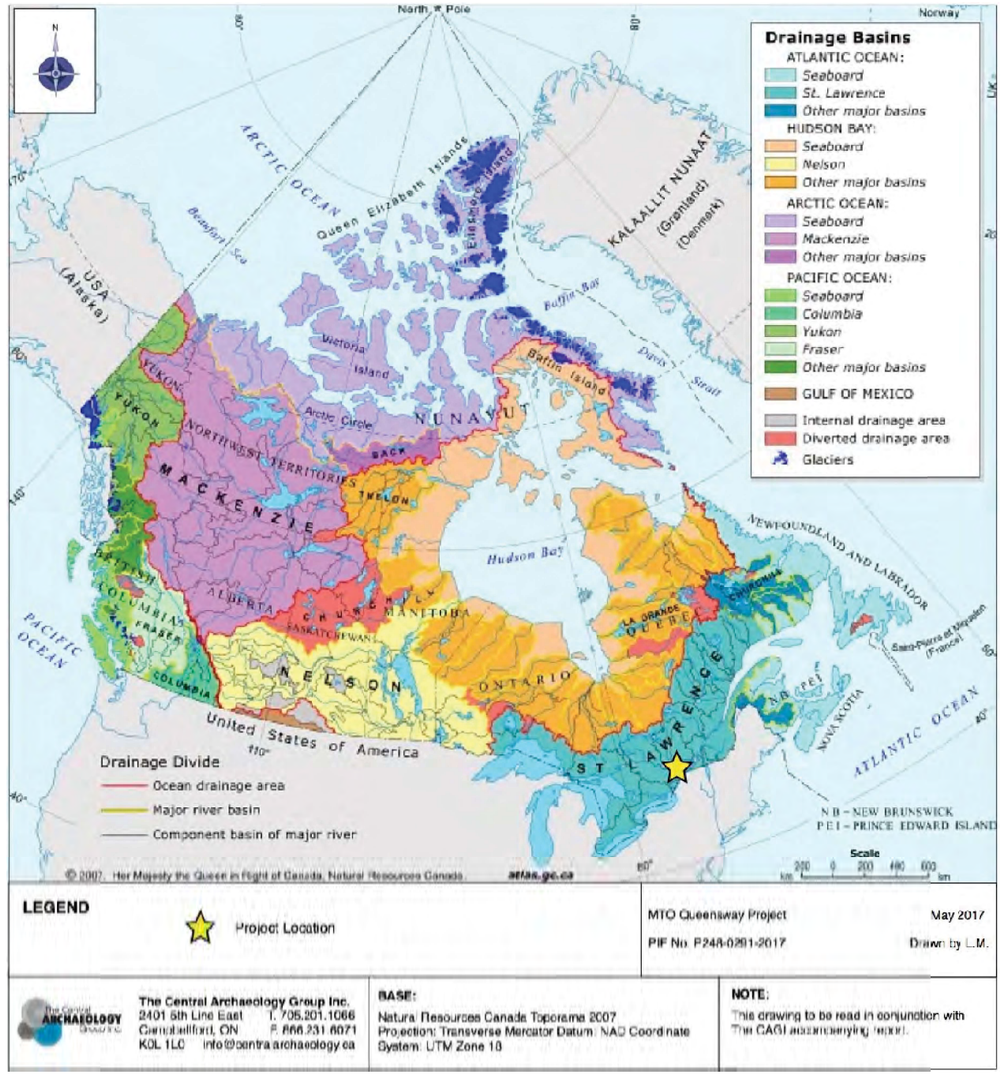
Map 4. Terrestrial ecozones of Canada (Ecological Stratification Working Group 1996).



Map 5. Bedrock geology of the project and surrounding area.



Map 6. Surficial geology of the project and surrounding area.



Map 7. Watersheds of Canada.



LEGEND

- Project Area 1
- Project Area 2
- Project Area 3
- Project Area 4
- Photograph Location and Orientation

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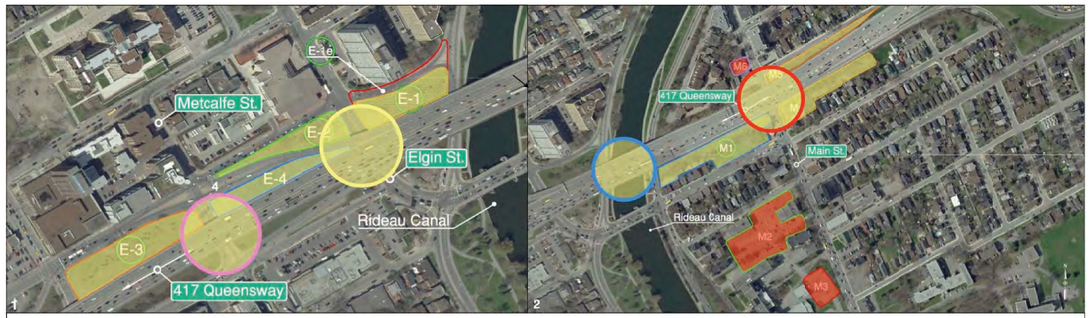
BASE:
Survey Plan courtesy of MTO

NOTE:
This map should be read in conjunction wit the accompanying report from CAGI.

MTO Queersway Project — May 2017
PIF No. P248-0291-2017 — Drawn by L.M.

Map 8. Site conditions.



LEGEND

- Project Area 1
- Project Area 2
- Project Area 3
- Project Area 4
- Archaeological Potential
- No Archaeological Potential: Extensively and Significantly Disturbed from Highway 417 Construction

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Survey Plan courtesy of MTO

NOTE:
This map should be read in conjunction wit the accompanying report from CAGI.

MTO Queersway Project — May 2017
PIF No. P248-0291-2017 — Drawn by L.M.

Map 9. Archaeological potential.

9.0 IMAGES

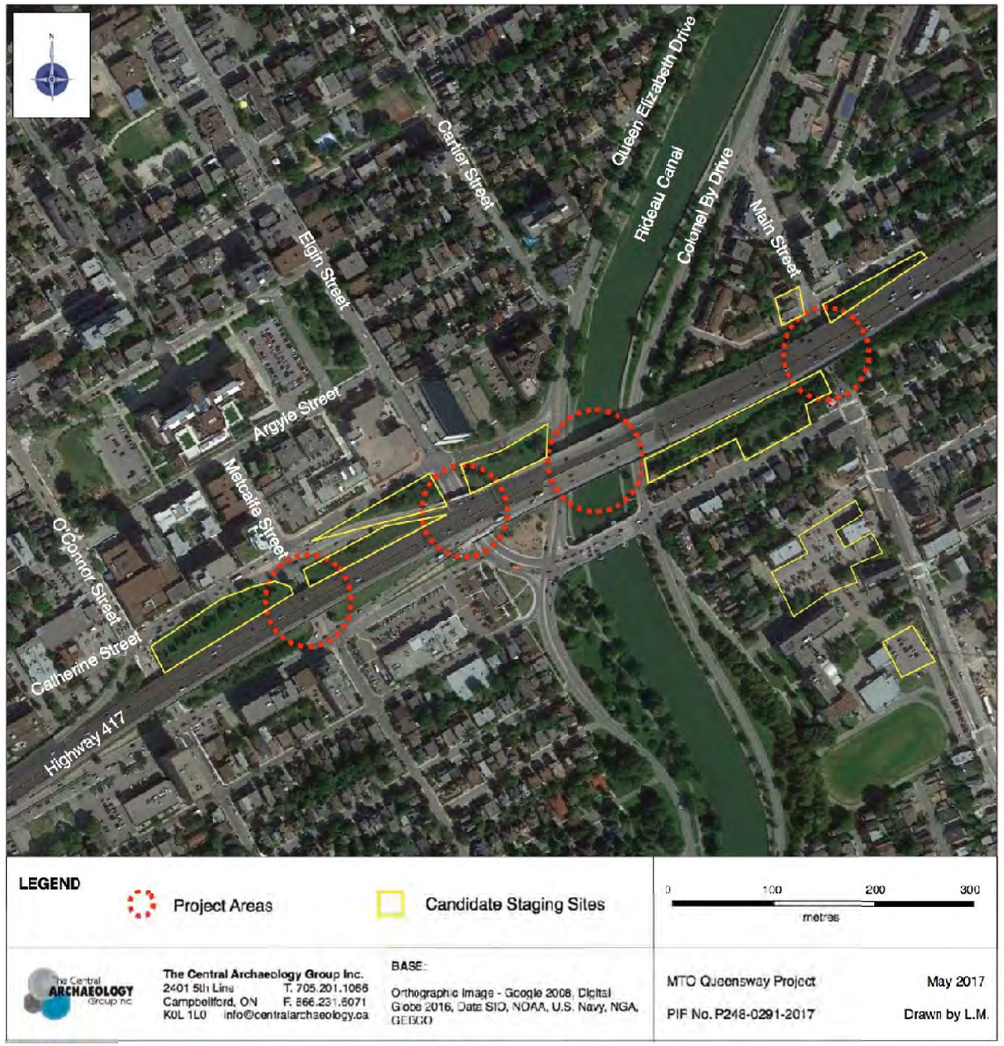


Image 1. Orthographic image of the project and surrounding area (Google Earth 2016).



Image 2. Orthographic images (1928, 1958, 1965 and 1976) of the project area (City of Ottawa @ 2017 Teranet).

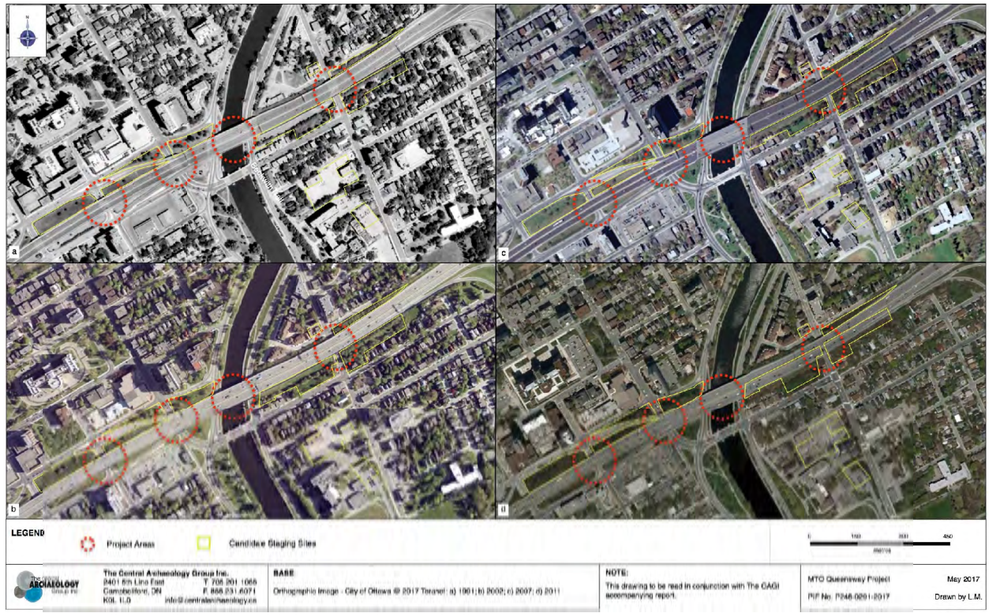


Image 3. Orthographic images (1991, 2002, 2007 and 2011) of the project area (City of Ottawa @ 2017 Teranet).


Image 4


Image 5



Image 6



Image 7



Image 8



Image 9

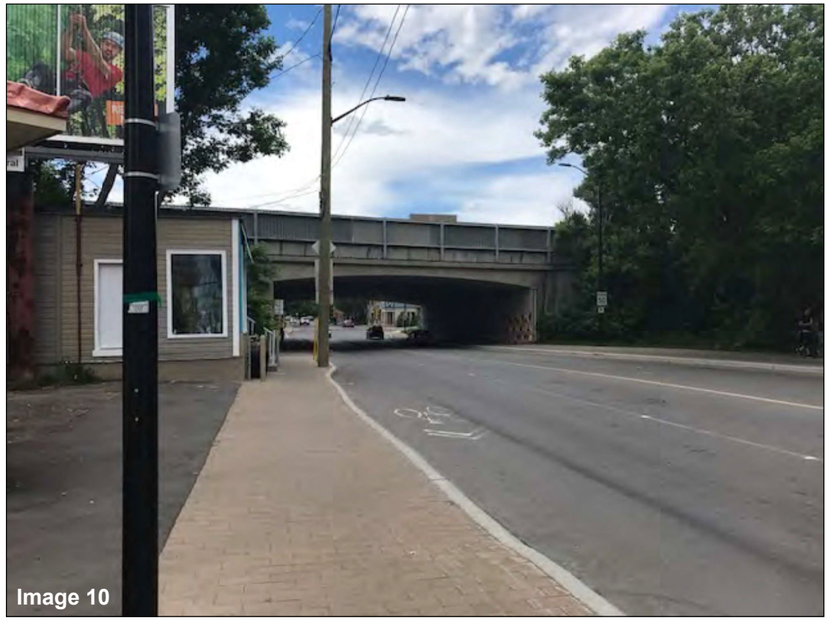


Image 10

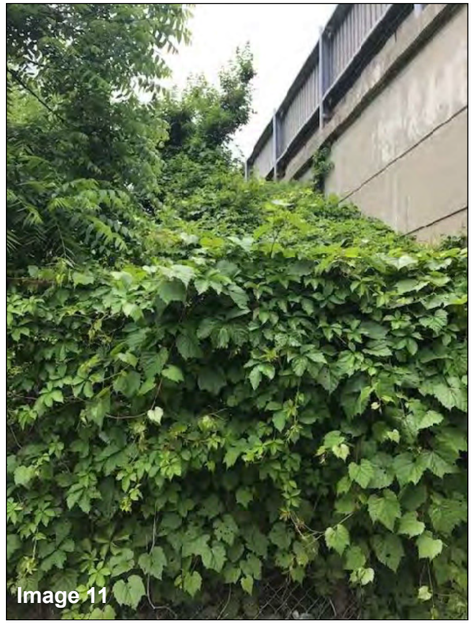


Image 11



Image 12



Image 13



Image 14



Image 15



Image 16



Image 17

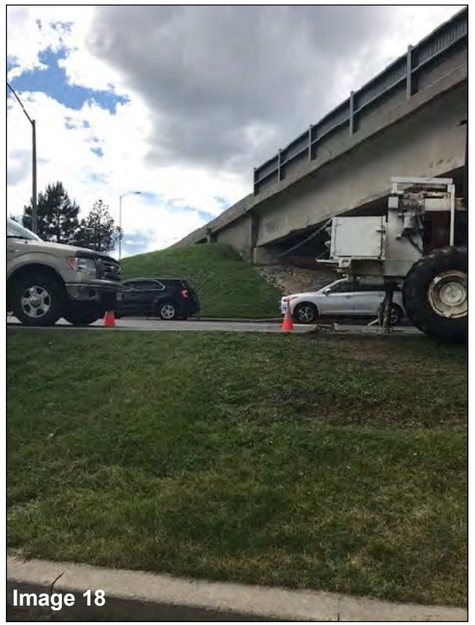


Image 18



Image 19



Image 20



Image 21



Image 22



Image 23



Image 24

10.0 GLOSSARY OF TERMS

A Horizon - mineral horizon at or near the ground surface (topsoil). May be dark brown due to accumulated humus (Ah) or grey or lighter brown when clay, iron and humus have been leached out (Ae). It is most commonly disturbed by human activities.

Archaeology - is the scientific study of the physical evidence of past human societies recovered through excavation.

Archaeological Site - is a place in which physical evidence of past human activity is preserved and which has been, or may be, investigated using the discipline of archaeology.

Archaic Period - in Ontario is characterized by the appearance of ground stone tools, notched or stemmed projectile points, the predominance of less extensively flaked stone tools, increased reliance on local chert resources, a lack of pottery and smoking pipes, and an increase in the numbers and sizes of sites.

Atlatl - a tool used to throw spears faster and with more accuracy. It consists of a short pole with a handle at one end and a hook for engaging the spear in the other.

B Horizon - below the A Horizon (subsoil). It could be enriched with iron (Bf), with iron and organic matter (Bhf), with organic matter (Bh) or with clay (Bt). If saturated for extended periods, B horizons show signs of gleying or mottling (Bfg, Btg, Bg).

Bioturbation - results in changes to the nature, form, and arrangement of archaeological deposits and sediments as a result of biological activity in the ground. This includes root action, animal activity, and the degeneration of organic matter.

BP - Before Present. Years before present (1950), used in dating sites and/or artifacts from an archaeological site.

Borden Number - a borden number is an identifier given to an archaeological site in Canada. It was created by Charles E. Borden and contains four letters and one to several numbers.

Burial Goods or Burial Paraphernalia - items interred with an individual (or group) burial that may give clues to their social and/or economic and/or political position within their culture.

Chert - is a fine-grained, sedimentary rock, similar to flint. In antiquity, chert was one of the universally preferred materials for making stone tools.

Contact Period - refers to the period when European and First Nations peoples were first exposed to one another. In Ontario from 450 BP to 200 BP.

Cultural Resources - are sites, structures, landscapes, and objects of particular importance to a culture or community.

Diagnostic - a distinguishing characteristic serving to identify or determine the artifact.

Disarticulated - this occurs when bones are found separated at the joints.

Disturbed - refers to a study area that has recently been excavated or altered from its original characteristics.

Ecozone - classification system that defines different parts of the environment with similar geography, vegetation, animals, climate, topography and water sources.

Environmental Assessment Act - sets up a process for reviewing the environmental impact of proposed activities prior to the granting of government funds.

Erratic - large rock or boulder that differs from the surrounding rock and is believed to have been transported a long distance as a result of glacial action.

Excavation - is the systematic digging and recording of an archaeological site.

Flake - is a fragment of stone removed from a core or from another flake.

Feature - is a collection of one or more contexts representing some human activity that has a vertical characteristic to it in relation to site stratigraphy.

Fluted - grooved or channeled. A fluted point is a projectile point which has had one or more long thinning flakes removed from the base along one or both faces.

Glaciofluvial - sediments laid down by glacial meltwater action (i.e., rivers or streams).

Ground Stone - is a stone artifact shaped by sawing, grinding, and/or polishing with abrasive materials.

Historic Period - the period when written records become available.

Holocene - the most recent period. Began approximately 10,000 years ago following the end of the Pleistocene.

Knap - to shape a piece of stone material by striking it at specific angles. Term used by archaeologists to denote the manufacture of a lithic tool.

Lanceolate - lance-shaped, much longer that wide, widened at or above the base and opening to the apex.

Lithic - stone, or made of stone.

Maize - also known as corn, is a cereal grain that was first domesticated in Mesoamerica and then spread throughout the American continents.

Mitigation - measures undertaken to limit the adverse impact of construction methods on archaeological sites or cultural resources.

Ochre - used as a natural pigment, colour is commonly reddish-brown to yellow.

Ontario Heritage Act - allows municipalities and the provincial government to designate individual properties and districts in Ontario as being of cultural heritage value or interest.

Palaeoamerican Period - first evidence of human occupation in Ontario. This period is characterized by groups hunting large game and seasonal occupation along shore environments.

Pleistocene - an epoch within the Quaternary Period which began approximately 2,000,000 millions years ago and ended approximately 10,000 years ago. Immediately preceded the Holocene Period.

Projectile Point - is an artifact used to tip an arrow, atlatl dart, spear, or harpoon. Usually made of chipped or ground stone, however, some are also made of copper.

Stage 1 Background Study - The purpose of a Stage 1 assessment is to investigate the cultural land use, archaeological history, and the present conditions of a property. The majority of the Stage 1 process is conducted in the office and involves the examination of records such as historic settlement maps, land titles, and documents, historical land use and ownership records, primary and secondary documentary sources, and the Ministry of Culture's archaeological site database. The study may also involve interviews with individuals who can provide information about the property and consultation with local First Nations communities. The background study is followed by a property inspection to examine geography, topography and current conditions, and to determine the potential for archaeological resources. Stage 1 background research is usually completed in conjunction with a Stage 2 property survey.

Stage 2 Property Survey - A Stage 2 property survey is undertaken if the Stage 1 background study finds that a property retains archaeological potential. It involves the documentation of archaeological resources by collecting artifacts and mapping cultural features. Depending on the nature of the property environment, two methods are employed in the survey: 1) pedestrian survey on cultivable properties, and; 2) test-pit survey on properties not cultivable due to tree growth, rock content, etc.

Strata - are layers of rock, soil, cultural material, etc. with internally consistent characteristics that distinguish contiguous.

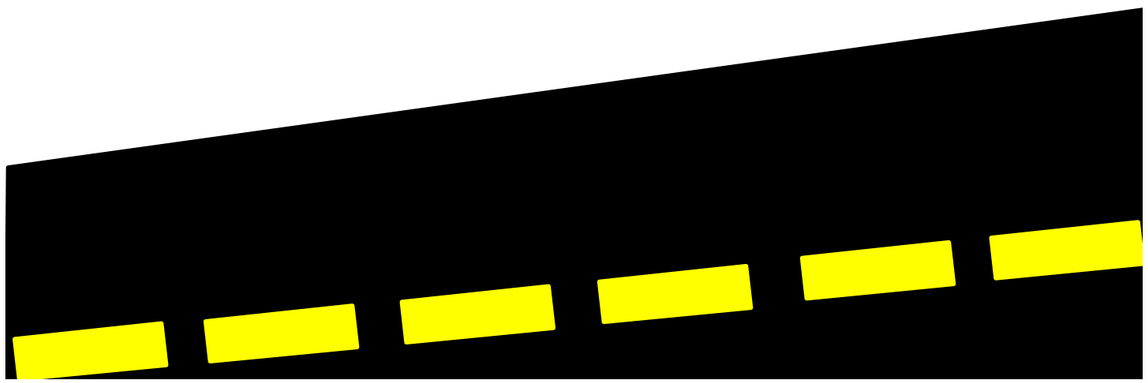
Stratigraphy - the layering of deposits on archaeological sites. Cultural remains and natural sediments become buried over time, forming strata.

Subsistence - obtaining food and shelter necessary to support life.

Survey - is used to accurately determine the terrestrial or three-dimensional space position of points and the distances and angles between them.

Woodland Period - is a period of time following the Archaic Period. It is sub-divided into Early, Middle, and Late.

Appendix H2
Underwater Archaeological Assessment



UNDERWATER ARCHAEOLOGICAL ASSESSMENT, PORTION OF RIDEAU CANAL UNDER THE OTTAWA QUEENSWAY HIGHWAY 417 BRIDGE AND ADJACENT UPSTREAM AND DOWNSTREAM AREAS
CITY OF OTTAWA
PART OF FORMER CITY OF NEPEAN
HISTORIC NEPEAN TOWNSHIP
HISTORIC CARLETON COUNTY

Prepared for

BT Engineering Inc.
and
Parks Canada

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Permit #RIC2018-27677
May 2nd, 2018
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Executive Summary

Scarlett Janusas Archaeology Inc. was retained by BT Engineering to conduct an underwater archaeological assessment for a section of the Rideau Canal under the Ottawa Queensway Highway 417, and adjacent upstream and downstream reaches, where there is proposed work planned to replace the aging Highway 417/Queensway Bridge which spans the Rideau Canal north of Hawthorne Avenue between Queen Elizabeth Drive and Colonel By Drive.

The project is currently in the preliminary design phase, scheduled to be completed in December of 2018. Following this, there will be a detailed design and contract preparation phase; however, probable construction year will be 2025.

A total of three bridges have been erected over time at the site. The first was the early railway swing bridge built in 1882 by the Canadian Atlantic Railway (CAR). This bridge was replaced in 1912 with a similar bridge built by the Grand Trunk Railway (GTR). The current bridge spanning the Rideau Canal in this location was built in by MTO in 1965.

Background research provided additional information regarding the construction of the swing bridge, and of an accident in the Rideau Canal at this location.

The background research was complemented by a field visit where photographs of the Rideau Canal section were taken in an effort to determine if there were any visible signs of the former swing bridges. There was no tangible evidence of any of the former swing bridges on the canal walls, or in the canal (at draw-down water level) in the main section or the adjacent upper and lower reaches.

No in-canal work was conducted due to the level of contamination present in the sediments.

Based on the background research, and the current condition of the canal, the following recommendations are made:

1. There is no requirement for further archaeological assessment of the Study Area, including the adjacent upper and lower reaches.
2. If development is approved by Parks Canada, and any archaeological resources are located during the construction phases, all work is to be halted and Parks Canada immediately notified. Based on their investigation of the “discovered” archaeological features/material, Parks Canada will recommend next steps to the proponent.

This report has been submitted to Parks Canada in fulfillment of the requirements of the Parks Canada issued permit.

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Project Personnel

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Historian	Gina Martin
Technical Assistance	Susan Bazely John Grenville

UNDERWATER ARCHAEOLOGICAL ASSESSMENT PORTION OF RIDEAU CANAL UNDER THE OTTAWA QUEENSWAY, HIGHWAY 417 AND ADJACENT UPSTREAM AND DOWNSTREAM AREAS CITY OF OTTAWA PART OF FORMER CITY OF NEPEAN HISTORIC NEPEAN TOWNSHIP HISTORIC CARLETON COUNTY

1.0 INTRODUCTION

1.1 Project Description

The project is currently in the preliminary design phase, scheduled to be completed in December of 2018. Following this, there will be a detailed design and contract preparation phase; however, probable construction year will be 2025 (Gord Bell, BT Engineering, personal communication, May 1, 2018).

This archaeological assessment has been conducted as a consideration of the "potential realignment of the canal walls to their pre-1963 Highway 417 bridge alignment, essentially reversing the realignment that was undertaken in 1965, to support the design evolution of the two preliminary bridge design options" (Festarani 2017).

Parks Canada required that an archaeological assessment of the Study Area (under the Ottawa Queensway, Highway 417, and adjacent upper and downstream reaches) be conducted to complete the Environmental Assessment (Figures 1–6). The purpose of the archaeological assessment is to confirm the presence of, or define the limits of archaeological resources in-water.

The proposed new bridge design preference (by Parks Canada) (ibid) is a bridge structure with no in-water piers. In order to support the Highway 417 traffic, it may be necessary to construct in-water piers. Vertical clearance for the bridge, in order to obtain safe navigation, is a minimum of 6.7 metres, with a minimum width of 25 metres.

1.2 Current Location and Environment

The current Queensway Bridge (Highway 417) has two sets of six piers in the navigation channel. This section of the Rideau Canal is a man-made, dug channel. The Study Area lies wholly within Federal jurisdiction.

The current Queensway Bridge, as well as the two historic railway swing bridges (no longer extant), spanned the Rideau Canal north of Hawthorne Avenue between present day Queen Elizabeth Drive and Colonel By Drive. As of late 2017, the section of the Rideau Canal between the downtown locks and Bronson Avenue is now included on the

Federal Contamination Sites inventory maintained by the Federal Government of Canada. The designation came about following testing in the area during 2016 to mid-2017 which showed the presence of lead, cadmium and polycyclic aromatic hydrocarbons which are known to cause cancer. Decades of carbon producing coal burned by locomotives crossing the bridge, contaminants tossed into the water by a lead paint factory and boats hauling industrial goods along the canal have all contributed to the contamination of the water. The Ottawa Silicate Brick Company stood for many years adjacent to the bridge near Hawthorne Avenue. Coal driven ovens used in the drying process of the manufactured bricks would also have led to contamination of the area.

Email correspondence with Jonathan Moore, Parks Canada, confirmed that testing within the canal itself (limits of the Study Area) would not be required due to the level of contamination (Appendix A).

The canal depth is usually 2.6 metres (except at winter draw-down).

Figure 1: Study Area (courtesy of BT Engineering)

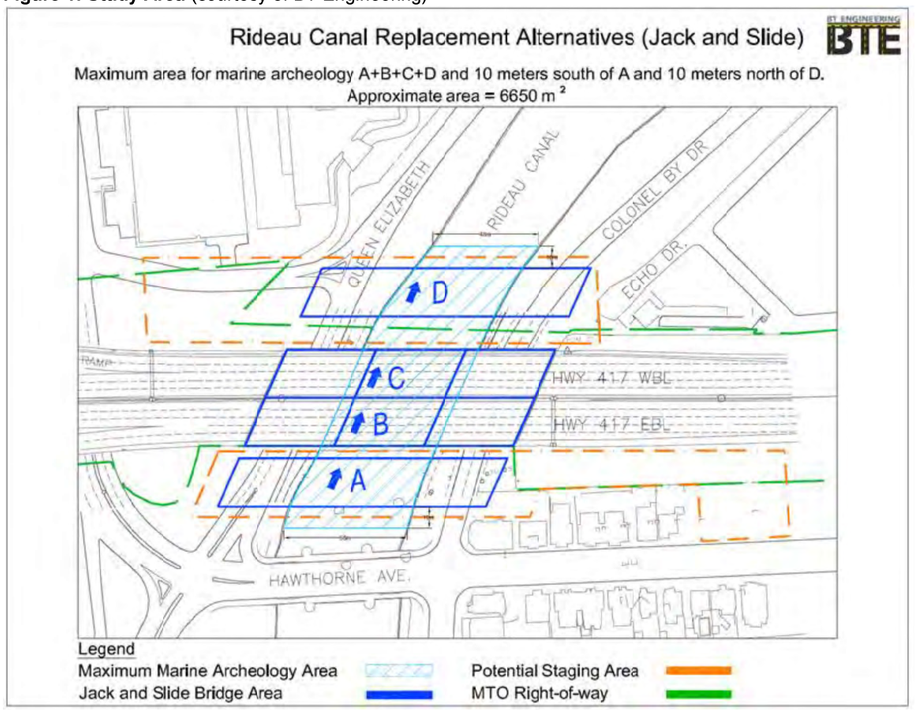


Figure 2: Looking North towards the Ottawa River (courtesy of BT Engineering)



Figure 3: Looking South towards Hawthorne Avenue (courtesy of BT Engineering)



Figure 4: Land and Right-of-Way Owned by MTO (courtesy of BT Engineering)

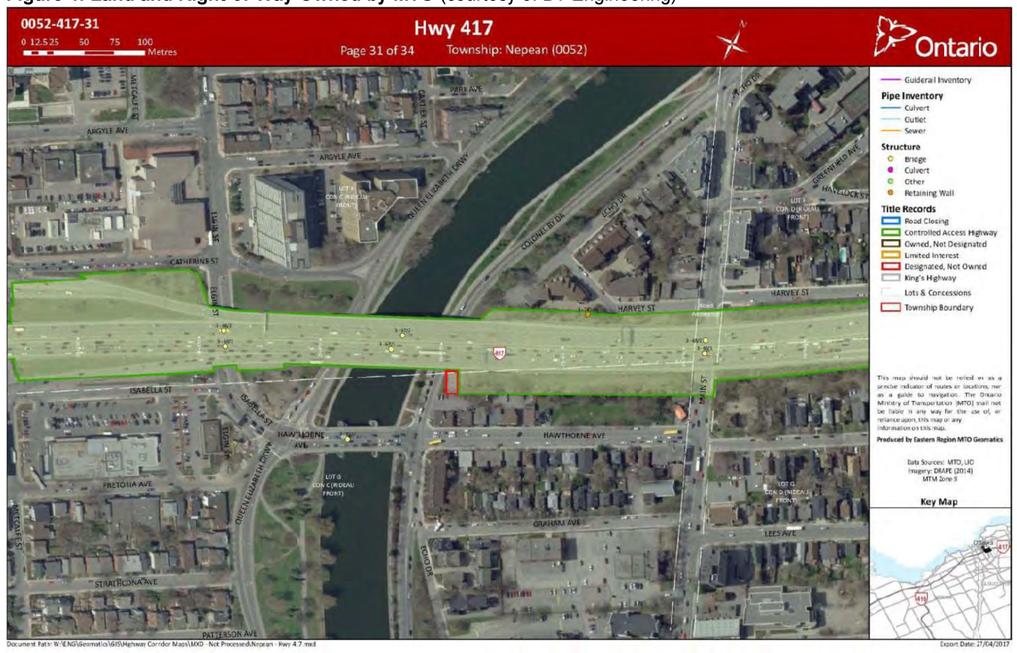


Figure 5: Study Area (courtesy of BT Engineering)

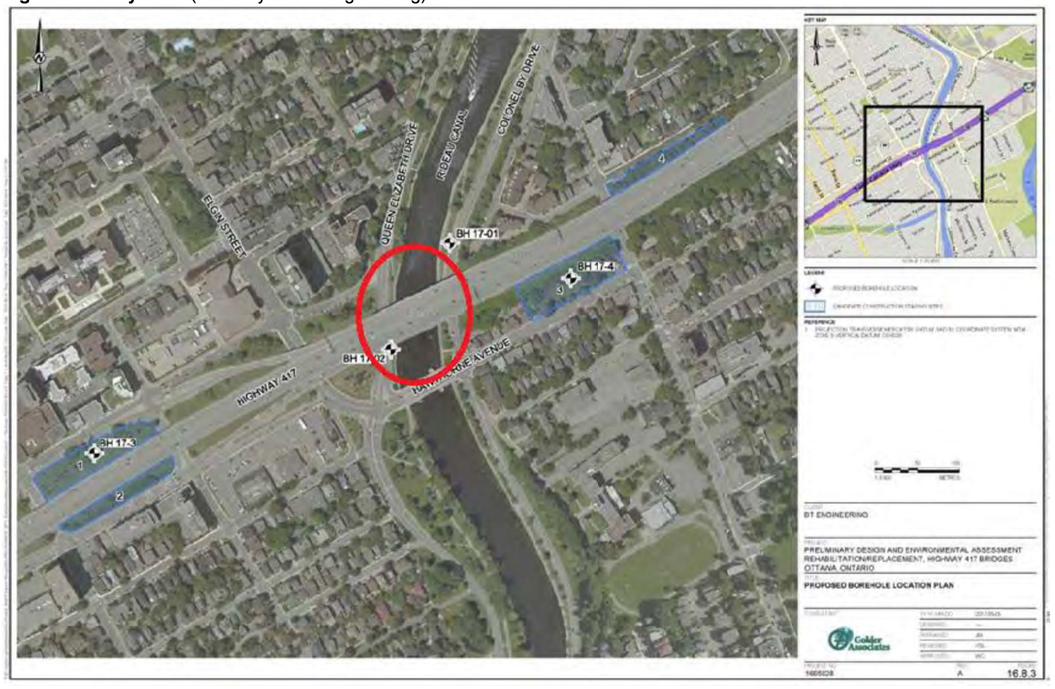
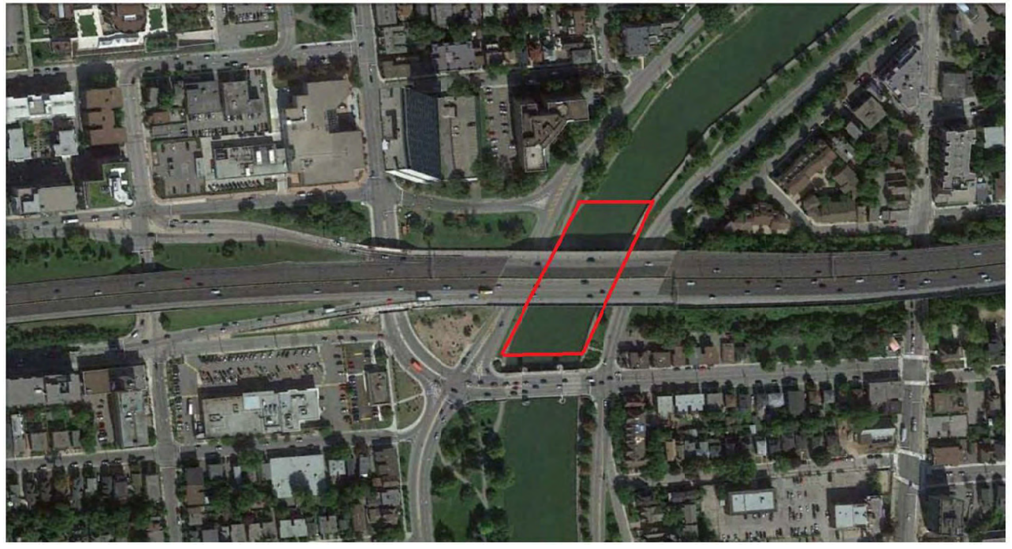


Figure 6: Close-up of Study Area (courtesy of BT Engineering)



2.0 Methodology

2.1 Background Research

Background research was conducted using the local, provincial and national archives, and the railway archives. In addition, some material was provided of the Study Area by Jonathan Moore, Parks Canada. Both primary and secondary resources were used to obtain the history of this section of the Rideau Canal, and wherever possible, imagery was obtained to augment the same.

2.2 Property Visit

A property visit was conducted on April 22, 2018 under sunny skies, while the canal was still at its' draw-down level (winter level). An examination of the walls/structure of the canal section and its' upper and lower adjacent reaches was conducted visually and recorded using a digital colour photograph camera. All photographs were recorded as to the location of the shot and the orientation of the same (Appendix B). These were then transferred to an aerial map (see Section 3.0).

3.0 Results

3.1 Background Research

3.1.1 General

Until about ten thousand years ago, the Ottawa/Rideau area, including the current Study Area, lay submerged beneath the Champlain Sea, a salt body of water formed about 12,000 BCE after the retreat of the continental glacier. The sea covered lands in the indentation of the Saint Lawrence Lowlands from Quebec City west to about Brockville, Ontario and north to the Ottawa Valley. The Champlain Sea endured for about two thousand years until the water became too fresh and marine organisms were unable to survive. At about the same time, the shorelines began to recede, leaving large deposits of marine clay throughout the area.

It has been demonstrated through archaeological investigation that the first Indigenous populations were present in the Ottawa Valley about 6500 BCE. Nomadic hunters and gatherers took advantage of the plentiful animal life as well as the natural supply of water along the Ottawa River and its tributaries. These people were the predecessors of the Algonquin, the Indigenous group occupying the area when the first Europeans began to explore the interior of Canada. It is known that, in 1610, the French explorer Etienne Brulé navigated the Ottawa River with the assistance of Algonquin guides as he sought fur routes for Samuel de Champlain. In 1615, Champlain visited the area during which time he secured an alliance with the Algonquin in the fur trade against the English who had befriended the Iroquois bands. The fur trade marked fierce wars as differing Indigenous populations battled each other to provide furs for the European traders.

During the mid-1700s, what is now Ontario was still part of the Province of Quebec. On July 24, 1788, the Governor General to the Crown, Lord Dorchester, issued a proclamation dividing Quebec into a series of geographic regions. The future Carleton County fell within the Eastern District, extending from the mouth of the Gananoque River to the Quebec boundary. In 1792 the Province of Quebec was divided into Upper and Lower Canada at which time Lord John Graves Simcoe assumed the government of Upper Canada. In 1798, the district boundaries were realigned with a portion of the Eastern District severed off to create the Johnstown District which consisted of the future counties of Carleton, Grenville and Leeds. Carleton County was created in 1800 from parts of Dundas and Grenville Counties. Carleton County was named for Guy Carleton who was the First Baron of Dorchester. In 1822, Carleton County separated to form the Bathurst District which, in 1838, became part of the new Dalhousie District. When the district system was eliminated in 1849, the Dalhousie District became Carleton County.

Carleton County had ten townships including Nepean Township, the location of the Study Area. Nepean was first established in 1792, becoming part of Carleton County in 1800. The initial township survey indicated Nepean with an area of 55,496 acres. Originally known simply as Township D, Nepean was named for Sir Evan Nepean who was the British Secretary of State for the Home Department. The first settler to the township was Jehiel Collins of Vermont who located at various sites near the Ottawa River. The township was incorporated in 1850 and the first township meeting was held January 7, 1850 at current day Bell's Corners. Nepean was later incorporated as a city in 1978 and amalgamated with Ottawa in 2001.

3.1.2 General History of the Rideau Canal

Ottawa was founded as a community in 1826 and was known originally as "Bytown" after its founder, Lieutenant Colonel John By (Figure 7). Lieutenant Colonel By was born August 7, 1779 in Lambeth, Surrey, England where he studied at the Royal Military Academy and was commissioned in the Royal Artillery, later transferring to the Royal Engineers. In 1802, he was posted to Canada where he worked on the fortification of Quebec City. He returned to England during the Napoleonic Wars where he served under the Duke of Wellington. He retired from the military in 1815 but, owing to his Canadian engineering experience and in response to rumoured threats of further invasions from the United States of America (USA), he was recalled and sent back to Canada to work on a marine military route connecting Montreal to Kingston. To this end, he supervised the design and construction of the famed Rideau Canal (part of the Study Area).

Figure 7: Colonel John By unknown artist…Parks Canada



It was actually Samuel de Champlain who inadvertently gave the canal system its name. Rideau is a French word meaning "curtain". Champlain believed that the twin waterfalls where the Rideau and Ottawa rivers met resembled a set of curtains, and recorded this observation in his journals.

Talk of a canal system first came to light during the War of 1812 when it was rumoured that the Americans were planning to invade Canada via the St. Lawrence River, a move that would shut down all communications between Montreal and the naval base at Kingston. Plans for the canal started in 1816 when Lt. Joshua Jebb of the Royal Engineers

was given the task of surveying a route from Lake Ontario to the Ottawa River. Once Lieutenant Colonel By arrived from Europe in 1826, thousands of men were hired for construction and were supervised throughout the project by the Royal Engineers. The canal opened in 1832, but was not fully completed until 1834 (Keefer 1893).

The canal system was 202 kilometres long with approximately 19 kilometres of the canal being man-made. A series of locks and blockhouses appeared along the system, a design which is considered unique even to this day. Although it has been recorded that several hundred workers died during the construction phase, most of these deaths were due to disease and only seven were recorded as accidents resulting in death. Once the canal was completed, many workers were hired as lockmasters.

"Colonel By had argued that one of the chief benefits of the Rideau Canal would be that [squared cut] timber could be cut and shipped from the banks of the Rideau River and adjoining lakes. Indeed, even before its official opening, timbermen were using the Canal. In 1832, a quarter million cubic feet of oak and another quarter million of pine, were cut and rafted out along the Rideau waterway" (Historical Planning and Research Staff 1981: 103). The period of squared cut timber was from 1812 right into the 1870s. This was then overlapped, and overtaken, by the trade in sawn timber, which flourished from 1832 to 1933 (ibid: 104).

Of major importance to the Rideau Canal was its use for transportation and communications. Water transportation dominated until the 1850s, then the railways had an impact in the latter half of the 19th century to about 1918, and then it was superseded in importance by the use of vehicles.

"For a decade [1835 – 1847] the Rideau Canal provided a key link to the most important transportation network in the Province….

Upper Canadians had refused to help pay for the construction of the Rideau Canal, believing it to be strictly a benefit to the military. The commercial interests of the Province instead favoured the canalization of the St. Lawrence River … The British at first proposed to construct the Rideau Canal as a simple bateaux channel that would have been adequate for military needs. Colonel By, however, recognizing the commercial potential of the route, succeeded in having it built to a width of thirty-three feet, large enough for steamboats" (ibid: 135-136).

The Rideau Canal lost its importance as a principal transportation route following the canalization of the St. Lawrence River. However, it remained important to local trade – being the route for transportation of "agricultural, mineral, and forest industry products" and withstood the competition of railways. By the 1930's, the "cheese boats" and lumber barges essentially no longer plied the Rideau Canal waters. Instead, there was

an increase in passenger trade, and the Canal was marketed for scenic excursions (ibid: 138).

The first vessel to navigate the entire length of the canal was the steamboat **Rideau** owned by Robert Drummond. It departed from Kingston on May 22, 1832 and arrived in Bytown on May 29th. Lieutenant Colonel By, along with his wife and children, were passengers aboard the **Rideau**. Lieutenant Colonel By went seriously over budget, and no doubt, as a result, he was recalled back to England where he faced inquests regarding his spending. He received no penalties: his work was never properly recognized until well after his death on February 1, 1836.

In 1925, the Rideau Canal was declared a National Historic Site of Canada and, in 2007, a UNESCO World Heritage Site. In 2000, the Rideau River was named a Canadian Heritage River.

3.1.3 The Study Area

A Stage 1 archaeological assessment (land) was conducted by the Central Archaeology Group Inc. (2017) and the previous MTO Environmental Assessment and Planning Study (2007) but these two studies did not address the archeological concerns of the canal itself as required by owner of the Rideau Canal, Parks Canada. In accordance with the request by Parks Canada, this Underwater Archaeological Assessment has been undertaken.

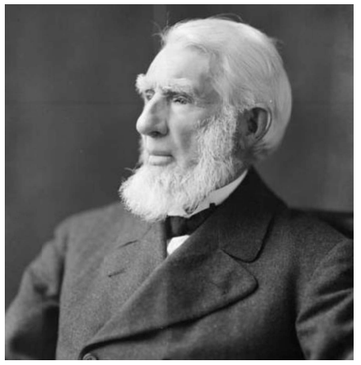
The City of Ottawa, as it is known today, owes its existence to the Rideau Canal and Lieutenant Colonel John By. During construction of the canal, it was imperative that there be a home base for the workers and for the Royal Engineers. Barracks were built for the Engineers at the site just behind the current Parliament Buildings known as Barracks Hill. At this site, the Royal Engineers built three barracks, a hospital and some ancillary buildings. Lieutenant Colonel By believed the site would make an excellent military base and drew up extensive plans for it. However, his idea was not approved and a full base was not built. The barracks along with many other bunkhouses built for the workers gave rise to the city known today as Ottawa.

The first swing bridge at the Study Area was constructed during the spring and summer of 1882 by the Canadian Atlantic Railway (CAR). This was a small regional company established in 1880 by John Rodolphus Booth, a lumber baron and business visionary who, by 1879, held one of the largest lumber conglomerates in North America. Key to his success was his ability to transport his lumber smoothly and efficiently without any interruption to production. If he was to continue as the most successful lumber man in the Ottawa Valley he felt that having a well thought out railway system was a complete necessity, both as a method of transport and a way to reach other markets (Figure 8). Together with his partners, William Perley and G. C. Nobel, he began by purchasing

and merging two smaller railway charters, the Montreal and City of Ottawa Junction Railway Company and the Coteau and Province Line Railway and Bridge Company. This merger was the beginning of CAR.

Construction on the new track began in 1880 with trains coming through Ottawa by 1882. The new company was successful from the beginning. Owing to the fact that Booth insisted on footing most of the bill for the new track himself meant that there was little to no debt after construction. His lumber also provided an immediate customer for the company. Later he would obtain a charter for another line running into Vermont, hence taking his business into United States markets. Eventually the company no longer catered to just the lumber business but also to tourism and pleasure trips with regular train service taking riders in and out of the Ottawa Valley.

Figure 8: John Rodolphus Booth



Early in its charter, the Canadian Atlantic Railway built two rail bridges, one across the Rideau River and the other across the Rideau Canal at Ottawa. The latter was the first swing bridge spanning the Study Area. Part of Order-in-Council PC 1882-424 issued March 8, 1882 read as follows:

Approved application by the CAR for authority to cross the Rideau Canal by means of a swing bridge to be constructed at a point near the City of Ottawa, Stewarton, shown on a plan submitted.

The Chief Engineer of Government Railways further stated that the approach of the bridge on the Stewarton side had to be made either of open work or have openings sufficient to allow water to flow freely. There were also to be properly guarded piers for the bridge when open and the superstructure of the bridge had to correspond to the centreline of the Rideau Canal. Finally, the opening for a navigable channel on the sides of the centre pier for the swing bridge was not to be less than forty feet wide. The criterion was quite handily met with rail yards and wharves eventually built on both sides of the canal. A railway station was also built just west of the bridge on Elgin Street. Referred to for many years as simply the “Elgin Street Station”, the site would serve for a time as the head office for the CAR (Figure 9).

The contract for construction of the bridge was awarded to John O’Leary, a well-respected contractor in Ottawa who, at the time, was also serving as Alderman for the St. George Ward. The contract for the iron work was given to the Toronto Bridge Company. A perusal of the Ottawa newspapers of the day gives a very detailed

account of the progression of construction. The Ottawa Free Press edition for March 4, 1882 reported the awarding of the contract to Alderman O'Leary who reported on April 14th that work was progressing well. He further reported to the Ottawa Citizen on May 23rd that the contract will be "easily met" within the time frame assigned. Two days later it was reported that the piers were almost completed and preparation for the rest of the work was moving rapidly. The bridge had a centre pier and two side abutments. The material for the completion had almost entirely arrived and placed on the ground. The July 15th edition of

Figure 9: Elgin Street Station – Canada Atlantic Yard Office – 1886



the Citizen recorded that 15 cars loaded with iron work had already arrived by rail with three more to come. August 2nd was an important day with the first train engine crossing the bridge. As a test run, Engineer Joe West successfully drove the "Georgia" across the bridge. Several days later, there was a further test run when an engine and three cars loaded down with heavy cargo successfully crossed the bridge. This was a test to see how the new bridge handled a heavily weighted train (Figures 10 to 11).

Figure 12, although not provided with a date in the Library and Archives of Canada, was also a photograph taken by Topley. Given that Figure 11 is one of Topley's photographs, it is likely that this photograph in Figure 12 also dates to the same time

period. In Figure 12, is a view from the swing bridge (not certain if this is upper or lower adjacent reach) showing many boat houses or related marine/railway infrastructure.

Figures 13 and 14 illustrate a map dating from 1894 and another photograph of the swing bridge with the bridge master. It should be noted that the bridge master cranked the bridge open and closed by means of a hand wheel in the centre of the bridge. This was common practise where the availability of steam, compressed air and electricity were not available due to the distance from a locomotive round house. The well balanced, lubricated and maintained swing bridge and remote turn table centre pivots allowed man power to be used to turn them. (Exporail, Canadian Railroad Museum, Montreal, Saint-Constaint /Delson, South Shore of Montreal – G Bell BT Engineering, personal communications April 30, 2018)

Figure 10: Opening Day – Swing Bridge – Sept. 1882 (LAC PA12201)

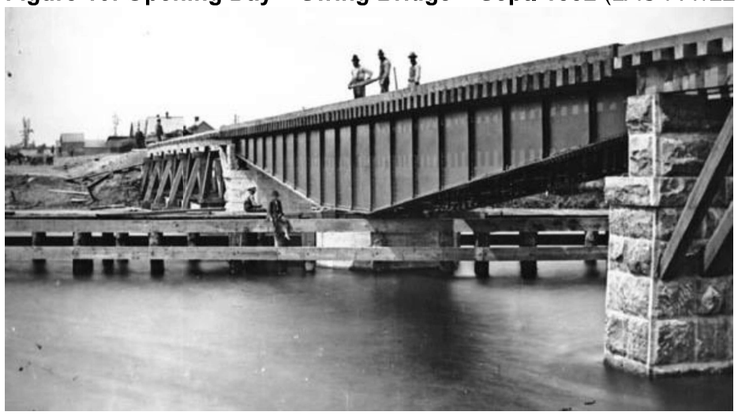


Figure 11: Photograph by William Topley of Topley Studio (1902) LAC PA013244



Figure 12: Possible Boat Houses by Swing Bridge (no date) (MIKAN 3318514)



Figure 13: Ottawa Map 1894 – Archives of Ontario



Figure 14: Circa. 1890 - semaphore signal in the centre with the bridge master (LAC – Ballantyne)



The opening of the new bridge coincided with the maiden excursion of the Canadian Atlantic Railway which commenced September 30, 1882 at 8:00AM. The trip was attended by invitation only. About 300 of the 500 invitees were in attendance. The guests included many dignitaries and businessmen as well as directors of CAR. Among the guests was John Rodolphus Booth, along with his wife and children, who rode in one of the head cars. The 12 hour trip commenced at the Elgin Street Station and proceeded to Couteau with a number of stops along the route. At each stop, the train was met with cheering crowds as speeches and press opportunities were given. The entire trip took 12 hours and covered nearly 100 miles. Mr. Booth's new rail company was well on its way to success.

Early on the morning of August 12, 1891, a serious accident took place on the swing bridge when a moving locomotive and two cars fell into the canal while the bridge was open for an oncoming vessel. At the Elgin Street Station, on the west side of the canal, engine #33 and three attached cars waited to be shunted to a load of cars heading east. After inspecting the engine, Engineer Michael McGaffney began walking into the station to obtain his orders. As he dismounted the engine he instructed Fireman Fred Page to take the engine and cars to the shunt located about 40 yards away. At the same time, the tug **Minnie Bell** was approaching and whistled for the bridge master to open the

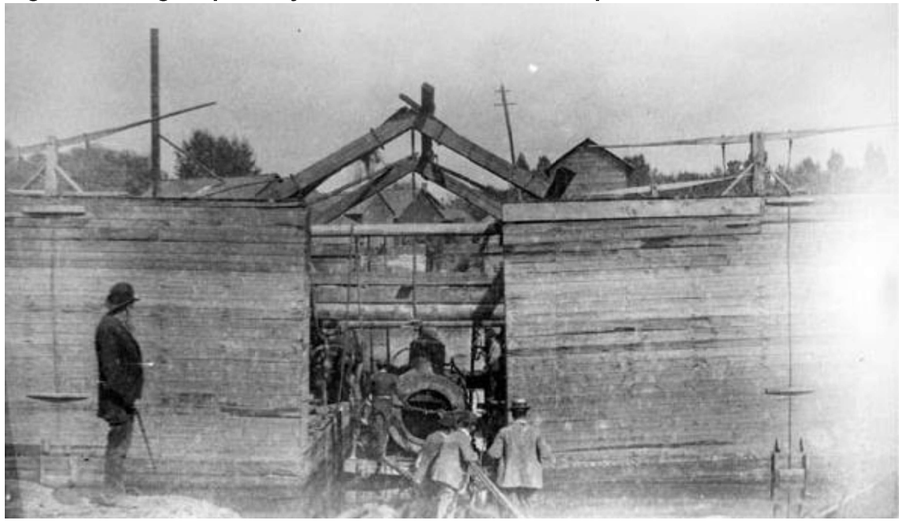
bridge. After sounding all signals, the bridge master opened the bridge and motioned the **Minnie Bell** to come through. The bridge master and the captain of the tug simultaneously noticed the quickly approaching train that did not appear to be stopping as signaled. With the bridge master frantically waving his arms and the **Minnie Bell** continuously ringing her bell while attempting to pull back, Fireman Page finally saw the open bridge but it was too late to avoid disaster. The engine, tender (coal car) and first car tumbled into the canal and quickly sunk beneath the water. The hot coal hitting the water caused a loud hissing and an enormous cloud of steam. Before the engine hit the water, it turned over completely in the air landing on its back into the water. The tender landed on top of the engine while the boxcar, loaded with wooden laths, broke in two sending wood and debris into the water. Fearing the worst for Fireman Page, the bridge master and various other witnesses were shocked, but relieved, to see that he had managed to jump from the engine and was now swimming to the pier with only a few bumps and scratches to show for his ordeal. Miraculously, there were no injuries and, owing to the fact that the engine and cars sunk completely below the water surface, there were no delays in further canal activity throughout the remainder of the day. There was also no damage to the bridge.

Mechanical Superintendent Morley Donaldson was given the difficult task of clearing away the debris and raising the engine from the canal. The next two days were spent removing the broken boxcar and strewn laths and stripping the tender to its frame. For the latter task, a large barge was obtained to assist. On the third day, Superintendent Donaldson attended at Montreal to secure barges to raise the engine. On the fourth day, Mr. James Rouleau, a diver with the city waterworks department, went into the waters of the canal to observe the wreckage. He found the engine completely intact although lying upside down. On the same day, the stripped down tender was retrieved from the water by a group of men under the supervision of a Foreman Holtby. They were able to work the tender down the canal away from the main accident area toward the Silicate Brick Company where timbers were placed under the tender and rails attached sloping up to a flatcar. Ropes and chains attached to a pulley were then used to haul the tender onto the flatcar. The raising of the 70 ton engine was not as easy or as timely. On September 7th, nearly a month after the accident, the engine was finally raised using a combined system of pontoons and jacking (Figures 15 and 16).

Figure 15: Sept. 1891 – Preparation to retrieve sunken engine – LAC PA127265



Figure 16: Engine partially removed from water – Sep. 1891 – LAC PA127267



In the aftermath of the accident, Fireman Page lost his job, and, the engine was dried out and put back into service. And on an odd but interesting note, the bell from the engine was cleaned up and, several years later, donated by CAR to the nearby Holy Trinity Church for the bell tower. Some years later, a system of chimes was introduced and the bell was given to St. Augustine's Church in Newington where it remains active. The swing bridge continued in operation following the accident (Figure 17).

Figure 17: June 1902 – NW quadrant near CAR yard – Topley Collection –LAC PA2812



On August 23, 1907, a second accident took place at the bridge although, this time, no machinery went into the water. Just after 6:00AM, Engine #451 with its tender was backing through the railyard to be attached to the daily eastbound freight train. Upon reaching the edge of the bridge, the engine began inexplicably speeding up and derailed, going the entire length of the bridge riding on the ties. The engineer and fireman were finally able to stop the engine just as the tender became suspended over the edge toward the water. Fortunately, it remained secured to the engine and did not fall into the water. It was two hours before crews were able to lift the tender back onto the badly damaged track and haul the train off of the bridge. The undercarriage of both the engine and tender were badly damaged and the swing bridge needed new rails and ties. All cleanup and retrieval was once again supervised by Morley Donaldson who had been the mechanical superintendent for the 1891 accident, and the swing bridge and associated activities continued (Figure 18).

Figure 18: Train approaching bridge – 1911 – LAC PA9936



In 1903, the government announced plans for a new transcontinental railway project, at which point, John Rodolphus Booth put the Canadian Atlantic Railway up for sale. In recent years he had suffered business losses due to major fires at some of his railyards. And, after nearly 25 years of operation, various repairs were needed to tracks and equipment. To Booth, it must have seemed like a good time to get out. The Grand Trunk Railway (GTR) had for some time expressed interest in purchasing the CAR and, in 1904, Booth agreed to sell. It took 10 years for the government to approve the sale during which time the GTR leased and operated all property from the CAR including the Rideau Canal swing bridge.

The Grand Trunk Railway was a British company owned by a group of private British investors operating out of London. The company arrived in Canada during the mid-1850s and built a much welcomed line between Toronto and Montreal. They raised capital through a system of bonds with interest payments attached. However, this often proved to be unprofitable since bond owners would miss payments and the GTR would be cash strapped. In 1861, the company was in such bad financial shape that the government gave them a $15 million dollar bailout. Afterwards, the company converted their bond system to that of a share hold system which proved to be much more lucrative.

Even with the new share holder system, the GTR continued their financial woes. Always wanting to play it safe, they preferred to only build and invest along already proven routes instead of focusing on the future. Given the fact that Canada was growing quickly with more provinces entering Confederation, this "play it safe" attitude

was not always welcome. It was likely this desire to stick with the known as opposed to the unknown that sparked the company's interest in purchasing the CAR, a tried and true railway, serving along the very established Rideau Canal and into the United States.

It was the GTR who, in 1912, replaced the rail swing bridge with a new deck plate girder swing span. A series of orders allowed for its replacement. They were Order-in-Council 1910-2389, BRC Order 12752 (January 13, 1911) and BRC Order 15838 (January 24, 1912). The new bridge had a ladder and catwalk system meaning the bridge master was not required to stand at the centre bridge for the duration of his shift.

The replacement bridge was not met with the same fanfare as its predecessor, possibly because it did not coincide with a new railroad and/or passenger system as in the case of the Canadian Atlantic Railway. Nonetheless, the new bridge was open for business by the summer of 1912.

As with the first bridge, the second one had no interlocking system. This meant that, during the navigation season when vessels were in the water, all trains had to come to a full stop before continuing across the bridge. During the winter when the canal was frozen, the bridge was secured allowing trains to move normally. Stopping westbound trains proved particularly difficult since additional engines were sometimes required to help bring full tonnage trains into the rail yard. This often resulted in additional smoke and noise which was a particular nuisance during the navigation season. As a solution, an interlocker was put into place in 1940. This was authorized by order #59374 dated July 11, 1940. Order #60695 dated May 12, 1941 brought the interlocker into operation. Unlike most other interlockers, the order did not provide for the installation of approach signals. This meant that all trains approaching the bridge had to maintain a slow speed of ten miles per hour. This was not a problem since the rail yards were in close proximity to the bridge and slower speeds were a natural occurrence. A small cabin housing a six lever frame was built on the east side of the canal. There was a separate lever for east and west bound signals as well as a bridge coupler power switch, bridge lock and eastbound and westbound point derails (Figures 19).

The replacement swing bridge was in use for just over 50 years (Figures 20 – 24) until the rail line was abandoned. The bridge was officially removed from service on February 3, 1963 and handed over the next day to the National Capital Commission, the Crown Corporation established in 1959 responsible for the planning and improvement of Canada's capital.

Figure 19: Post 1940 – second bridge with installed interlocker and control house (LAC) START



The 1965 Highway 417 bridge resulted in a widening of the navigation channel, and the construction of two sets of six piers constructed in the water. These piers were in the approximate location of the 1832 canal walls.

A search for architectural and engineering drawings on the Canadian Library and Archives site had a negative return.

According to the Small Craft Guide of 1984 (Department of Fisheries and Oceans 1984: 81) the Rideau Canal follows "an irregular course through the suburbs and the city of Ottawa" and was constructed to bypass the Rideau River rapids. In 1984, canal depth ranged from 6 to 15 feet, with a constant depth being maintained throughout navigation season. The Queensway bridge is noted with a clearance of 22 feet.

According to the **Rideau Canal National Historic Site of Canada Submerged Cultural Resource Inventory** (nd: 212), the Study Area forms part of the Rideau River: Hartwell to Ottawa Locks (30M38) site. This particular section is identified in the above report as number 3705, Isabella Street Railway Swing Bridge. A summary of the information supplied above appears in the inventory.

Figure 20: Post 1940 Aerial Photograph of Study Area (courtesy of Parks Canada)



Figure 21: Fire Insurance Map – 1956 (LAC)

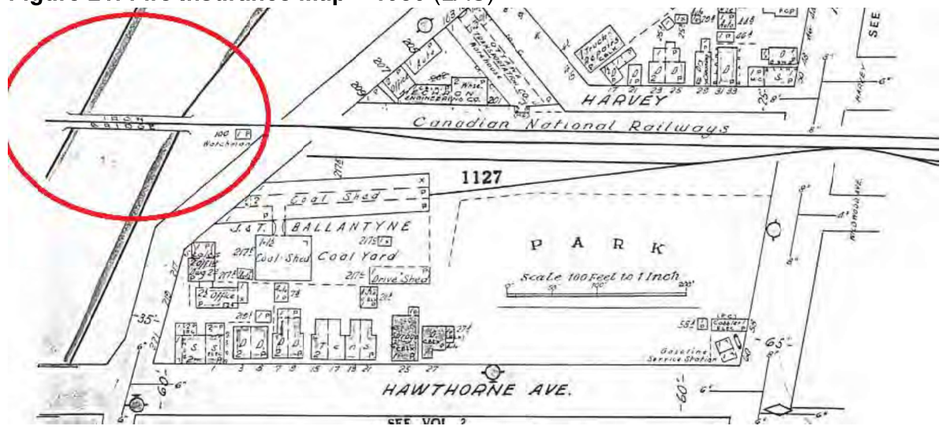


Figure 22: Aerial Photo – 1956 – (LAC)



Figure 23: 1961 Photograph of Train Approaching Swing Bridge
(courtesy of Parks Canada)



Figure 24: Boat with Open Swing Bridge (courtesy Parks Canada) post 1910



3.2 Property Visit

A property visit was conducted on April 22, 2018 while canal water height was still at low winter draw-down depth. Both sides of the canal walls were examined for evidence of any remnants from the earlier two swing bridges. In addition, the interior of the canal was also examined visually for possible evidence of the former centre pier or any evidence of the former derailment accident.

Figure 25 illustrates the location from which the colour digital photographs were taken (keyed to Figure 1). Appendix B provides descriptors of the photographs, and orientation of the images. Figures 26 - 65 illustrate the photographic images taken for the property visit.

There was no evidence in the canal itself or along the walls of vestiges of the former two swing bridges or of the derailment accident.

Figure 25: Location of Photographic Images from Property Visit



Concrete spalling is apparent in the photos of the canal walls and piers.

Figure 26: Area A east side from Pretoria bridge facing east



Figure 27: Area A east side from Pretoria bridge facing east



Figure 28: Area A west side from Pretoria bridge facing north



Figure 29: Area A west side facing east



Figure 30: Area A west side looking east into canal water



Figure 31: Area B west side between piers facing south



Figure 32: Area B, west side, north half, facing east



Figure 33: Areas B and C, west side between piers, facing east



Figure 34: Area C, west side, south half, facing east

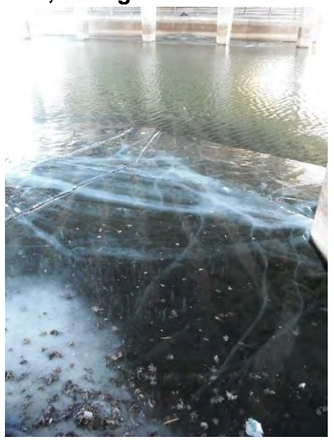


Figure 35: Area C, west side, north half, between piers, facing east

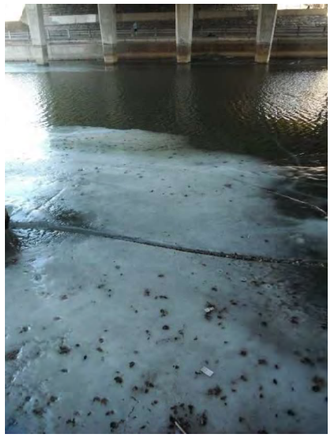


Figure 36: Area D, west side, south half, facing east



Figure 37: Area D, west side, north half facing east



Figure 38: Area D, Queensway Bridge, facing south



Figure 39: West side of Study Area facing north, ice to north

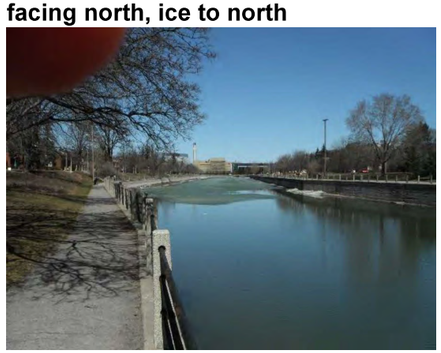


Figure 40: North side showing ice, facing north



Figure 41: Area A, east side, facing west



Figure 42: Area A, east side, close to piers, facing west



Figure 43: Area B, east side, south half, facing west, between piers

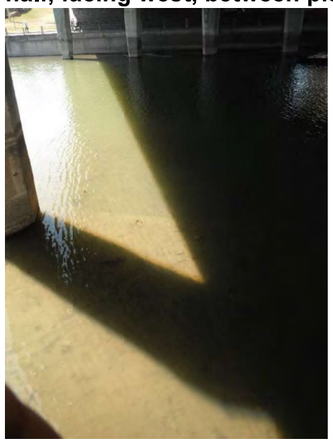


Figure 44: Area B, east side, base of piers, facing west

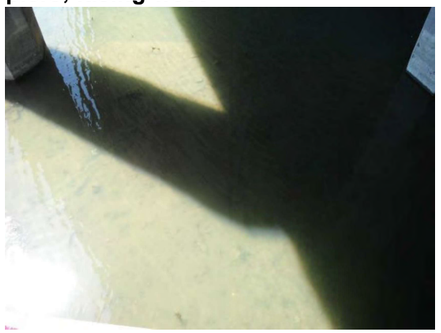


Figure 45: East side between 2 piers, north half, facing west



Figure 46: Areas B and C between centre piers facing west

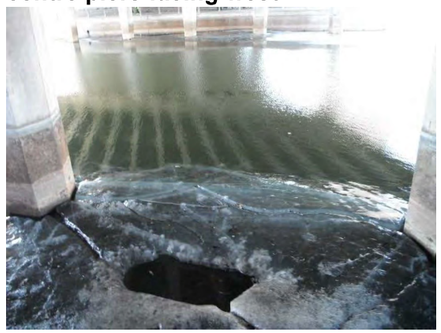


Figure 47: Area C, east side, south half, between 2 piers, facing west

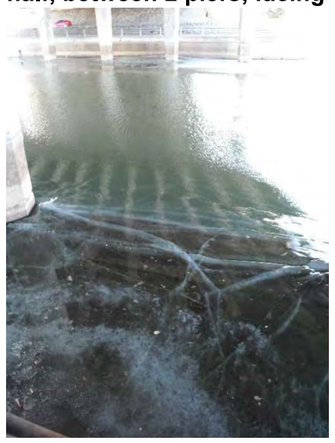


Figure 48: Area C, east side, north half, between two piers, facing west

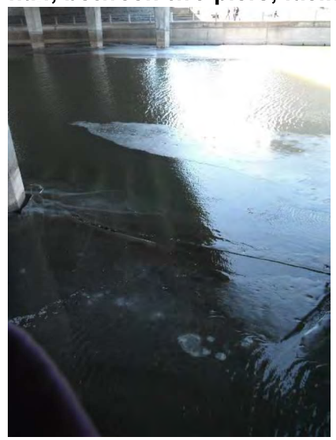


Figure 49: Area D, east side, south half, facing west

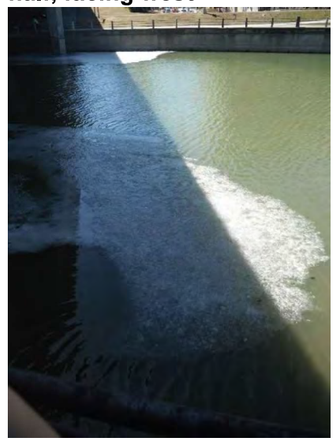


Figure 50: Area D, east side, north half, facing west

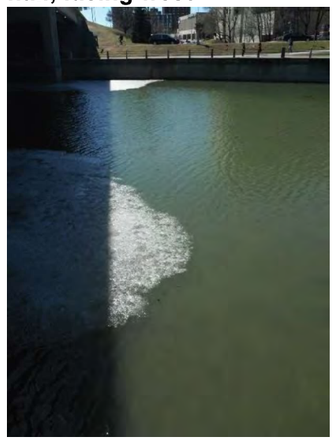


Figure 51: Area D, weeds, facing west

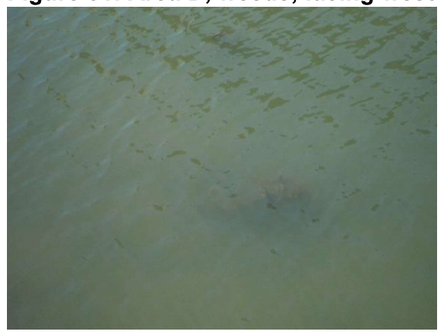


Figure 52: East side, Queensway bridge, facing southwest



Figure 53: East side, north area, wood debris, facing down



Figure 54: East side reference point above wood debris facing west

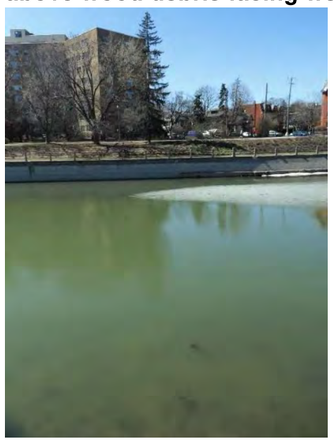


Figure 55: East Side, person for reference by wood debris, facing west



Figure 56: Area D, west side, facing south



Figure 57: Area D, west side, facing east



Figure 58: Area A from Pretoria bridge, west side, facing north



Figure 59: Area A from Pretoria bridge, west side, facing north



Figure 60: Area A from Pretoria Bridge east side facing north



Figure 61: Area A from Pretoria Bridge east side facing north, in water

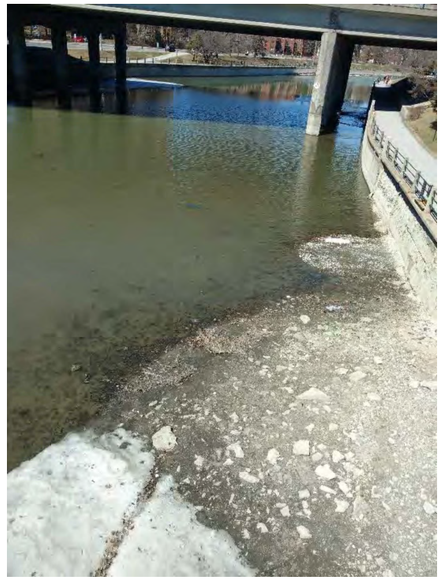


Figure 62: Area B, east side, south half, between piers, facing west



Figure 63: Area B, east side, south half, facing west, close-up of water, between piers



Figure 64: Area D, east side, weeds, facing W



Figure 65: Area D, east side, facing southwest



4.0 Conclusions and Recommendations

"Recognition and respect for the evolution of the canal is supported by the Statement of Outstanding Universal Value of the Rideau Canal as a UNESO World Heritage Site. Specifically, the canal's inscription on the World Heritage List recognizes that the inscribe [sic] property "includes all the main elements of the original canal together with relevant late changes in the shape of watercourses, dams, bridges, fortifications, lock stations and related archaeological resources. The original plan of the canal, as well as the form of the channels, has remained intact [Decisions Report (Christchurch, 2007): WHC=-7/31.COM/24, pp. 164=5: Decision 31 COM 8B.25]" (Festarani 2017).

The above has been considered in the conclusions and recommendations for the Study Area.

Transportation in the canal has evolved over time, particularly since the initial canal construction in 1832. There were two swing bridges constructed in the Study Area; the first in 1882; and, the second in 1912. The latter was removed for the current bridge, which was constructed in 1965.

At the time of the construction of the first swing bridge, the canal walls were narrowed for the purposes of supporting the railway bridge abutments, and a centre pier was also constructed. There is no tangible evidence of any of the second 1912 swing bridge still remaining within the canal, or of the "incident" where the train entered into the canal (it was totally recovered). The 1965 bridge construction removed all evidence of the former swing bridges, widened the canal again at this location. The current canal configuration closely approximates what it would have been in the initial 1832 canal construction.

Based on the background research, and the current condition of the canal, the following recommendations are made:

- There is no requirement for further archaeological assessment of the Study Area, including the adjacent upper and lower reaches.
- If development is approved by Parks Canada, and any archaeological resources are located during the construction phases, all work is to be halted and Parks Canada immediately notified. Based on their investigation of the "discovered" archaeological features/material, Parks Canada will recommend next steps to the proponent.

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Appendix A: Correspondence from Parks Canada

Jonathan.Moore@pc.gc.ca
RE: Info Bulletin//Bulletin d'information
To Scarlett Janusas
You forwarded this message on 11/6/2017 11:37 AM.
This message is part of a tracked conversation. Click here to find all related messages or to open the original flagged message.
We removed extra line breaks from this message.

Hi Scarlett,

Yes, I agree. Sounds like a prudent approach, especially if you can get some new primary research done, as we discussed.

With all of the rain there is still quite a bit of water in the canal, but the edges are mostly exposed. Also, I think any new construction or modification to the bridge will be nearer to the edges.

Cheers,

Jon

From: Scarlett Janusas <jscarlett@amtelecom.net>
To: Jonathan.Moore@pc.gc.ca
Cc: 'Gord Bell' <gord.bell@bteng.ca>
Date: 06/11/2017 08:51 AM
Subject: RE: Info Bulletin//Bulletin d'information

Hi Jon - so, wondering if you received my previous email with regards to this project. Given that that there is no benefit to doing sidescan sonar when a simple visual of the canal while it is drained will suffice - no point in conducting that methodology. The infrastructure doesn't allow for mag (too much interference). The soils cannot be disturbed as per your
report - highest risk - so we wont' be doing that. Would background
research and construction monitoring suffice?

Regards
Scarlett

-----Original Message-----
From: Jonathan.Moore@pc.gc.ca [mailto:Jonathan.Moore@pc.gc.ca]
Sent: Friday, November 3, 2017 10:34 AM
To: Scarlett Janusas <jscarlett@amtelecom.net>
Subject: Fw: Info Bulletin//Bulletin d'information

FYI

----- Forwarded by Jonathan Moore/NOTES/PC/CA on 03/11/2017 10:33 AM -----

From: Sandra Limoges/NOTES/PC/CA
To:
Date: 02/11/2017 01:38 PM
Subject: Fw: Info Bulletin//Bulletin d'information

Good Afternoon,

Please be advised that, as per the Information Bulletin attached and below, recent testing has revealed contaminated sediment in the bed the Rideau Canal from Bronson Street to the Ottawa Locks and as such this section of the Canal is being listed on the Federal Contaminated Sites Inventory.

The contaminated sediment is trapped below the canal bed, and therefore presents a low risk to human health. It is generally only a concern if someone were to have direct contact with it.

Testing has confirmed that levels of contaminates do not exceed the safety factors established by the Canadian Council of Ministers of the Environment Water Quality Guidelines, therefore future in-water construction work can proceed with appropriate mitigating measures in place. Please see attached excerpt from the Golder & Associates report entitled Environmental Management Planning Considerations, Ottawa Wall Repairs Rideau Canal, Ottawa Ontario dated September 7, 2017. Entire report is available for review upon request.

(See attached file: Mitigation Measures.pdf)

Finding contamination in this section was not unexpected. This stretch of the Rideau Canal has a long history of industrial use, is in a major urban area and other parts of the Rideau Canal in the National Capital Region are also listed on the Federal Contaminated Sites Inventory.

If you have any questions or concerns please contact your respective manager.

Please refer any media queries to Valerie de Winter.

Valerie de Winter
Communications and Media Relations Officer
613-263-7199 X 266
valerie.dewinter@pc.gc.ca

TEST RESULTS FROM SEDIMENT ON THE BED
OF THE RIDEAU CANAL

OTTAWA, ONTARIO, November 2, 2017 – Parks Canada has received the findings from testing performed on the contaminated sediment on the bed of the Rideau Canal in downtown Ottawa from the Ottawa Locks to Bronson Street.
These tests were conducted to identify the scope and extent of contaminated sediment that were identified in January 2017 and to ensure that all appropriate environmental protection measures can be put in place to minimize future disruption of the contaminated sediment on the bed of the Rideau Canal.

Public safety is of the utmost importance to Parks Canada. As the contaminated sediment is trapped in the bed of the canal, we wish to reassure the public that this presents a very low risk to human health. It is generally only a concern if someone were to have direct contact with the contaminated sediments on the bed of the Rideau Canal.

Parks Canada adheres to strict standards of environmental protection and will continue to provide safe and meaningful experiences to visitors along the entire length of the Rideau Canal – whether boating or paddling, or enjoying the National Capital Commission's pathways and skateway along the Canal.

Based on the test results, this section of the Rideau Canal in downtown Ottawa from the Ottawa Locks to Bronson Street is now being listed on the Federal Contaminated Sites Inventory. As this stretch of the Rideau Canal has a long history of industrial use and is in the middle of a major urban area, and given that other parts of the Rideau Canal are already listed on the Federal Contaminated Sites inventory, finding contaminated sediment in this section of the Canal was not unexpected.

Parks Canada will be working with Treasury Board and other partners, including the City of Ottawa and the National Capital Commission, to explore best practices regarding mitigation or remediation of the contaminated sediment in this section of the Rideau Canal in downtown Ottawa from the Ottawa Locks to Bronson Street.

Future construction work will proceed with appropriate mitigation measures in place to ensure environment protection and continued public safety.

If any media representatives are interested in a briefing on this subject, please contact Parks Canada Media Relations at 855-862-1812 or pc.media@pc.gc.ca.

-30-

(See attached file: IBe Rideau Canal contamination report - 485.doc)

Dear Darcie,

I am helping to coordinate the underwater archaeological assessment for the stretch of the Rideau Canal under the Hwy. 417 bridge crossing. I am responsible for the Rideau Canal NHS on behalf of Parks Canada's Underwater Archaeology Team. I have been in communication with Scarlett Janusas who just forwarded to me a copy of the Stage 1 report for Hwy. 417 by The Central Archaeology Group.

I am writing to suggest that some minor additions / changes should be made to this report prior to final submission to the MTCS. My chief concern is that the report does not adequately reflect prior archaeological work by Parks Canada in the canal and that is makes little mention of Parks Canada in general. In fact, the name Parks Canada does not appear in the report, and as far as I know, the consultant did not contact Parks Canada. To this end, one or two statements as to archaeological potential are too sweeping and do not necessarily reflect our views in the case of the canal. I note however that it is sometimes difficult for consultants to learn about work on federal properties, because the results of this archaeological work is not always held by the province.

I believe the report could be improved with some small-scale changes and strategic additions of text. I would be pleased to make these suggestions to the consultant.

With kind regards,

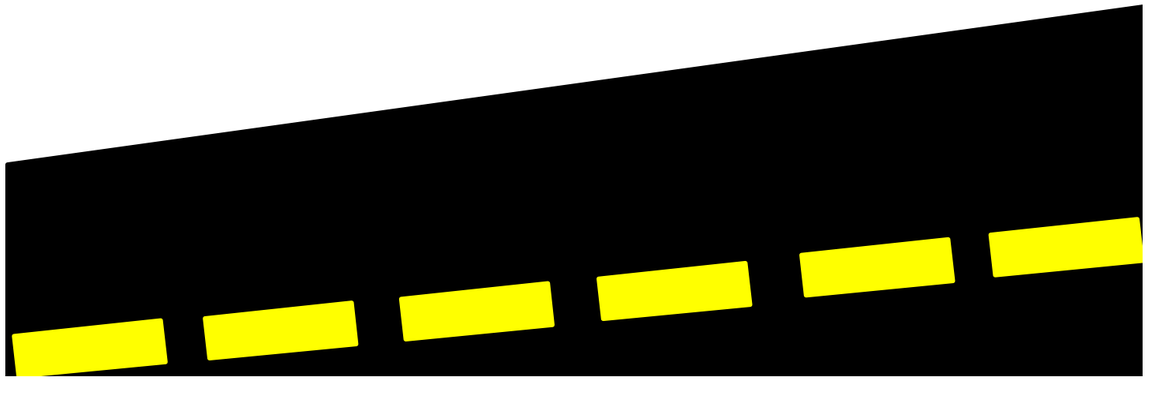
Jonathan Moore
Senior Underwater Archaeologist | Archéologue subaquatique principal Underwater Archaeology Team | Équipe d'archéologie subaquatique Parks Canada Agency | Agence Parcs Canada
1800 Walkley Road
Ottawa, Ontario, Canada K1H 8K3

jonathan.moore@pc.gc.ca
Telephone | Téléphone 613-993-2125 x 204 Facsimile | Télécopieur 613-993-5796 www.parkscanada.gc.ca | www.parcscanada.gc.ca Government of Canada | Gouvernement du Canada

Appendix B: Photographic Image Detail

Photo #	Orientation	Descriptor
1	Facing N	Area A east side from Pretoria Bridge
2	Facing N	Area A centre from Pretoria Bridge
3	Facing N	Area A west side from Pretoria Bridge
4	Facing E	Area A west side
5	Facing E	Area A west side, close up of interior of canal
6	Facing E	Area B west side, between piers 1 and 2, south half
7	Facing E	Area B west side, between piers 2 and 3, north half
8	Facing E	Areas B and C west side, between centre piers, looking E
9	Facing E	Area C west side, between piers, south half
10	Facing E	Area C west side, between two piers, north half
11	Facing E	Area D west side, south half
12	Facing E	Area D west side, north half
13	Facing S	Area D, Queensway bridge, from north
14	Facing N	West side, showing icy patches to north
15	Facing N	North side, showing icy patches to north
16	Facing W	Area A, east side, interior of canal
17	Facing W	Area A, east side close to piers
18	Facing W	Area A, east side between piers 1 and 2
19	Facing W	Area B, east side, showing base of piers
20	Facing W	Area B, east side, between two piers, north half
21	Facing W	Area B, east side between centre piers
22	Facing W	Area C, east side, between piers, south half
23	Facing W	Area C, north half, between two piers
24	Facing W	Area D, south half
25	Facing W	Area D, north half
26	Facing W	Area D, patch of weeds in canal
27	Facing SW	East side, general, Queensway bridge
28	Facing down	East side, outside of Area D, wood debris
29	Facing W	East side, reference point, outside study area
30	Facing SW	East side, J. Grenville standing over wood debris
31	Facing S	Area D, west side
32	Facing E	Area D, west side
33	Facing N	Area A, from Pretoria Bridge, west side
34	Facing N	Area A, from Pretoria Bridge, west side (same as 33)
35	Facing N	Area A, from Pretoria Bridge, east side
36	Facing N	Area A, from Pretoria Bridge, east side, close up
37	Facing W	Area B, east side, between piers, south half
	Facing W	Area B, east side, between piers, south half (same as 37)
38	Facing W	Area D, possible patch of weeds in water
39	Facing W	Area D, possible patch of weeds in water
40	Facing SW	East side towards Area D

Appendix H3
Supplemental Underwater Archaeological Assessment



MARINE ARCHAEOLOGICAL ASSESSMENT, PORTION OF RIDEAU CANAL NORTH OF THE OTTAWA QUEENSWAY HIGHWAY 417 BRIDGE
(ADDITIONAL AREA TO PERMIT #RIC2018-27677)
CITY OF OTTAWA
PART OF FORMER CITY OF NEPEAN
HISTORIC NEPEAN TOWNSHIP
HISTORIC CARLETON COUNTY

Prepared for

BT Engineering Inc.
and
Parks Canada

SCARLETT JANUSAS ARCHAEOLOGY INC.
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phone 519-596-8243 mobile 519-374-1119
jscarlett@amtelecom.net
www.actionarchaeology.ca



Permit #RIC2021-49683
April 27, 2022
©

Executive Summary

Scarlett Janusas Archaeology Inc. was retained by BT Engineering to conduct an underwater archaeological assessment for a section of the Rideau Canal under the Ottawa Queensway Highway 417, and adjacent upstream and downstream reaches in 2018, where there is proposed work planned to replace the aging Highway 417/Queensway Bridge which spans the Rideau Canal north of Hawthorne Avenue between Queen Elizabeth Drive and Colonel By Drive. The area was extended to include a section north of the most northern section assessed in 2018 in 2021. Work could not be completed in the fall of 2021 due to heavy weed growth in the area and was rescheduled for the spring during drawdown and after weeds had subsided over the winter.

This report is to be paired with the report conducted by Scarlett Janusas Archaeology Inc. in 2018, under the title, Underwater Archaeological Assessment, Portion of Rideau Canal, Under the Ottawa Queensway, Highway 417 and adjacent Upstream and Downstream Areas, City of Ottawa, Part of Former City of Nepean, Historic Nepean Township, Historic Carleton County, conducted under permit #RIC2018-27677.

Historic background research conducted for the 2018 project remains the same for the 2021/2022 project area.

A total of three bridges have been erected over time at the site. The first was the early railway swing bridge built in 1882 by the Canadian Atlantic Railway (CAR). This bridge was replaced in 1912 with a similar bridge built by the Grand Trunk Railway (GTR). The current bridge spanning the Rideau Canal in this location was built in 1965.

Background research provided additional information regarding the construction of the swing bridge, and of an accident in the Rideau Canal at this location.

The background research was complemented by a field visit where photographs of the Rideau Canal section were taken in an effort to determine if there were any visible signs of the former swing bridges or other tangible cultural evidence. There was no tangible evidence of any of the former swing bridges on the canal walls, or in the canal (at draw-down water level) in the additional area of proposed development impact.

No in-canal work was conducted due to the level of contamination present in the sediments.

Based on the background research, and the current condition of the canal, the following recommendations are made:

1. There is no requirement for further archaeological assessment of the original Study Area or the additional area.

2. If development is approved by Parks Canada, and any archaeological resources are located during the construction phases, all work is to be halted and Parks Canada immediately notified. Based on their investigation of the “discovered” archaeological features/material, Parks Canada will recommend next steps to the proponent.

This report has been submitted to Parks Canada in fulfillment of the requirements of the Parks Canada issued permit.

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Project Personnel

Project Manager Principal Archaeologist, And Report Preparation	Scarlett Janusas
Historian	Gina Martin
Technical Assistance	Susan Bazely John Grenville

MARINE ARCHAEOLOGICAL ASSESSMENT
PORTION OF RIDEAU CANAL
NORTH OF THE OTTAWA QUEENSWAY, HIGHWAY 417
(ADDITIONAL AREA TO PERMIT #RIC2018-27677)
CITY OF OTTAWA
PART OF FORMER CITY OF NEPEAN
HISTORIC NEPEAN TOWNSHIP
HISTORIC CARLETON COUNTY

1.0 INTRODUCTION

1.1 Project Description

This report is to be paired with the report conducted by Scarlett Janusas Archaeology Inc. in 2018, under the title, Underwater Archaeological Assessment, Portion of Rideau Canal, Under the Ottawa Queensway, Highway 417 and adjacent Upstream and Downstream Areas, City of Ottawa, Part of Former City of Nepean, Historic Nepean Township, Historic Carleton County, conducted under permit #RIC2018-27677.

This archaeological assessment has been conducted as a consideration of the "potential realignment of the canal walls to their pre-1963 Highway 417 bridge alignment, essentially reversing the realignment that was undertaken in 1965, to support the design evolution of the two preliminary bridge design options" (Festarani 2017).

Parks Canada required that an archaeological assessment of the Study Area (under the Ottawa Queensway, Highway 417, and adjacent upper and downstream reaches) be conducted to complete the Environmental Assessment (Figures 1–6). An additional areas was added to the above Study Area in 2021 (Figure 7). The latter is the subject of the field assessment for this permit. The purpose of the archaeological assessment is to confirm the presence of, or define the limits of archaeological resources in-water.

The proposed new bridge design preference (by Parks Canada) (ibid) is a bridge structure with no in-water piers. In order to support the Highway 417 traffic, it may be necessary to construct in-water piers. Vertical clearance for the bridge, in order to obtain safe navigation, is a minimum of 6.7 metres, with a minimum width of 25 metres.

1.2 Current Location and Environment

The current Queensway Bridge (Highway 417) has two sets of six piers in the navigation channel. This section of the Rideau Canal is a man-made, dug channel. The Study Area lies wholly within Federal jurisdiction.

The current Queensway Bridge, as well as the two historic railway swing bridges (no longer extant), spanned the Rideau Canal north of Hawthorne Avenue between present

day Queen Elizabeth Drive and Colonel By Drive. As of late 2017, the section of the Rideau Canal between the downtown locks and Bronson Avenue is now included on the Federal Contamination Sites inventory maintained by the Federal Government of Canada. The designation came about following testing in the area during 2016 to mid-2017 which showed the presence of lead, cadmium and polycyclic aromatic hydrocarbons which are known to cause cancer. Decades of carbon producing coal burned by locomotives crossing the bridge, contaminants tossed into the water by a lead paint factory and boats hauling industrial goods along the canal have all contributed to the contamination of the water. The Ottawa Silicate Brick Company stood for many years adjacent to the bridge near Hawthorne Avenue. Coal driven ovens used in the drying process of the manufactured bricks would also have led to contamination of the area.

Email correspondence with Jonathan Moore, Parks Canada, confirmed that testing within the canal itself (limits of the Study Area) would not be required due to the level of contamination (Appendix A).

The canal depth is usually 2.6 metres (except at winter draw-down).
During winter draw down, some of the water in the canal is totally gone, and the water depth ranges from 0 cm s to approximately 1.5 metres in the centre of the canal.

1.3 Indigenous Engagement

The proponent, BT Engineering, sent out an initial invitation to the Algonquin of Ontario. Scarlett Janusas Archaeology Inc. continued to engage. The Algonquin of Ontario indicated they would not be sending anyone to monitor activities at the Study Area, but wished to be informed should any Indigenous finds be located. The Indigenous engagement is contained in an accompanying report.

Figure 1: Study Area (courtesy of BT Engineering)

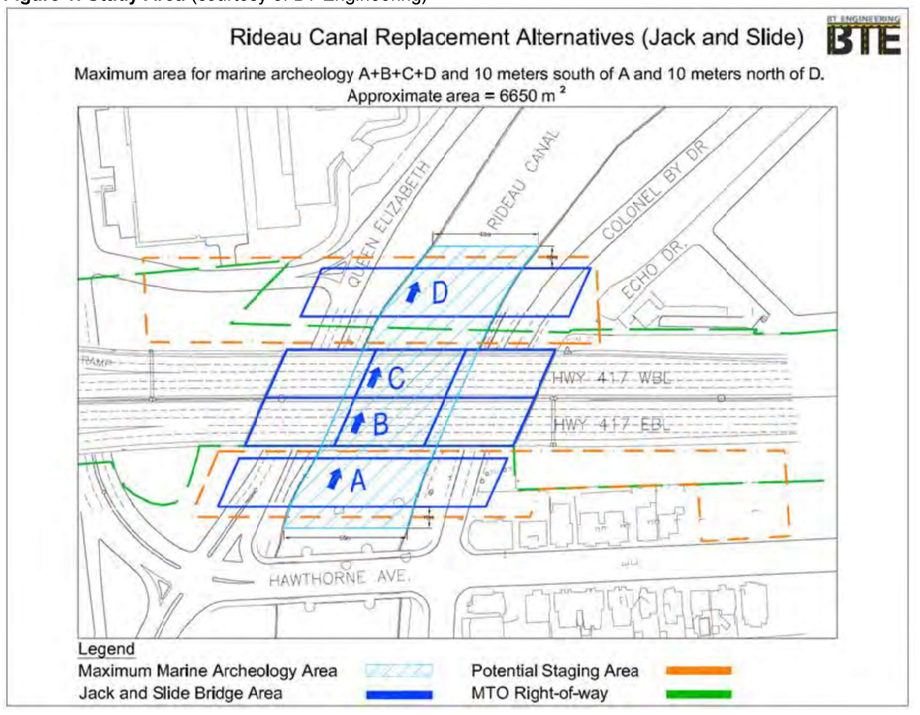


Figure 2: Looking North towards the Ottawa River (courtesy of BT Engineering)



Figure 3: Looking South towards Hawthorne Avenue (courtesy of BT Engineering)



Figure 4: Land and Right-of-Way Owned by MTO (courtesy of BT Engineering)

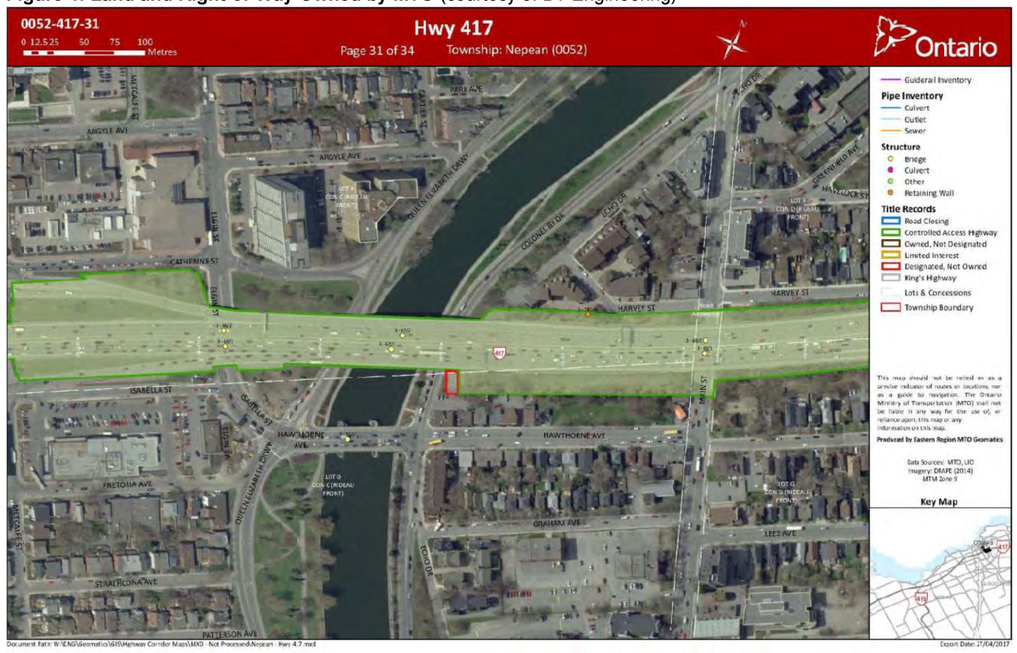


Figure 5: Study Area (courtesy of BT Engineering)

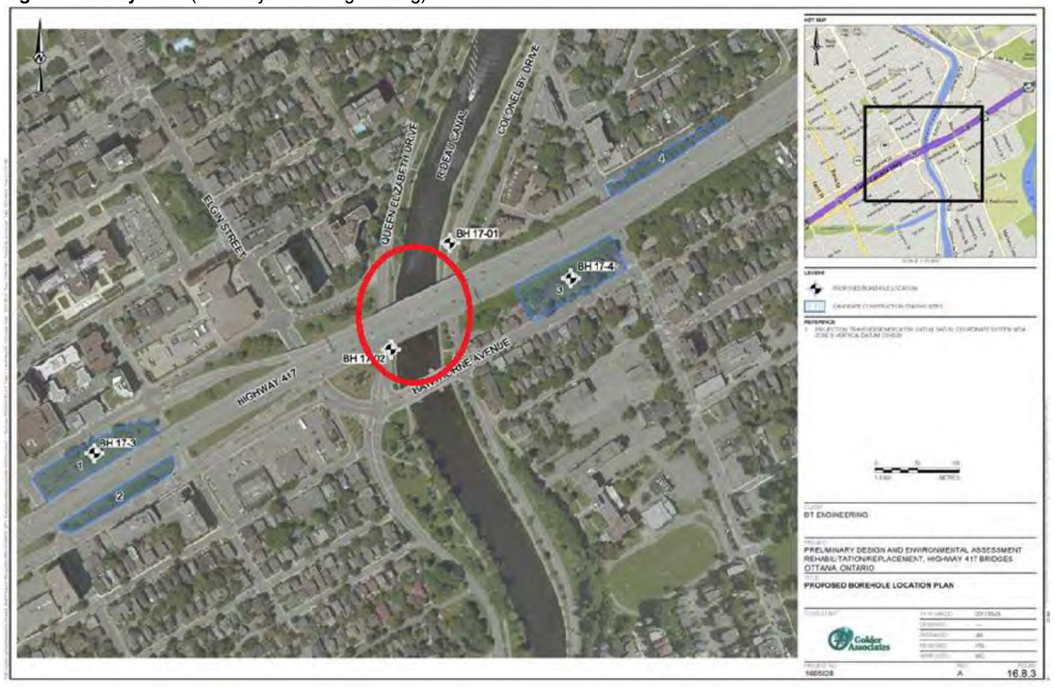


Figure 6: Close-up of Study Area (courtesy of BT Engineering)

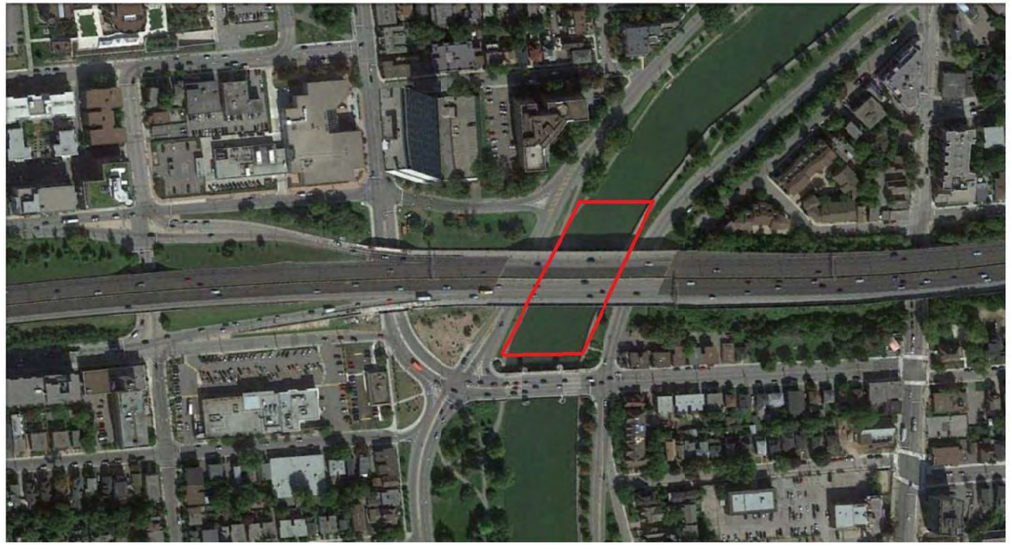


Figure 7: 2021/2022 Study Area (courtesy of BT Engineering)

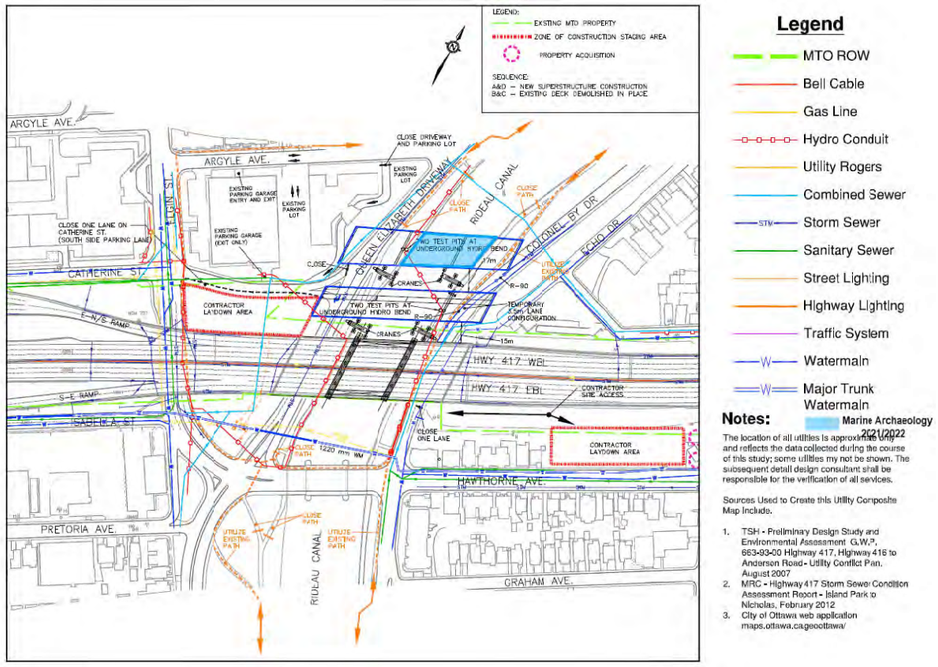
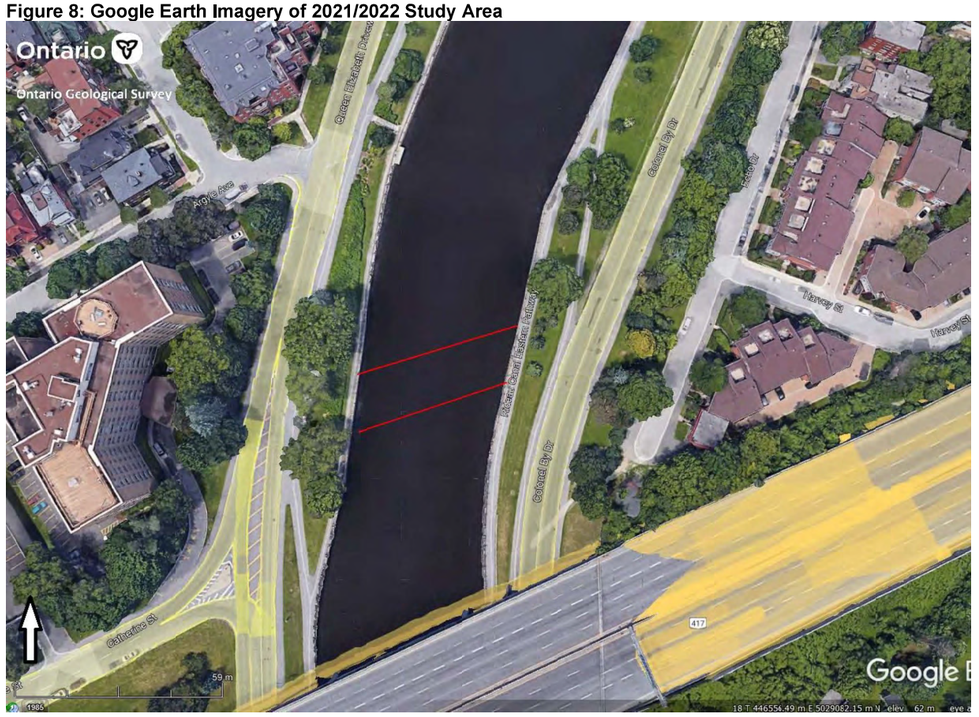


Figure 8: Google Earth Imagery of 2021/2022 Study Area



2.0 Methodology

2.1 Background Research

Background research was used from the 2018 report (SJAI 2018) and used the local, provincial and national archives, and the railway archives. In addition, some material was provided of the Study Area by Jonathan Moore, Parks Canada. Both primary and secondary resources were used to obtain the history of this section of the Rideau Canal, and wherever possible, imagery was obtained to augment the same.

2.2 Property Visit

A property visit was conducted on April 19th, 2022 under overcast skies with a light drizzle, with a temperature of 2°C, while the canal was still at its' draw-down level (winter level). An examination of the walls/structure of the canal section and its reaches was conducted visually and recorded using a digital colour photograph camera. All photographs were recorded as to the location of the shot and the orientation of the same (Appendix B). These were then transferred to an aerial map (see Section 3.0).

3.0 Results

3.1 Background Research

3.1.1 General

Until about ten thousand years ago, the Ottawa/Rideau area, including the current Study Area, lay submerged beneath the Champlain Sea, a salt body of water formed about 12,000 BCE after the retreat of the continental glacier. The sea covered lands in the indentation of the Saint Lawrence Lowlands from Quebec City west to about Brockville, Ontario and north to the Ottawa Valley. The Champlain Sea endured for about two thousand years until the water became too fresh and marine organisms were unable to survive. At about the same time, the shorelines began to recede, leaving large deposits of marine clay throughout the area.

It has been demonstrated through archaeological investigation that the first Indigenous populations were present in the Ottawa Valley about 6500 BCE. Nomadic hunters and gatherers took advantage of the plentiful animal life as well as the natural supply of water along the Ottawa River and its tributaries. These people were the predecessors of the Algonquin, the Indigenous group occupying the area when the first Europeans began to explore the interior of Canada. It is known that, in 1610, the French explorer Etienne Brulé navigated the Ottawa River with the assistance of Algonquin guides as he sought fur routes for Samuel de Champlain. In 1615, Champlain visited the area during which time he secured an alliance with the Algonquin in the fur trade against the English who had befriended the Iroquois bands. The fur trade marked fierce wars as differing Indigenous populations battled each other to provide furs for the European traders.

During the mid-1700s, what is now Ontario was still part of the Province of Quebec. On July 24, 1788, the Governor General to the Crown, Lord Dorchester, issued a proclamation dividing Quebec into a series of geographic regions. The future Carleton County fell within the Eastern District, extending from the mouth of the Gananoque River to the Quebec boundary. In 1792 the Province of Quebec was divided into Upper and Lower Canada at which time Lord John Graves Simcoe assumed the government of Upper Canada. In 1798, the district boundaries were realigned with a portion of the Eastern District severed off to create the Johnstown District which consisted of the future counties of Carleton, Grenville and Leeds. Carleton County was created in 1800 from parts of Dundas and Grenville Counties. Carleton County was named for Guy Carleton who was the First Baron of Dorchester. In 1822, Carleton County separated to form the Bathurst District which, in 1838, became part of the new Dalhousie District. When the district system was eliminated in 1849, the Dalhousie District became Carleton County.

Carleton County had ten townships including Nepean Township, the location of the Study Area. Nepean was first established in 1792, becoming part of Carleton County in 1800.

The initial township survey indicated Nepean with an area of 55,496 acres. Originally known simply as Township D, Nepean was named for Sir Evan Nepean who was the British Secretary of State for the Home Department. The first settler to the township was Jehiel Collins of Vermont who located at various sites near the Ottawa River. The township was incorporated in 1850 and the first township meeting was held January 7, 1850 at current day Bell's Corners. Nepean was later incorporated as a city in 1978 and amalgamated with Ottawa in 2001.

3.1.2 General History of the Rideau Canal

Ottawa was founded as a community in 1826 and was known originally as "Bytown" after its founder, Lieutenant Colonel John By (Figure 9). Lieutenant Colonel By was born August 7, 1779 in Lambeth, Surrey, England where he studied at the Royal Military Academy and was commissioned in the Royal Artillery, later transferring to the Royal Engineers. In 1802, he was posted to Canada where he worked on the fortification of Quebec City. He returned to England during the Napoleonic Wars where he served under the Duke of Wellington. He retired from the military in 1815 but, owing to his Canadian engineering experience and in response to rumoured threats of further invasions from the United States of America (USA), he was recalled and sent back to Canada to work on a marine military route connecting Montreal to Kingston. To this end, he supervised the design and construction of the famed Rideau Canal (part of the Study Area).

Figure 9: Colonel John By unknown artist…Parks Canada



It was actually Samuel de Champlain who inadvertently gave the canal system its name. Rideau is a French word meaning "curtain". Champlain believed that the twin waterfalls where the Rideau and Ottawa rivers met resembled a set of curtains, and recorded this observation in his journals.

Talk of a canal system first came to light during the War of 1812 when it was rumoured that the Americans were planning to invade Canada via the St. Lawrence River, a move that would shut down all communications between Montreal and the naval base at Kingston. Plans for the canal started in 1816 when Lt. Joshua Jebb of the Royal Engineers was given the task of surveying a route from Lake Ontario to the Ottawa River. Once Lieutenant Colonel By arrived from Europe in 1826, thousands of men were hired for construction

and were supervised throughout the project by the Royal Engineers. The canal opened in 1832, but was not fully completed until 1834 (Keefer 1893).

The canal system was 202 kilometres long with approximately 19 kilometres of the canal being man-made. A series of locks and blockhouses appeared along the system, a design which is considered unique even to this day. Although it has been recorded that several hundred workers died during the construction phase, most of these deaths were due to disease and only seven were recorded as accidents resulting in death. Once the canal was completed, many workers were hired as lockmasters.

"Colonel By had argued that one of the chief benefits of the Rideau Canal would be that [squared cut] timber could be cut and shipped from the banks of the Rideau River and adjoining lakes. Indeed, even before its official opening, timbermen were using the Canal. In 1832, a quarter million cubic feet of oak and another quarter million of pine, were cut and rafted out along the Rideau waterway" (Historical Planning and Research Staff 1981: 103). The period of squared cut timber was from 1812 right into the 1870s. This was then overlapped, and overtaken, by the trade in sawn timber, which flourished from 1832 to 1933 (ibid: 104).

Of major importance to the Rideau Canal was its use for transportation and communications. Water transportation dominated until the 1850s, then the railways had an impact in the latter half of the 19th century to about 1918, and then it was superseded in importance by the use of vehicles.

"For a decade [1835 – 1847] the Rideau Canal provided a key link to the most important transportation network in the Province….

Upper Canadians had refused to help pay for the construction of the Rideau Canal, believing it to be strictly a benefit to the military. The commercial interests of the Province instead favoured the canalization of the St. Lawrence River … The British at first proposed to construct the Rideau Canal as a simple bateaux channel that would have been adequate for military needs. Colonel By, however, recognizing the commercial potential of the route, succeeded in having it built to a width of thirty-three feet, large enough for steamboats" (ibid: 135-136).

The Rideau Canal lost its importance as a principal transportation route following the canalization of the St. Lawrence River. However, it remained important to local trade – being the route for transportation of "agricultural, mineral, and forest industry products" and withstood the competition of railways. By the 1930's, the "cheese boats" and lumber barges essentially no longer plied the Rideau Canal waters. Instead, there was an increase in passenger trade, and the Canal was marketed for scenic excursions (ibid: 138).

The first vessel to navigate the entire length of the canal was the steamboat **Rideau** owned by Robert Drummond. It departed from Kingston on May 22, 1832 and arrived in Bytown on May 29th. Lieutenant Colonel By, along with his wife and children, were passengers aboard the **Rideau**. Lieutenant Colonel By went seriously over budget, and no doubt, as a result, he was recalled back to England where he faced inquests regarding his spending. He received no penalties; his work was never properly recognized until well after his death on February 1, 1836.

In 1925, the Rideau Canal was declared a National Historic Site of Canada and, in 2007, a UNESCO World Heritage Site. In 2000, the Rideau River was named a Canadian Heritage River.

3.1.3 The Study Area

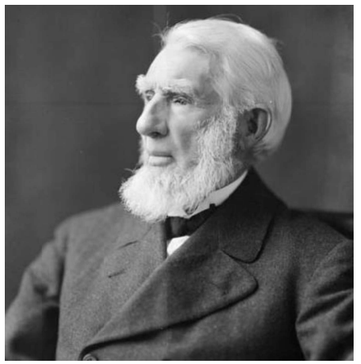
A Stage 1 archaeological assessment (land) was conducted by the Central Archaeology Group Inc. (2017) and the previous MTO Environmental Assessment and Planning Study (2007) but these two studies did not address the archaeological concerns of the canal itself as required by owner of the Rideau Canal, Parks Canada. In accordance with the request by Parks Canada, this Underwater Archaeological Assessment has been undertaken.

The City of Ottawa, as it is known today, owes its existence to the Rideau Canal and Lieutenant Colonel John By. During construction of the canal, it was imperative that there be a home base for the workers and for the Royal Engineers. Barracks were built for the Engineers at the site just behind the current Parliament Buildings known as Barracks Hill. At this site, the Royal Engineers built three barracks, a hospital and some ancillary buildings. Lieutenant Colonel By believed the site would make an excellent military base and drew up extensive plans for it. However, his idea was not approved and a full base was not built. The barracks along with many other bunkhouses built for the workers gave rise to the city known today as Ottawa.

The first swing bridge at the Study Area was constructed during the spring and summer of 1882 by the Canadian Atlantic Railway (CAR). This was a small regional company established in 1880 by John Rodolphus Booth, a lumber baron and business visionary who, by 1879, held one of the largest lumber conglomerates in North America. Key to his success was his ability to transport his lumber smoothly and efficiently without any interruption to production. If he was to continue as the most successful lumber man in the Ottawa Valley he felt that having a well thought out railway system was a complete necessity, both as a method of transport and a way to reach other markets (Figure 10). Together with his partners, William Perley and G. C. Nobel, he began by purchasing and merging two smaller railway charters, the Montreal and City of Ottawa Junction Railway Company and the Coteau and Province Line Railway and Bridge Company. This merger was the beginning of CAR.

Construction on the new track began in 1880 with trains coming through Ottawa by 1882. The new company was successful from the beginning. Owing to the fact that Booth insisted on footing most of the bill for the new track himself meant that there was little to no debt after construction. His lumber also provided an immediate customer for the company. Later he would obtain a charter for another line running into Vermont, hence taking his business into United States markets. Eventually the company no longer catered to just the lumber business but also to tourism and pleasure trips with regular train service taking riders in and out of the Ottawa Valley.

Figure 10: John Rodolphus Booth



Early in its charter, the Canadian Atlantic Railway built two rail bridges, one across the Rideau River and the other across the Rideau Canal at Ottawa. The latter was the first swing bridge spanning the Study Area. Part of Order-in-Council PC 1882-424 issued March 8, 1882 read as follows:

Approved application by the CAR for authority to cross the Rideau Canal by means of a swing bridge to be constructed at a point near the City of Ottawa, Stewarton, shown on a plan submitted.

The Chief Engineer of Government Railways further stated that the approach of the bridge on the Stewarton side had to be made either of open work or have openings sufficient to allow water to flow freely. There were also to be properly guarded piers for the bridge when open and the superstructure of the bridge had to correspond to the centreline of the Rideau Canal. Finally, the opening for a navigable channel on the sides of the centre pier for the swing bridge was not to be less than forty feet wide. The criterion was quite handily met with rail yards and wharves eventually built on both sides of the canal. A railway station was also built just west of the bridge on Elgin Street. Referred to for many years as simply the “Elgin Street Station”, the site would serve for a time as the head office for the CAR (Figure 11).

The contract for construction of the bridge was awarded to John O’Leary, a well-respected contractor in Ottawa who, at the time, was also serving as Alderman for the St. George Ward. The contract for the iron work was given to the Toronto Bridge Company. A perusal of the Ottawa newspapers of the day gives a very detailed account of the progression of construction. The Ottawa Free Press edition for March 4, 1882 reported the awarding of the contract to Alderman O’Leary who reported on April 14th that work was progressing well. He further reported to the Ottawa Citizen on May 23rd that the contract will be “easily met” within the time frame assigned. Two days later it was reported

that the piers were almost completed and preparation for the rest of the work was moving rapidly. The bridge had a centre pier and two side abutments. The material for the completion had almost entirely arrived and placed on the ground. The July 15th edition of

Figure 11: Elgin Street Station – Canada Atlantic Yard Office – 1886



the Citizen recorded that 15 cars loaded with iron work had already arrived by rail with three more to come. August 2nd was an important day with the first train engine crossing the bridge. As a test run, Engineer Joe West successfully drove the "Georgia" across the bridge. Several days later, there was a further test run when an engine and three cars loaded down with heavy cargo successfully crossed the bridge. This was a test to see how the new bridge handled a heavily weighted train (Figures 12 to 13).

Figure 14, although not provided with a date in the Library and Archives of Canada, was also a photograph taken by Topley. Given that Figure 13 is one of Topley's photographs, it is likely that this photograph in Figure 14 also dates to the same time period. In Figure 14, is a view from the swing bridge (not certain if this is upper or lower adjacent reach) showing many boat houses or related marine/railway infrastructure.

Figures 15 and 16 illustrate a map dating from 1894 and another photograph of the swing bridge with the bridge master. It should be noted that the bridge master cranked the bridge open and closed by means of a hand wheel in the centre of the bridge. This was

common practise where the availability of steam, compressed air and electricity were not available due to the distance from a locomotive round house. The well balanced, lubricated and maintained swing bridge and remote turn table centre pivots allowed man power to be used to turn them. (Exporail, Canadian Railroad Museum, Montreal, Saint-Constaint/Delson, South Shore of Montreal – G Bell BT Engineering, personal communications April 30, 2018)

Figure 12: Opening Day – Swing Bridge – Sept. 1882 (LAC PA12201)

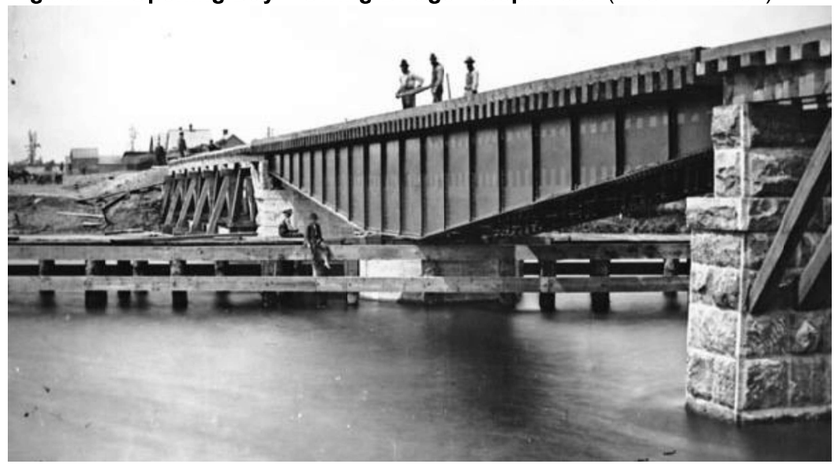


Figure 13: Photograph by William Topley of Topley Studio (1902) LAC PA013244



Figure 14: Possible Boat Houses by Swing Bridge (no date) (MIKAN 3318514)



Figure 15: Ottawa Map 1894 – Archives of Ontario



Figure 16: Circa. 1890 - semaphore signal in the centre with the bridge master (LAC – Ballantyne)



The opening of the new bridge coincided with the maiden excursion of the Canadian Atlantic Railway which commenced September 30, 1882 at 8:00AM. The trip was attended by invitation only. About 300 of the 500 invitees were in attendance. The guests included many dignitaries and businessmen as well as directors of CAR. Among the guests was John Rodolphus Booth, along with his wife and children, who rode in one of the head cars. The 12 hour trip commenced at the Elgin Street Station and proceeded to Couteau with a number of stops along the route. At each stop, the train was met with cheering crowds as speeches and press opportunities were given. The entire trip took 12 hours and covered nearly 100 miles. Mr. Booth's new rail company was well on its way to success.

Early on the morning of August 12, 1891, a serious accident took place on the swing bridge when a moving locomotive and two cars fell into the canal while the bridge was open for an oncoming vessel. At the Elgin Street Station, on the west side of the canal, engine #33 and three attached cars waited to be shunted to a load of cars heading east. After inspecting the engine, Engineer Michael McGaffney began walking into the station to obtain his orders. As he dismounted the engine he instructed Fireman Fred Page to take the engine and cars to the shunt located about 40 yards away. At the same time, the tug **Minnie Bell** was approaching and whistled for the bridge master to open the

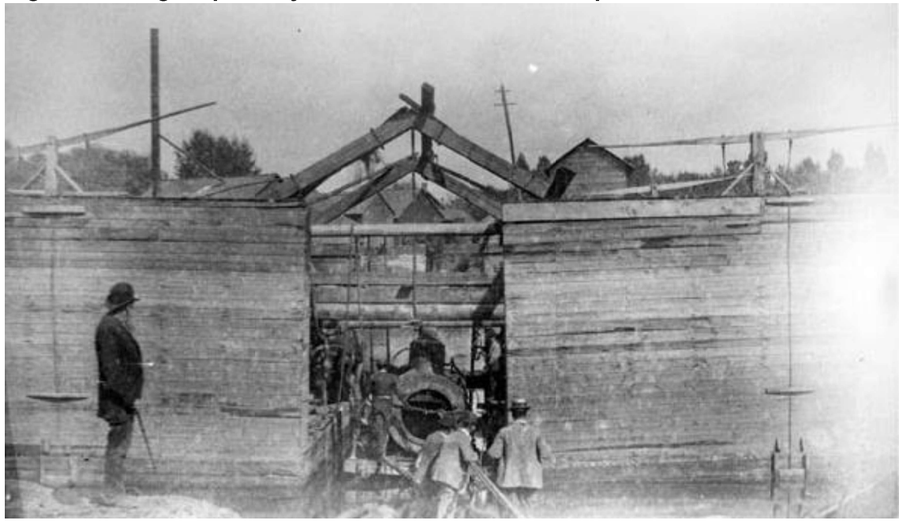
bridge. After sounding all signals, the bridge master opened the bridge and motioned the **Minnie Bell** to come through. The bridge master and the captain of the tug simultaneously noticed the quickly approaching train that did not appear to be stopping as signaled. With the bridge master frantically waving his arms and the **Minnie Bell** continuously ringing her bell while attempting to pull back, Fireman Page finally saw the open bridge but it was too late to avoid disaster. The engine, tender (coal car) and first car tumbled into the canal and quickly sunk beneath the water. The hot coal hitting the water caused a loud hissing and an enormous cloud of steam. Before the engine hit the water, it turned over completely in the air landing on its back into the water. The tender landed on top of the engine while the boxcar, loaded with wooden laths, broke in two sending wood and debris into the water. Fearing the worst for Fireman Page, the bridge master and various other witnesses were shocked, but relieved, to see that he had managed to jump from the engine and was now swimming to the pier with only a few bumps and scratches to show for his ordeal. Miraculously, there were no injuries and, owing to the fact that the engine and cars sunk completely below the water surface, there were no delays in further canal activity throughout the remainder of the day. There was also no damage to the bridge.

Mechanical Superintendent Morley Donaldson was given the difficult task of clearing away the debris and raising the engine from the canal. The next two days were spent removing the broken boxcar and strewn laths and stripping the tender to its frame. For the latter task, a large barge was obtained to assist. On the third day, Superintendent Donaldson attended at Montreal to secure barges to raise the engine. On the fourth day, Mr. James Rouleau, a diver with the city waterworks department, went into the waters of the canal to observe the wreckage. He found the engine completely intact although lying upside down. On the same day, the stripped down tender was retrieved from the water by a group of men under the supervision of a Foreman Holtby. They were able to work the tender down the canal away from the main accident area toward the Silicate Brick Company where timbers were placed under the tender and rails attached sloping up to a flatcar. Ropes and chains attached to a pulley were then used to haul the tender onto the flatcar. The raising of the 70 ton engine was not as easy or as timely. On September 7th, nearly a month after the accident, the engine was finally raised using a combined system of pontoons and jacking (Figures 17 and 18).

Figure 17: Sept. 1891 – Preparation to retrieve sunken engine – LAC PA127265



Figure 18: Engine partially removed from water – Sep. 1891 – LAC PA127267



In the aftermath of the accident, Fireman Page lost his job, and, the engine was dried out and put back into service. And on an odd but interesting note, the bell from the engine was cleaned up and, several years later, donated by CAR to the nearby Holy Trinity Church for the bell tower. Some years later, a system of chimes was introduced and the bell was given to St. Augustine's Church in Newington where it remains active. The swing bridge continued in operation following the accident (Figure 19).

Figure 19: June 1902 – NW quadrant near CAR yard – Topley Collection –LAC PA2812



On August 23, 1907, a second accident took place at the bridge although, this time, no machinery went into the water. Just after 6:00AM, Engine #451 with its tender was backing through the railyard to be attached to the daily eastbound freight train. Upon reaching the edge of the bridge, the engine began inexplicably speeding up and derailed, going the entire length of the bridge riding on the ties. The engineer and fireman were finally able to stop the engine just as the tender became suspended over the edge toward the water. Fortunately, it remained secured to the engine and did not fall into the water. It was two hours before crews were able to lift the tender back onto the badly damaged track and haul the train off of the bridge. The undercarriage of both the engine and tender were badly damaged and the swing bridge needed new rails and ties. All cleanup and retrieval was once again supervised by Morley Donaldson who had been the mechanical superintendent for the 1891 accident, and the swing bridge and associated activities continued (Figure 20).

Figure 20: Train approaching bridge – 1911 – LAC PA9936



In 1903, the government announced plans for a new transcontinental railway project, at which point, John Rodolphus Booth put the Canadian Atlantic Railway up for sale. In recent years he had suffered business losses due to major fires at some of his railyards. And, after nearly 25 years of operation, various repairs were needed to tracks and equipment. To Booth, it must have seemed like a good time to get out. The Grand Trunk Railway (GTR) had for some time expressed interest in purchasing the CAR and, in 1904, Booth agreed to sell. It took 10 years for the government to approve the sale during which time the GTR leased and operated all property from the CAR including the Rideau Canal swing bridge.

The Grand Trunk Railway was a British company owned by a group of private British investors operating out of London. The company arrived in Canada during the mid -1850s and built a line between Toronto and Montreal. They raised capital through a system of bonds with interest payments attached. However, this often proved to be unprofitable since bond owners would miss payments and the GTR would be cash strapped. In 1861, the company was in such bad financial shape that the government gave them a $15 million dollar bailout. Afterwards, the company converted their bond system to that of a share hold system which proved to be much more lucrative.

Even with the new share holder system, the GTR continued their financial woes. Always wanting to play it safe, they preferred to only build and invest along already proven routes instead of focusing on the future. Given the fact that Canada was growing quickly with more provinces entering Confederation, this "play it safe" attitude was not always welcome. It was likely this desire to stick with the known as opposed to the unknown that

sparked the company's interest in purchasing the CAR, a tried and true railway, serving along the very established Rideau Canal and into the United States.

It was the GTR who, in 1912, replaced the rail swing bridge with a new deck plate girder swing span. A series of orders allowed for its replacement. They were Order-in-Council 1910-2389, BRC Order 12752 (January 13, 1911) and BRC Order 15838 (January 24, 1912). The new bridge had a ladder and catwalk system meaning the bridge master was not required to stand at the centre bridge for the duration of his shift.

The replacement bridge was not met with the same fanfare as its predecessor, possibly because it did not coincide with a new railroad and/or passenger system as in the case of the Canadian Atlantic Railway. Nonetheless, the new bridge was open for business by the summer of 1912.

As with the first bridge, the second one had no interlocking system. This meant that, during the navigation season when vessels were in the water, all trains had to come to a full stop before continuing across the bridge. During the winter when the canal was frozen, the bridge was secured allowing trains to move normally. Stopping westbound trains proved particularly difficult since additional engines were sometimes required to help bring full tonnage trains into the rail yard. This often resulted in additional smoke and noise which was a particular nuisance during the navigation season. As a solution, an interlocker was put into place in 1940. This was authorized by order #59374 dated July 11, 1940. Order #60695 dated May 12, 1941 brought the interlocker into operation. Unlike most other interlockers, the order did not provide for the installation of approach signals. This meant that all trains approaching the bridge had to maintain a slow speed of ten miles per hour. This was not a problem since the rail yards were in close proximity to the bridge and slower speeds were a natural occurrence. A small cabin housing a six lever frame was built on the east side of the canal. There was a separate lever for east and west bound signals as well as a bridge coupler power switch, bridge lock and eastbound and westbound point derails (Figures 21).

The replacement swing bridge was in use for just over 50 years (Figures 22 – 26) until the rail line was abandoned. The bridge was officially removed from service on February 3, 1963 and handed over the next day to the National Capital Commission, the Crown Corporation established in 1959 responsible for the planning and improvement of Canada's capital.

Figure 21: Post 1940 – second bridge with installed interlocker and control house (LAC)



The 1965 Highway 417 bridge resulted in a widening of the navigation channel, and the construction of two sets of six piers constructed in the water. These piers were in the approximate location of the 1832 canal walls.

A search for architectural and engineering drawings on the Canadian Library and Archives site had a negative return.

According to the Small Craft Guide of 1984 (Department of Fisheries and Oceans 1984: 81) the Rideau Canal follows "an irregular course through the suburbs and the city of Ottawa" and was constructed to bypass the Rideau River rapids. In 1984, canal depth ranged from 6 to 15 feet, with a constant depth being maintained throughout navigation season. The Queensway bridge is noted with a clearance of 22 feet.

According to the **Rideau Canal National Historic Site of Canada Submerged Cultural Resource Inventory** (nd: 212), the Study Area forms part of the Rideau River: Hartwell to Ottawa Locks (30M38) site. This particular section is identified in the above report as number 3705, Isabella Street Railway Swing Bridge. A summary of the information supplied above appears in the inventory.

Figure 22: Post 1940 Aerial Photograph of Study Area (courtesy of Parks Canada)



Figure 23: Fire Insurance Map – 1956 (LAC)

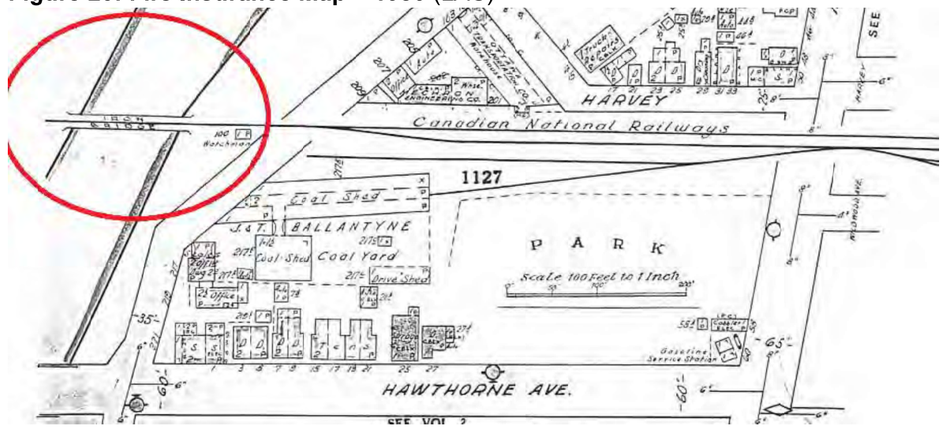


Figure 24: Aerial Photo – 1956 – (LAC)



Figure 25: 1961 Photograph of Train Approaching Swing Bridge
(courtesy of Parks Canada)



Figure 26: Boat with Open Swing Bridge (courtesy Parks Canada) post 1910



3.2 Property Visit

A property visit was conducted on April 19th, 2022 while canal water height was still at low at winter draw-down depth. Both sides of the canal walls were examined for evidence of any remnants from the earlier two swing bridges. In addition, the interior of the canal was also examined visually for possible evidence of the former centre pier or any evidence of the former derailment accident, or any other cultural materials.

Figure 27 illustrates the location from which the colour digital photographs were taken (keyed to Figure 8). Appendix B provides descriptors of the photographs, and orientation of the images. Figures 28 - 43 illustrate the photographic images taken for the property visit.

There was no evidence in the canal itself or along the walls of vestiges of the former two swing bridges or of the derailment accident. Noted were the remnants of a two wheel bicycle, debris from trees, and general refuse.

Concrete spalling is apparent in the photos of the canal walls.

Figure 27: Location of Photographic Images from Property Visit



Figure 28: East side facing SSE from N end



Figure 29: East side from N end facing WSW



Figure 30: East side from approximate midpoint facing WSW

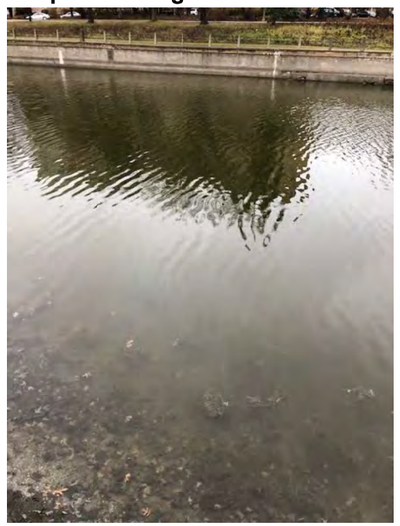


Figure 31: East side facing SSE at South End



Figure 32: East side looking WSW at South End

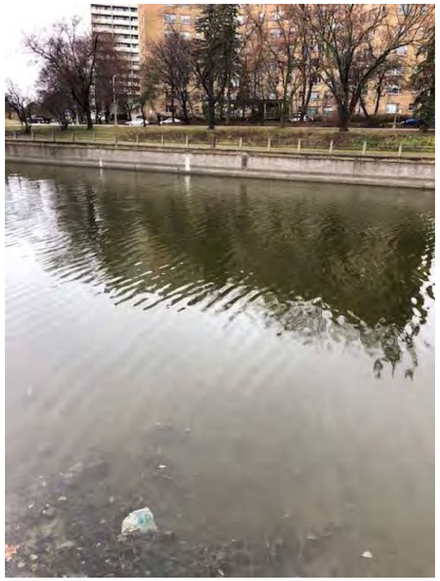


Figure 33: East side, south end facing down at log (not in situ)



Figure 34: East Side, south end facing NE

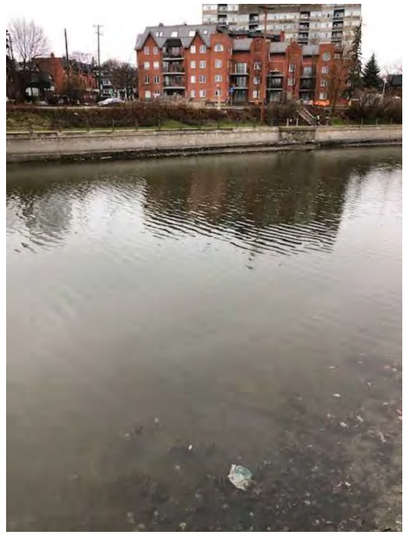


Figure 35: West side from S end facing NE

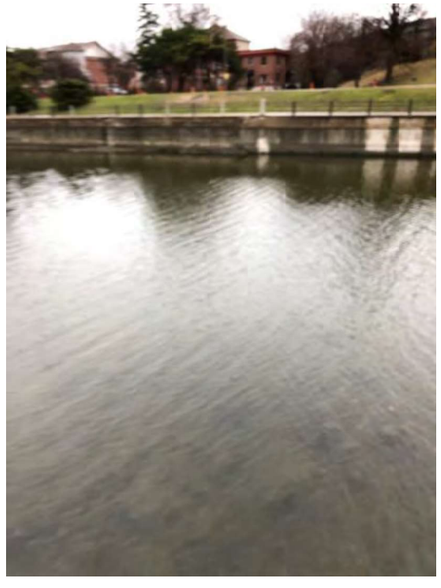


Figure 36: West side, south end, visibility near canal wall



Figure 37: West side, from south end, facing north

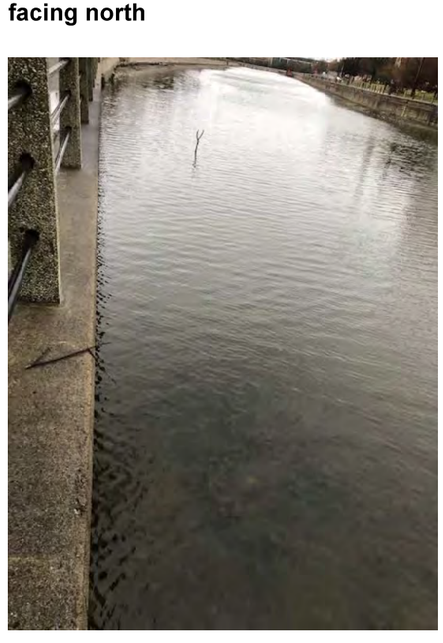


Figure 38: West side, approximately midway, facing down, 2 wheel bicycle



Figure 39: West side, approximately midway, facing NE, limb from tree

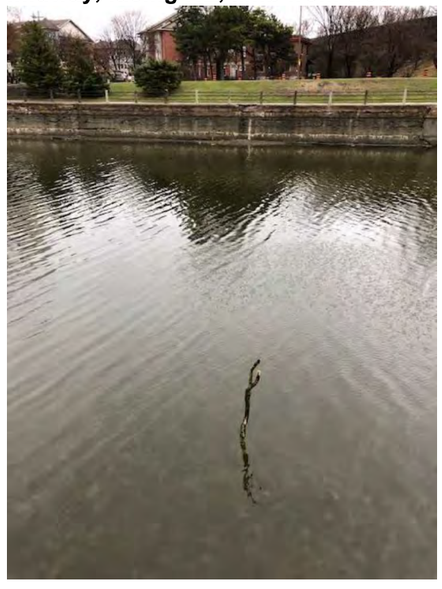


Figure 40: West side, north end, looking down at water visibility



Figure 41: West side, north end facing NE



Figure 42: West side. North end facing S

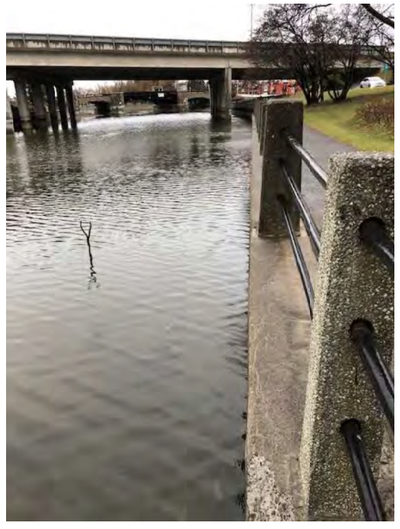
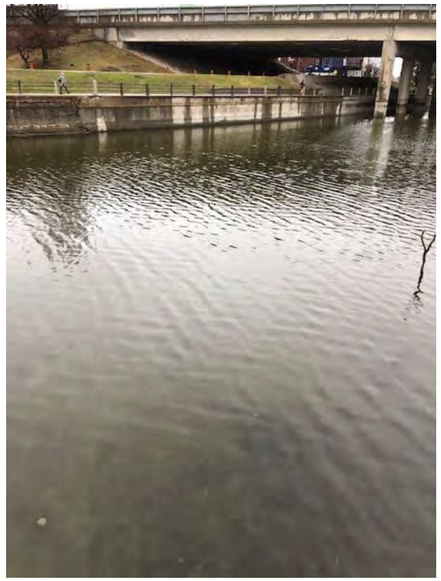


Figure 43: West side, north end facing NE



4.0 Conclusions and Recommendations

"Recognition and respect for the evolution of the canal is supported by the Statement of Outstanding Universal Value of the Rideau Canal as a UNESO World Heritage Site. Specifically, the canal's inscription on the World Heritage List recognizes that the inscribe [sic] property "includes all the main elements of the original canal together with relevant late changes in the shape of watercourses, dams, bridges, fortifications, lock stations and related archaeological resources. The original plan of the canal, as well as the form of the channels, has remained intact [Decisions Report (Christchurch, 2007): WHC=-7/31.COM/24, pp. 164=5: Decision 31 COM 8B.25]" (Festarani 2017).

The above has been considered in the conclusions and recommendations for the Study Area.

Transportation in the canal has evolved over time, particularly since the initial canal construction in 1832. There were two swing bridges constructed in the Study Area; the first in 1882; and, the second in 1912. The latter was removed for the current bridge, which was constructed in 1965.

At the time of the construction of the first swing bridge, the canal walls were narrowed for the purposes of supporting the railway bridge abutments, and a centre pier was also constructed. There is no tangible evidence of any of the second 1912 swing bridge still remaining within the canal, or of the "incident" where the train entered into the canal (it was totally recovered). The 1965 bridge construction removed all evidence of the former swing bridges, widened the canal again at this location. The current canal configuration closely approximates what it would have been in the initial 1832 canal construction.

Based on the background research, and the current condition of the canal, the following recommendations are made:

- There is no requirement for further archaeological assessment of the Study Area, including the 2021/2022 additional area, the subject of this report.
- If development is approved by Parks Canada, and any archaeological resources are located during the construction phases, all work is to be halted and Parks Canada immediately notified. Based on their investigation of the "discovered" archaeological features/material, Parks Canada will recommend next steps to the proponent.

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Appendix A: Correspondence from Parks Canada

Jonathan.Moore@pc.gc.ca
RE: Info Bulletin//Bulletin d'information
To Scarlett Janusas
You forwarded this message on 11/6/2017 11:37 AM.
This message is part of a tracked conversation. Click here to find all related messages or to open the original flagged message.
We removed extra line breaks from this message.

Hi Scarlett,

Yes, I agree. Sounds like a prudent approach, especially if you can get some new primary research done, as we discussed.

With all of the rain there is still quite a bit of water in the canal, but the edges are mostly exposed. Also, I think any new construction or modification to the bridge will be nearer to the edges.

Cheers,

Jon

From: Scarlett Janusas <jscarlett@amtelecom.net>
To: Jonathan.Moore@pc.gc.ca
Cc: 'Gord Bell' <gord.bell@bteng.ca>
Date: 06/11/2017 08:51 AM
Subject: RE: Info Bulletin//Bulletin d'information

Hi Jon - so, wondering if you received my previous email with regards to this project. Given that that there is no benefit to doing sidescan sonar when a simple visual of the canal while it is drained will suffice - no point in conducting that methodology. The infrastructure doesn't allow for mag (too much interference). The soils cannot be disturbed as per your
report - highest risk - so we wont' be doing that. Would background
research and construction monitoring suffice?

Regards

Scarlett

-----Original Message-----
From: Jonathan.Moore@pc.gc.ca [mailto:Jonathan.Moore@pc.gc.ca]
Sent: Friday, November 3, 2017 10:34 AM
To: Scarlett Janusas <jscarlett@amtelecom.net>
Subject: Fw: Info Bulletin//Bulletin d'information

FYI

----- Forwarded by Jonathan Moore/NOTES/PC/CA on 03/11/2017 10:33 AM -----

From: Sandra Limoges/NOTES/PC/CA
To:
Date: 02/11/2017 01:38 PM
Subject: Fw: Info Bulletin//Bulletin d'information

Good Afternoon,

Please be advised that, as per the Information Bulletin attached and below, recent testing has revealed contaminated sediment in the bed the Rideau Canal from Bronson Street to the Ottawa Locks and as such this section of the Canal is being listed on the Federal Contaminated Sites Inventory.

The contaminated sediment is trapped below the canal bed, and therefore presents a low risk to human health. It is generally only a concern if someone were to have direct contact with it.

Testing has confirmed that levels of contaminates do not exceed the safety factors established by the Canadian Council of Ministers of the Environment Water Quality Guidelines, therefore future in-water construction work can proceed with appropriate mitigating measures in place. Please see attached excerpt from the Golder & Associates report entitled Environmental Management Planning Considerations, Ottawa Wall Repairs Rideau Canal, Ottawa Ontario dated September 7, 2017. Entire report is available for review upon request.

(See attached file: Mitigation Measures.pdf)

Finding contamination in this section was not unexpected. This stretch of the Rideau Canal has a long history of industrial use, is in a major urban area and other parts of the Rideau Canal in the National Capital Region are also listed on the Federal Contaminated Sites Inventory.

If you have any questions or concerns please contact your respective manager.

Please refer any media queries to Valerie de Winter.

Valerie de Winter
Communications and Media Relations Officer
613-263-7199 X 266
valerie.dewinter@pc.gc.ca

TEST RESULTS FROM SEDIMENT ON THE BED
OF THE RIDEAU CANAL

OTTAWA, ONTARIO, November 2, 2017 – Parks Canada has received the findings from testing performed on the contaminated sediment on the bed of the Rideau Canal in downtown Ottawa from the Ottawa Locks to Bronson Street.
These tests were conducted to identify the scope and extent of contaminated sediment that were identified in January 2017 and to ensure that all appropriate environmental protection measures can be put in place to minimize future disruption of the contaminated sediment on the bed of the Rideau Canal.

Public safety is of the utmost importance to Parks Canada. As the contaminated sediment is trapped in the bed of the canal, we wish to reassure the public that this presents a very low risk to human health. It is generally only a concern if someone were to have direct contact with the contaminated sediments on the bed of the Rideau Canal.

Parks Canada adheres to strict standards of environmental protection and will continue to provide safe and meaningful experiences to visitors along the entire length of the Rideau Canal – whether boating or paddling, or enjoying the National Capital Commission's pathways and skateway along the Canal.

Based on the test results, this section of the Rideau Canal in downtown Ottawa from the Ottawa Locks to Bronson Street is now being listed on the Federal Contaminated Sites Inventory. As this stretch of the Rideau Canal has a long history of industrial use and is in the middle of a major urban area, and given that other parts of the Rideau Canal are already listed on the Federal Contaminated Sites inventory, finding contaminated sediment in this section of the Canal was not unexpected.

Parks Canada will be working with Treasury Board and other partners, including the City of Ottawa and the National Capital Commission, to explore best practices regarding mitigation or remediation of the contaminated sediment in this section of the Rideau Canal in downtown Ottawa from the Ottawa Locks to Bronson Street.

Future construction work will proceed with appropriate mitigation measures in place to ensure environment protection and continued public safety.

If any media representatives are interested in a briefing on this subject, please contact Parks Canada Media Relations at 855-862-1812 or pc.media@pc.gc.ca.

-30-

(See attached file: IBe Rideau Canal contamination report - 485.doc)

Dear Darcie,

I am helping to coordinate the underwater archaeological assessment for the stretch of the Rideau Canal under the Hwy. 417 bridge crossing. I am responsible for the Rideau Canal NHS on behalf of Parks Canada's Underwater Archaeology Team. I have been in communication with Scarlett Janusas who just forwarded to me a copy of the Stage 1 report for Hwy. 417 by The Central Archaeology Group.

I am writing to suggest that some minor additions / changes should be made to this report prior to final submission to the MTCS. My chief concern is that the report does not adequately reflect prior archaeological work by Parks Canada in the canal and that is makes little mention of Parks Canada in general. In fact, the name Parks Canada does not appear in the report, and as far as I know, the consultant did not contact Parks Canada. To this end, one or two statements as to archaeological potential are too sweeping and do not necessarily reflect our views in the case of the canal. I note however that it is sometimes difficult for consultants to learn about work on federal properties, because the results of this archaeological work is not always held by the province.

I believe the report could be improved with some small-scale changes and strategic additions of text. I would be pleased to make these suggestions to the consultant.

With kind regards,

Jonathan Moore
Senior Underwater Archaeologist | Archéologue subaquatique principal Underwater Archaeology Team | Équipe d'archéologie subaquatique Parks Canada Agency | Agence Parcs Canada
1800 Walkley Road
Ottawa, Ontario, Canada K1H 8K3

jonathan.moore@pc.gc.ca
Telephone | Téléphone 613-993-2125 x 204 Facsimile | Télécopieur 613-993-9796 www.parkscanada.gc.ca | www.parcscanada.gc.ca Government of Canada | Gouvernement du Canada

Appendix B: Photographic Image Detail

Photo #	Orientation	Descriptor
28	Facing SSE	East side from N end
29	Facing WSW	East side from N
30	Facing WSW	East side from approximate midpoint
31	Facing SSE	East side at South End
32	Facing WSW	East side at South End
33	Facing down	East side, south end, log (not in situ)
34	Facing NE	East Side, south end
35	Facing NE	West side from S end
36	Facing down	West side, south end, visibility near canal wall
37	Facing N	West side, from south end
38	Facing down	West side, approximately midway, 2 wheel bicycle
39	Facing NE	West side, approximately midway, limb from tree
40	Facing down	West side, north end, water visibility
41	Facing NE	West side, north end
42	Facing S	West side. North
43	Facing NE	West side, north end

Appendix I
Photographic Records



Photo 1: Metcalfe Street Bridge, view northward



Photo 2: Metcalfe Street Bridge, view southward



Photo 3: Elgin Street Bridge, view northward



Photo 4: Elgin Street Bridge, view southward



Photo 5: Rideau Canal Bridge, view northward



Photo 6: Rideau Canal Bridge, view southward

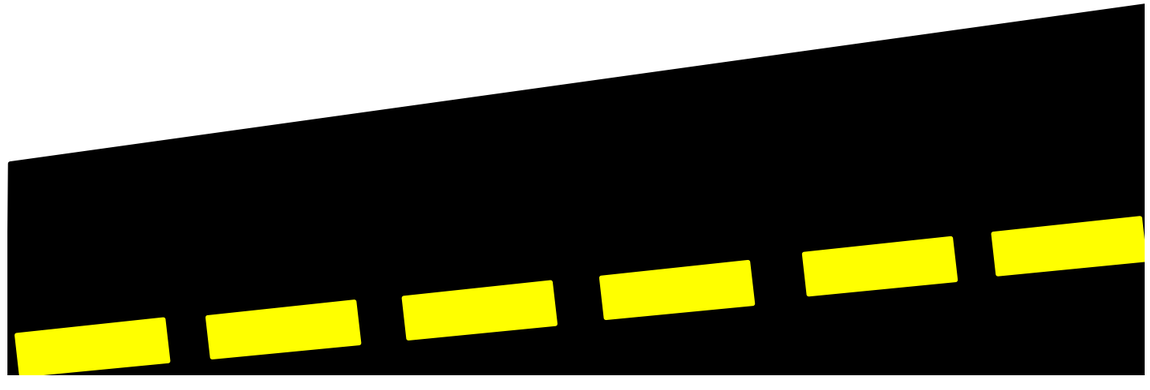


Photo 7: Main Street Bridge, view northward



Photo 8: Main Street Bridge, view southward

Appendix J
Noise Assessment Memorandum and Report



BT ENGINEERING
100 Craig Henry Drive, Suite 201
Ottawa, Ontario K2G 5W3

MEMORANDUM

TO:	Dave Lindensmith	**DATE:**	July 18, 2017
FROM:	Steve Taylor	**BTE PROJECT #:**	17-010
PROJECT:	GWP 4170-13-00 Queensway Downtown Bridges from Metcalfe Street to Main Street Environmental Assessment and Preliminary Design		
SUBJECT:	Noise Analysis Review of Existing Conditions and Background Studies		

As part of the environmental assessment and preliminary design study for the rehabilitation/replacement of 7 structures at 4 sites on the Ottawa Queensway, a noise analysis review has been undertaken. The study area is illustrated in **Figure 1.**

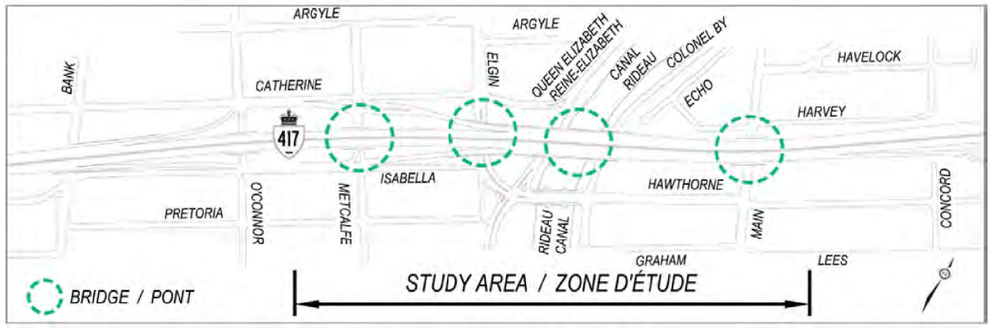


Figure 1: Study Area

A background review has been completed of the following documents:

- Transportation Environmental Study Report for Highway 417 (Ottawa Queensway) from Highway 416 Easterly to Anderson Road Preliminary Design Study and Environmental Assessment (January 2007);
- Centretown Noise Study Highway 417 North Side from Kent Street to Metcalfe (December 2015);
- Glashan School Highway 417 North Side near Kent Street Noise Study & Acoustical Analysis (December 2015).

These reports are included in **Appendix A, Appendix B** and **Appendix C**, respectively.

The previous 2007 study was completed to provide environmental clearance for the planning stage of physical operational and safety improvements to the freeway. These improvements were documented in the 2007 TESR and are illustrated in **Figure 2**.

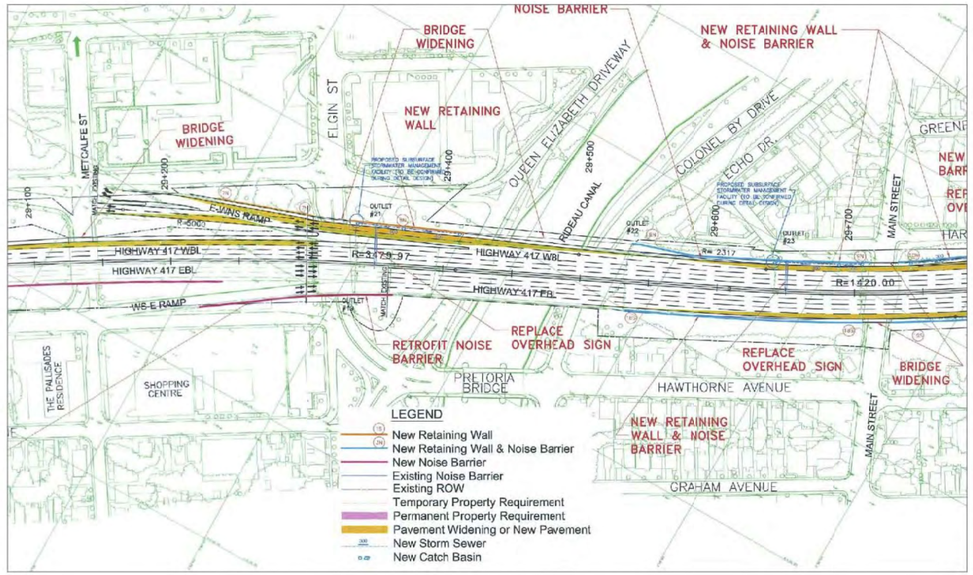


Figure 2: 2007 TESR Noise Barrier Recommendations

The noise barrier changes within the current study area are illustrated in the figure above. The current 2017 EA is focusing on a bridge management plan to rehabilitate or replace 7 structures on the Queensway from Metcalfe Street to Main Street. These bridge management projects will not require any changes to the 2007 EA. Therefore, there are no noise impacts of the works except for construction-related means and methods. These construction operations will be required to meet municipal noise control by-laws.

Since 2007, the MTO have reviewed 2 additional sites for implementation of retrofit noise abatement projects. The recommendations are:

- An approximately 650 m long noise barrier site on the north side of Highway 417, from just west of Kent Street to Metcalfe Street should be added to the Retrofit List. This section is not currently recommended for construction (**Appendix B**).
- No noise barrier is recommended adjacent to the Glashan School (**Appendix C**).

These two additional sites are beyond the limits of the EA Study Area.

The only noise abatement analysis to be completed for the project will be the Nicholas Street noise assessment site. This site involves a review of the residential properties at the end of Harvey Street, Havelock Street, and Montcalm Street (see **Figure 3**). At the request of the property owners, the sites will be analyzed for whether additional noise abatement measures are warranted. A separate technical memorandum will report on whether additional mitigation is cost effective and can achieve a 5 dBA reduction if implemented.



Figure 3: Nicholas Street Noise Abatement Review

Ottawa Queensway Downtown Bridges Preliminary Design and Environmental Assessment Study for Rehabilitation/Replacement GWP 4170-13-00

Noise Assessment

April 16, 2019



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Executive Summary

BT Engineering Inc. (BTE) in conjunction with the Ministry of Transportation of Ontario (MTO) has initiated an Environmental Assessment and Preliminary Design for the Queensway Downtown Bridges from Metcalfe Street to Main Street. This noise assessment follows the approved environmental planning process for Group B projects under the Class Environmental Assessment for Provincial Transportation facilities (2000).

Noise is part of our everyday social and cultural environment. This analysis will determine the noise impacts associated with the rehabilitation/replacement of the bridges. It will also review and provide recommendations on the noise barrier design for the future barrier replacement program, to improve the acoustical effectiveness of the existing barriers.

By rehabilitating / replacing these bridges, this project will not increase traffic volumes on the freeway and therefore will have no project specific noise impacts other than the short term construction related effects.

As per the MTO/MOECC (MECP) Environmental Guide for Noise (Noise Guide), the noise impact assessment was completed in two stages. Stage I followed the Environmental Protection Requirement Noise - 1, as outlined in the Noise Guide, to review the existing noise levels (there will be no noise impacts due to the bridge management plan). The noise levels were compared for an existing condition (the planning horizon for the bridge rehabilitation/replacement with the Nicholas Street ramp realignment) in year 2025 and 10 years after construction completion in year 2035. In order to determine the noise impacts, the comparison was made for sound levels for the Outdoor Living Area (OLA) and/or most exposed side of Noise Sensitive Areas (NSAs). Within the Study Area, sound contours were developed at 5 dBA intervals reflecting changes in topography and traffic volumes without mitigation measures for all alternatives. A Stage II assessment was required because there was one representative receiver site that is currently experiencing a noise level over 65 dBA.

The noise assessment involved the following:

- Confirm there is no acoustical impact of the bridge management project;
- Nine (9) representative receiver sites adjacent to the freeway were modelled to assess the impact on OLA/most exposed side within the NSA within the Study Area;
- A field review of the existing barriers was completed to determine their condition and acoustical effectiveness;
- A noise mitigation table was prepared for the Study Area, indicating proposed modifications and noise impacts; and
- Recommendation on the need for future barrier design to improve acoustical effectiveness required to meet the appropriate MTO and MOECC (MECP) criteria for sound level increases.

Based on the noise assessment, residential properties adjacent to Highway 417 are currently experiencing greater than 65 dBA noise levels without mitigation. The objective of noise control measures is to achieve a greater than a 5 dBA attenuation in the first row of receivers.

GWP 4170-13-00 Queensway Downtown Bridges from Metcalfe Street to Main Street
Environmental Assessment and Preliminary Design
Noise Assessment, April 16, 2019

All existing noise barriers are at the end of their service lives and are recommended to be replaced with 5 m high barriers with absorptive faces. This change, coupled with the lateral extensions of the noise barriers located on the north side of the Queensway, will provide improved acoustical attenuation to adjacent residential areas.

1.0 Introduction

The Ontario Ministry of Transportation (MTO) has retained BT Engineering Inc. (BTE) to undertake a Preliminary Design and Environmental Assessment (EA) Study for the rehabilitation and / or replacement of 7 bridges (4 locations) on Highway 417 (Ottawa Queensway) from Metcalfe Street to Main Street. This study will determine the appropriate strategy for the rehabilitation or replacement of the bridges. The Study Area, as shown in **Figure 1**, is located in the City of Ottawa.

The 2018 noise assessment is a continuation of the previous noise assessment completed for the 2007 *Highway 417 (Ottawa Queensway) from Highway 417 Easterly to Anderson Road Preliminary Design Study and Environmental Assessment Transportation Environmental Study Report (TESR)*. The 2007 TESR reviewed the condition of the existing noise barriers (structural condition) and the need for noise abatement considering traffic volumes and the proposed highway works (assessing impacts with and without the project). The 2007 TESR received environmental clearance for the corridor improvements and provided commitments for abatement of noise sensitive land uses along the corridor. The current bridge rehabilitation / replacement project will not increase traffic volumes on the freeway and therefore will have no project specific noise impacts other than the short term construction related effects.

This noise assessment includes the realignment of the Nicholas Street interchange ramps as a future existing condition (the ramp is expected to be built in 2019 and the Queensway bridge rehabilitations/replacements for this study are expected in year 2025).

The purpose of this noise assessment is to consider existing conditions for Noise Sensitive Areas (NSAs) and assess the effectiveness of the existing noise barriers for abatement. The focus of this assessment is the residential communities to the north and south of the Queensway between the Rideau Canal and Nicholas Street, as shown in **Figure 2**.

Within the Study Area, sound contours were developed using acoustical modelling at 5 dBA intervals, reflecting changes in topography and traffic volumes without mitigation measures for existing conditions (year 2025). The changes in sound levels at NSAs reflect 24 hr Leq's predicted 10 years following the construction of the improvements (year 2035). See **Appendix A** for the sound contours.

A mitigation assessment is carried out for any receiver sites where the proposed roadworks will result in a noise level increase of greater than 5 dBA 10 years after construction (2035) or above 65 dBA. This assesses mitigation (noise control) measures within the right-of-way for noise sensitive receivers. The assessment will examine the effectiveness of the existing noise barriers and provide recommendations for the future replacement program.

GWP 4170-13-00 Queensway Downtown Bridges from Metcalfe Street to Main Street
Environmental Assessment and Preliminary Design
Noise Assessment, April 16, 2019

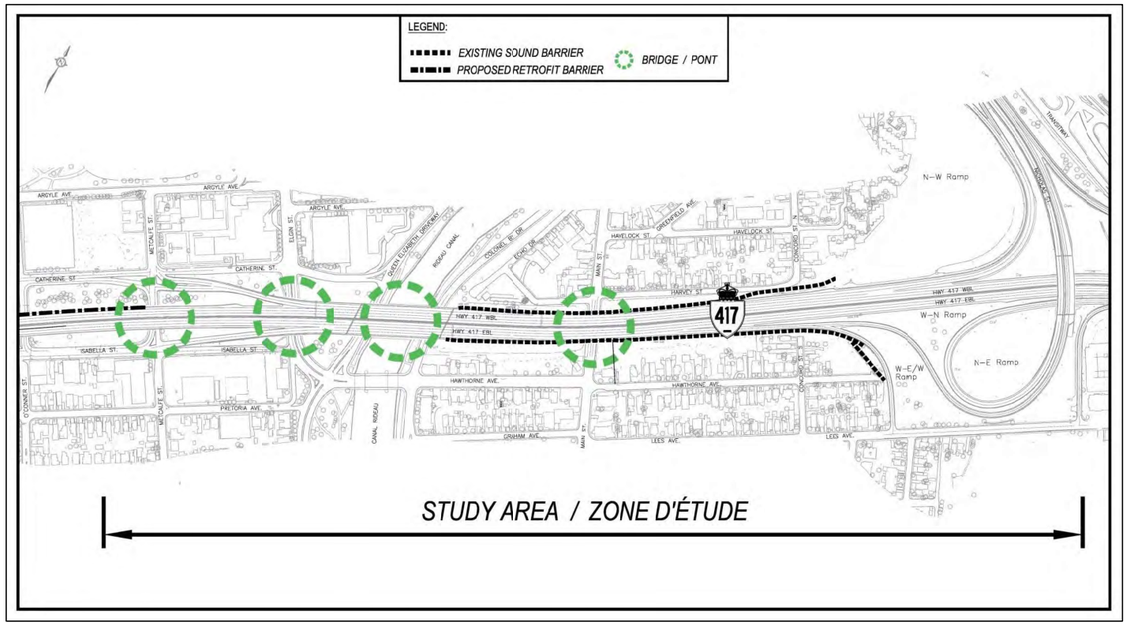

Figure 1: Study Area

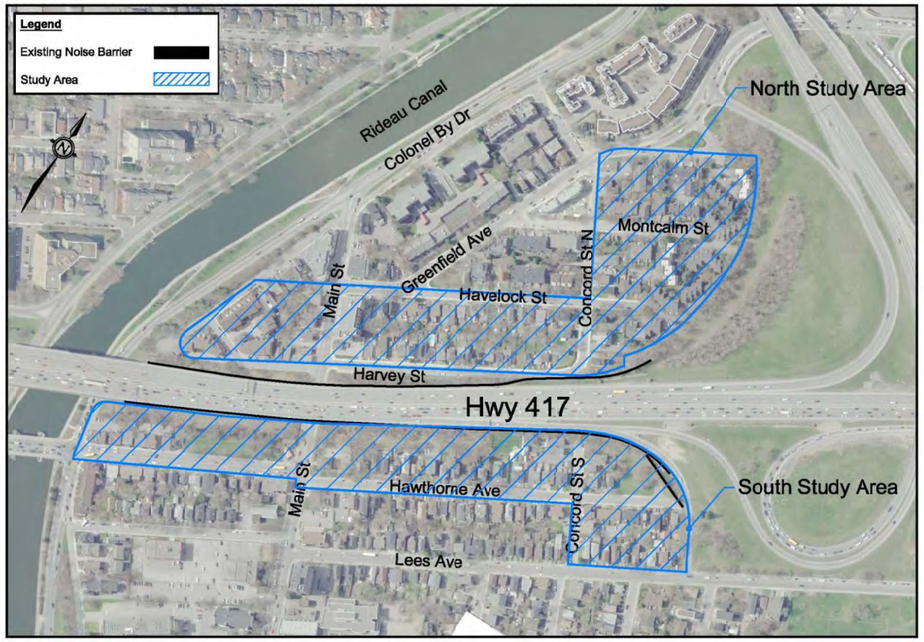

Figure 2: Noise Assessment Study Area

2.0 Background and Context of Report

This 2018 report does not consider the corridor expansion improvements as they have been reviewed and have received clearance under the 2007 Transportation Environmental Study Report. The Nicholas Street ramp realignment is treated as an existing future noise condition (year 2025). For older noise sensitive land uses that existed pre-1977, the MTO has a retrofit program that tests the cost effectiveness of noise abatement for residential areas that were not subject to conditions by developers to consider noise effects. The Ministry's noise barrier retrofit policy is based on addressing, where feasible, noise impacts to outdoor living areas of residential properties. MTO has undertaken a noise barrier retrofit study for Highway 417 in downtown Ottawa to determine the effectiveness of potential noise barriers. As a result of this study, a retrofit noise barrier is proposed on the north side of Highway 417 from Kent Street to Metcalfe Street. Construction of this noise barrier is planned to occur in conjunction with the rehabilitation/replacement of the Bank Street, O'Connor Street, Metcalfe Street and Elgin Street structures. Retrofit reviews were undertaken in close proximity to the current Study Area and are contained in **Appendix B**. No noise barriers are contemplated between Metcalfe Street and Colonel By Drive, as these would provide minimal attenuation to residential properties. The existing low barriers on the Rideau Canal Bridge, while similar in appearance to noise barriers, are to prevent snow from being plowed onto the Rideau Canal, Colonel By Drive and Queen Elizabeth Driveway.

The current EA assignment is for the rehabilitation or replacement of seven (7) bridges, at Metcalfe Street, Elgin Street, Rideau Canal and Main Street. By maintaining these bridges the projects will not increase traffic volumes on the freeway and therefore have no project specific noise impacts other than the short term construction related effects. These short term effects will have to conform to City of Ottawa Municipal Noise bylaws and Provincial legislation described in the MTO Reference Manual for Noise and will be addressed in the subsequent detail design phase and Design and Construction Report.

The purpose of this noise assessment is to consider existing conditions for Noise Sensitive Areas (NSAs) and assess the effectiveness of the existing noise barriers for abatement.

The existing noise barriers protect residential communities both north and south of the Queensway east of the Rideau Canal. No noise barriers are proposed on the Rideau Canal Bridge, as there are no residential noise receivers that would benefit from such a noise barrier and input to date from the EA study is identifying the need to observe the heritage Rideau Canal as drivers pass over this bridge.

The Ministry has long term plans to replace the existing noise barriers on Highway 417, including those on the north and south sides of Highway 417 from the Rideau Canal easterly to Nicholas Street. It is currently envisioned that these existing noise barriers will be replaced in conjunction with the rehabilitation (or replacement) of the Highway 417 bridge over Main Street. The study therefore is reviewing the effectiveness and termination treatments for possible improvement. The subsequent sections of this report assess the acoustical effectiveness of the replacement barrier designs in these two locations.

3.0 Methodology

This evaluation was conducted within the Study Area to determine the impact to adjacent residential dwelling units as well as what mitigation measures should be incorporated in the final design as one component of the EA process.

The noise assessment utilized The Traffic Noise Model (TNM) 2.5 noise software program to determine 24-hour equivalent sound levels (Leq) for the roadway traffic. The assessment was performed in accordance with MOECC (MECP) and MTO Noise Guidelines and MTO/ MOECC (MECP) Noise Protocol, MTO's Environmental Guide for Noise. The noise assessment involved the following:

- Confirm there is no acoustical impact of the bridge management project;
- Nine (9) representative receiver sites (as shown in **Figure 3**) adjacent to the freeway were modelled to assess the impact on OLA/most exposed side within the NSA within the Study Area;
- A field review of the existing barriers was completed to determine their condition and acoustical effectiveness;
- A noise mitigation table was prepared for the Noise Assessment Study Area, indicating proposed modifications and noise impacts; and
- Recommendation on the need for future barrier design to improve acoustical effectiveness required to meet the appropriate MTO and MOECC (MECP) criteria for sound level increases.

Within the Study Area, sound contours were developed using acoustical modelling at 5 dBA intervals reflecting changes in topography and traffic volumes without mitigation measures for existing conditions (year 2025). The changes in sound levels at NSAs reflect 24 hr Leq's predicted 10 years following the construction of the improvements (year 2035).

No project specific noise impacts for our Queensway Downtown Bridges project other than the short term construction related effects (described in **Section 8.0)** are expected. The general overall procedure outlined in this report and the noise assessment included:

- Identification of the noise sources and Noise Sensitive Areas (NSA's) within 500 m of the highway.
- Establishment of receiver sites in the NSA's.
- Prediction of future roadway traffic volumes (2025 horizon for bridge construction).
- Prediction of the equivalent sound levels for the 2035 horizon planning year.
- Future noise level calculations were undertaken using a 5 m noise barrier and no step down at the terminus.
- A comparison of the successful noise abatement alternatives and the consideration of the need for noise mitigation measures.

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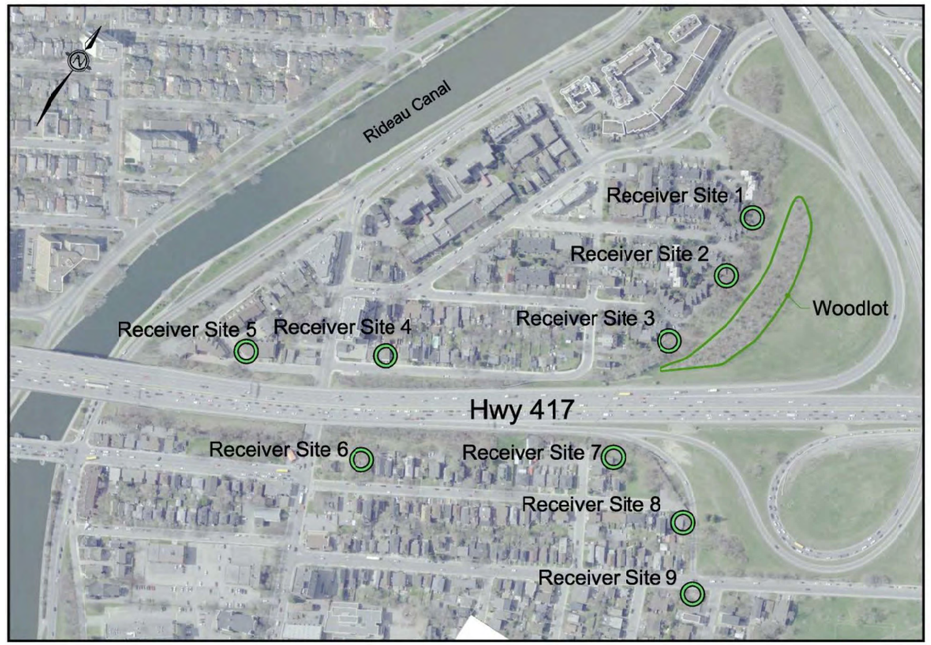


Figure 3: Representative Receiver Site Locations

Within the NSA, acoustical modelling was completed to assess the impacts at the most exposed side. The modelling assessed receiver sites located 3.0 m from the building face and 1.2 m above the existing ground.

Year 2016 Average Annual Daily Traffic Volumes (AADT) for this segment of Highway 417 within the Noise Assessment Study Area were obtained from MTO. MTO requires the use of the highest AADT or SADT for noise calculations. However, the 2016 AADT and SADT volumes are equal for this segment of Highway 417, and for the purposes of this report the projected 2025 volumes will be referred to as AADT volumes. For prediction of future sound levels, the use of the 10 year planning horizon beyond the earliest planning construction year is required (2035).

Residents in the northwest quadrant of the Nicholas Street interchange have expressed concerns with regards to existing noise.

The following input variables were used or considered in the TNM 2.5 noise software program for generating sound levels:

- Topography (hills, flatlands) – the site includes a ravine and elevated berm
- Existing attenuation due to shielding from barriers (natural or man-made, including dense rows of houses) – the site includes dense rows of houses and existing noise barriers

- The intermediate ground surface (hard surface reflects sound, soft surface absorbs sound)
- Distance, in metres, from source to receiver, using the centreline of the road as the source
- Receiver height, in metres – 1.2 metres above ground level at 3.0 metre offset from a residence (townhouse or single family)
- Posted speed limit (Queensway is 100 km/h, Nicholas Street is 60 km/h, the on-ramp is 40 km/h)
- Depth and type of woods (0-30 m, 30-60 m, 60 m or more) – this site includes a woodlot adjacent to the Queensway/Nicholas Street N-W ramp
- Roadway grade (slope)

4.0 Existing Data

4.1 Noise Sensitive Area

The existing land use within the Study Area is residential to the north and a mix of commercial and residential to the south, including Ballantyne Park.

North of the Queensway, the land is zoned residential and traditional mainstreet. Within the residential zones to the northeast are detached/semi-detached residences. Within the residential zones to the northwest are row housing and condo/apartment buildings. Within the traditional mainstreet zone to the north are mixed retail and residential properties, including a furniture store, detached residences and condos.

South of the Queensway, the land is zoned open space, leisure, traditional mainstreet and residential. Within the open space zone to the southwest is Ballantyne Park. Within the traditional mainstreet zone to the southeast is vacant land adjacent to the highway as well as mixed retail, commercial and community properties including construction office, Scotiabank, fitness studio, hair cutters, restaurants, bicycle shop, nail salon, Ottawa Chinese Bible Church and Peace Latvian Ev Lutheran Church. Within the leisure zone to the southeast is the Old Town Hall and community centre (subject to the heritage overlay). Within the residential zone to the southeast is vacant land adjacent to the highway as well as detached/semi-detached residences.

4.2 Existing Noise Barrier Condition

The noise barriers were inspected and determined to be in poor condition with rusted steel. They have a 4 m barrier height with a step-down terminus. The noise barriers are at the end of their service lives and are recommended for replacement.

4.3 Existing Noise Barrier Replacement Design Details

Residents who live north of Highway 417 from the Rideau Canal easterly to Nicholas Street, as well as south of Highway 417 from the Rideau Canal easterly to Lees Avenue/Main Street off-ramp, currently experience sound from the freeway. There is an existing noise barrier on both the north and south side of the Queensway to reduce noise levels, as shown in **Figure 4**. The existing noise barrier heights range from 3 to 4 m.

The north side noise barrier between the Queensway and Harvey Street terminates before the woodlot reaches an effective acoustical depth of 30 m. The termination of this noise barrier also steps down in the termination zone, as shown in **Photo 1** and **Figure 5**. The south side noise barrier between the eastbound off-ramp and Hawthorne Avenue has the same configuration through the termination zone, as shown in **Photo 2** and **Figure 6.** The existing south barrier is not continuous, as shown in **Photo 3**.

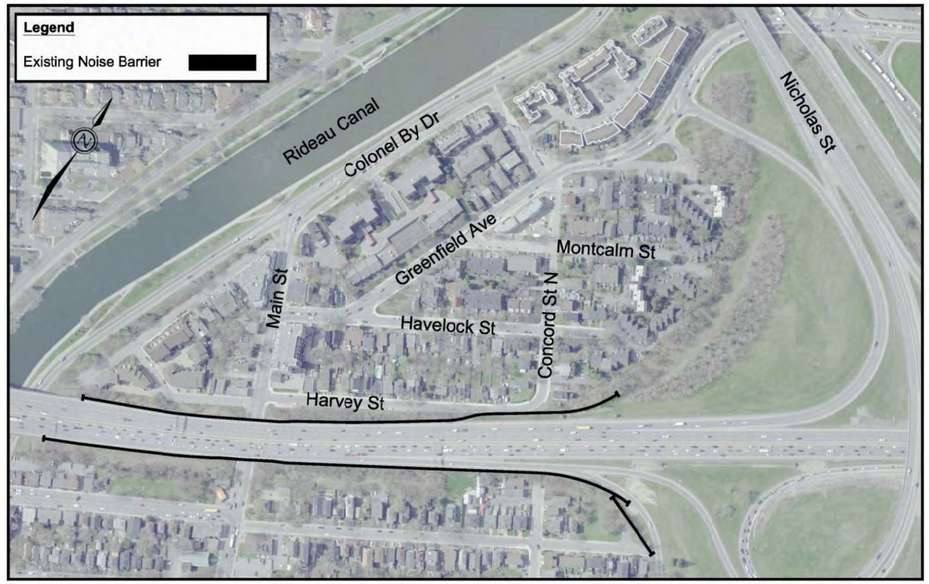


Figure 4: Existing Noise Barriers



Photo 1: North Side Noise Barrier Step-down at Terminus

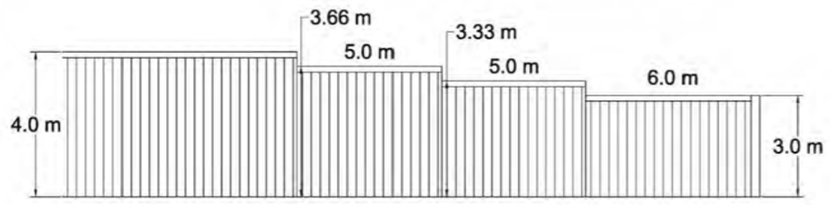


Figure 5: Existing Configuration at North Noise Barrier Terminus



Photo 2: South Side Noise Barrier Step-down at Terminus

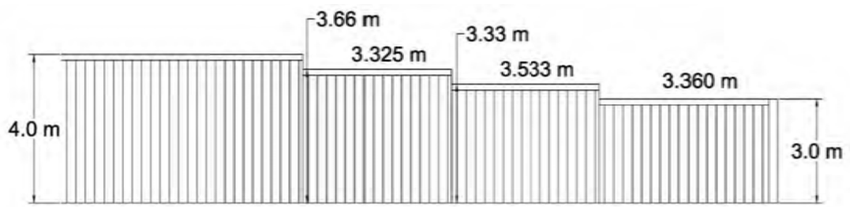


Figure 6: Existing Configuration at South Noise Barrier Terminus

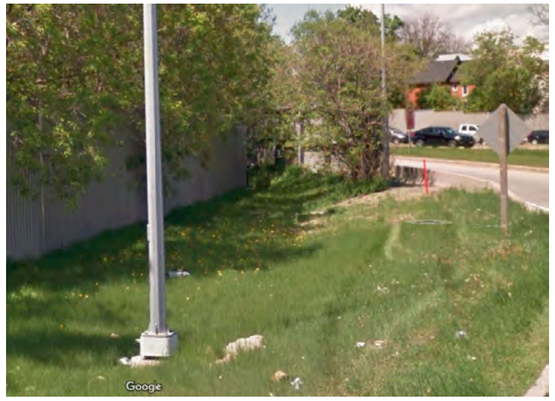


Photo 3: Discontinuous Noise Barrier at Lees Avenue/Main Street Off-ramp

4.4 Traffic Data

The noise source considered was vehicular traffic on the Ottawa Queensway and Nicholas Street/ramps. (Note that the Nicholas Street ramp alignment reflects a modified location as described in **Section 4.5.**) No other noise sources, such as rail and aircraft, were considered for the Study Area, since the project is not located near a rail line/rail station or an airport.

The ramp volumes have not increased from the 2016 counts and are assumed not to increase in the planning horizon (year 2025 to year 2035).

See **Table 1** for AADT traffic volumes, posted speeds and truck percentages of Highway 417 between the Rideau Canal and Nicholas Street.

Table 1: Traffic Characteristics

Street Name	Posted Speed Limit (km/h)	Year 2016 AADT	Year 2025 AADT	Year 2035 AADT	Truck Traffic %	
					Medium Trucks	Heavy Trucks
Queensway	100	170,000	185,900	205,400	15	5
Nicholas N-W on-ramp	40	14,000	14,000	14,000	15	5
Nicholas Street	60	21,000	21,000	21,000	15	5
W-N Ramp	40	7,300	7,300	7,300	15	5
W-E/W Ramp	40	2,400	2,400	2,400	4	1

4.5 Nicholas Street Ramp Realignment

The analysis includes the effect of the realignment of the Nicholas Street ramp's inclusion in the current structure rehabilitation/replacement project. The realignment of the ramp is illustrated in **Figure 7**. The realignment project is planned for construction in 2019 and is therefore included in the 2025 existing future condition.

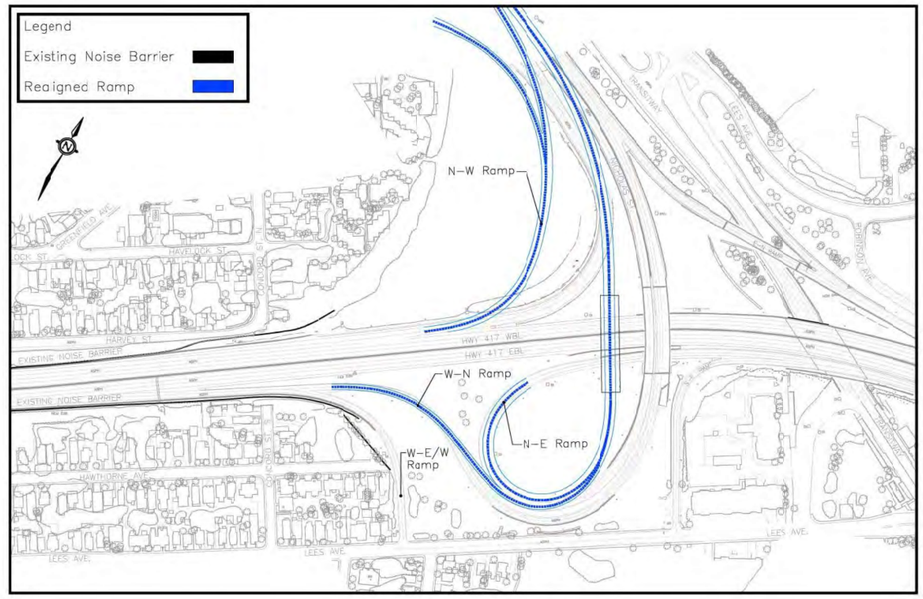


Figure 7: Nicholas Street Ramp Realignment

5.0 Impact Criteria

The assessment of the impact of the predicted sound levels utilized the MTO/ MOECC (MECP) Noise Guide. The significance of a noise impact has been assessed considering the objective of 65 dBA (Class 1 Area ambient sound level in urban areas), in addition to the change in noise level above the future "Do Nothing" ambient sound level. Any increase greater than 5 dBA and above the 65 dBA objective mitigation is investigated. The sound level increases, based on the change in noise level above the future ambient conditions (2025 future sound levels; Highway 417 remains as is, without bridge rehabilitation/replacement improvements), is shown in **Table 2**.

Table 2: Existing and Future Sound Levels

AADT	Receiver Site No.	2025 Sound Level (24 hr Leq, dBA)	2035 Sound Level (24 hr Leq, dBA)	Sound Level Increase (24 hr Leq, dBA)
2025 AADT: 185,900 2035 AADT: 205,400	1	58.7	59.1	0.4
	2	62.8	63.2	0.4
	3	68.4	68.8	0.4
	4	62.2	62.7	0.5
	5	62.2	62.6	0.4
	6	61.6	62.0	0.4
	7	61.9	62.3	0.4
	8	62.8	63.2	0.4
	9	59.6	60.0	0.4

The sound level increases from 2025 to 2035 are imperceptible to the human ear - the human ear can only detect a 3dBA difference. The existing future condition of 2025 was used for the analysis to determine the mitigation required. See **Appendix C** for the TNM output tables.

Mitigation effort is required if there is greater than a 5 dBA increase in ambient sound levels or if the ambient sound level is greater than 65 dBA, see **Table 3**. Based on the existing (2025) and 10-year planning horizon (2035), no receiver site noise levels have a greater than a 5 dBA increase; however, Receiver site 3 (north side) noise levels are above 65 dBA. A Stage II assessment is required to determine if improvements to the existing north side noise barriers can reduce the sound levels at Receiver site 3 by more than 5 dBA.

Table 3: Mitigation Effort Requirements for Projected Noise Levels

Change in Noise Level Above Ambient	Mitigation Effort required
0-5 dBA and <65 dBA	None
> 5 dBA OR ≥65 dBA	Investigate noise control measures on ROW. If project cost is not significantly affected, introduce noise control measures within ROW. Noise control measures, where introduced, should achieve a minimum of 5 dBA attenuation, averaged over first row receivers. Mitigate to ambient, as economically and technically feasible.

Source: MTO Environmental Guide for Noise, Table 2.1

6.0 Noise Mitigation

6.1 North Side Improvements

A Stage II assessment was completed on the north side because Receiver site 3 has a noise level greater than 65 dBA. On the north side, 4 noise barrier improvement alternatives were generated for year 2025 conditions in the Study Area as follows:

1. Do Nothing: This provides a baseline against which all other alternatives are compared, see **Figure 4**;
2. Alternative N1: Extension of noise barrier to dense trees (where trees are at least 30 m deep and 5 m high), see **Figure 8.** This reflects an improvement of the existing barrier to terminate where the woodlot is considered an effective abatement measure, and a continuous effective noise shield can be created between the freeway and the receivers;
3. Alternative N2: Extension of noise barrier between the dense trees and residential properties, see **Figure 8.** This alternative includes the extended barrier behind the woodlot;
4. Alternative N3: Extension of noise barrier along Queensway to Nicholas Street on-ramp, see **Figure 8**. This alternative does not block the sight line for drivers on the Nicholas on-ramp; and
5. Alternative N4: Improvement of existing barrier terminus by elevating existing ground level and a 5 m barrier to the terminus. This alternative does not infill the gap between the barrier end and the woodlot where it reaches an effective depth of 30 m.

Alternatives N1 to N4 also include improvements to increase the height of the barrier to 5 m for the entire length of the north side barriers.

6.2 South Side Improvements

A Stage II assessment was not completed on the south side because no receiver sites have a noise level greater than 65 dBA, nor is there a greater than 5 dBA increase in the 10-year horizon. However, the existing noise barriers are recommended to be replaced, based on their structural condition, to a height of 5 m for the existing limits. There is an existing maintenance/emergency gap at the curve of the south side barrier. This gap is not recommended to be closed as it does not affect the current or future attenuation effectiveness.

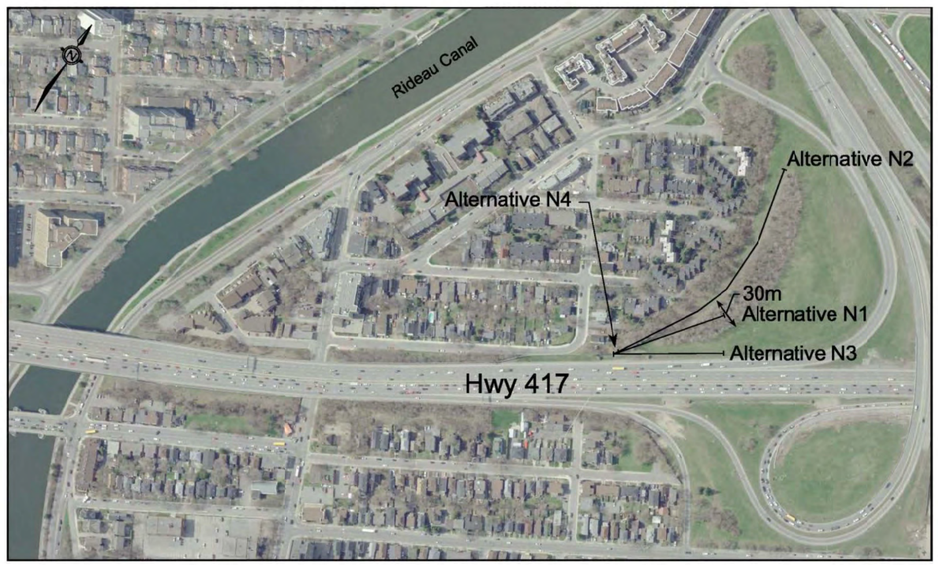


Figure 8: North Side Noise Barrier Alternatives

7.0 Review of Modifications to Replacement Noise Barrier

The sound levels, Leq 24, at each of the receiver sites, from the OLA on the north side, are shown in **Table 4**. (The determination of the provision of mitigation is based on the analysis of the predicted noise level at the OLA, which is typically the rear yard, and may include shielding from the building.[1])

Table 4: Sound Levels at Receiver Sites, North Side Barrier Alternatives (2025) (dBA)

Receiver Site	Alternative				
	Do Nothing	N1	N2	N3	N4
1 (North)	58.7	57.5	56.7	57.8	58.5
2 (North)	62.8	60.2	57.9	61.1	62.6
3 (North)	68.4	61.6	62.2	64.4	68.0
4 (North)	62.2	60.2	60.2	60.3	59.6
5 (North)	62.2	60.6	60.6	60.6	60.5

The assessment of the impact of the predicted sound levels utilized the MTO/ MOECC (MECP) Protocol. The required mitigation effort is based on the change in future noise levels if a new barrier is constructed. If changes to the existing barrier result in more than a 5 dBA sound level decrease, the new barrier is recommended to be implemented. The changes in sound level Leq on the north side are illustrated in **Table 5**. See **Appendix C** for the TNM output tables.

Table 5: Sound Level Decreases at Receiver Sites, North Side (2025) (dBA)

Receiver Site	Alternative N1	Alternative N2	Alternative N3	Alternative N4
1 (North)	1.2	2	0.9	0.2
2 (North)	2.6	4.9	1.7	0.2
3 (North)	**6.8**	**6.2**	4	0.4
4 (North)	2	2	1.9	2.6
5 (North)	1.6	1.6	1.6	1.7
Technical Recommendation	✓	X	X	X

On the north side, Alternatives N1 and N2 both provide a 5 dBA decrease to Receiver Site 3 as well as decreasing the ambient noise at Receiver Site 3 below 65 dBA. While both Alternative N1 and Alternative N2 are effective for noise level decreases, **Table 5** illustrates that the longer noise barrier associated with Alternative N2 does not provide a significant decrease in noise levels compared to Alternative N1. This is because Alternative N2 has a barrier behind a woodlot that shields roadway noise. Therefore, Alternative N1 - Extension of 5 m noise barrier to dense trees (where trees are at least 30 m deep) is recommended for implementation as a cost effective noise abatement measure on the north side. This would be a low cost measure that will close the current gap, at the end of the barrier, and create a continuous abatement measure from the existing noise barrier to where the effective woodlot depth is 30 m. This revision to the termination treatment can be included in the barrier replacement program currently scheduled.

[1] MTO Environmental Guide for Noise

8.0 Conclusions

Based on the completed noise assessment, the following is recommended:

1. Replace all existing barriers on the north and south sides of the Queensway between the Rideau Canal and Nicholas Street.
2. Noise Barrier Alternatives N1 with new barrier heights of 5 m and improved limits to increase acoustical effectiveness (see **Figure 9**).
3. Construction noise associated with the rehabilitation or replacement of the bridges will have to conform to City of Ottawa Municipal Noise bylaws and Provincial legislation described in the MTO Reference Manual for Noise.

Potential construction noise impacts will depend on whether rehabilitation or replacement of the bridges is carried out. With rehabilitation, the majority of noise is associated with concrete removal (chipping), sawing and placement (pouring) of concrete at the existing bridge site. Associated noise will be generated from accessing the bridge site from adjacent streets and the staged detouring of traffic within the Queensway right-of-way. The rapid bridge replacement alternatives will result in three types and locations of construction noise:

- Construction noise at the bridge staging site where the new replacement bridge is being built;
- At the existing bridge site where the existing bridge will be prepared for removal, removed, and the new bridge will be moved into place; and
- Demolishing the existing bridge at the bridge staging site.

The bridge construction will have to comply with the City of Ottawa's Noise By-Law 2017-255 and may involve a noise exemption to facilitate accelerated construction in order to minimize local and Queensway traffic disruption. Compliance with the Noise By-Law will be addressed in the subsequent detail design phase and Design and Construction Report.

All noise barriers are recommended for replacement due to their structural condition. The recommended improvements will provide a 5 dBA reduction in noise to residents who are currently experiencing over 65 dBA ambient noise. The improvements to the noise barrier (increased height and limits) will provide a continuous barrier for residents on both the north and south. A detailed cost analysis will be completed during detail design.

The replacement and acoustical upgrading (height and termination improvements) are deemed to be technically feasible based on the acoustical reduction that the existing barriers currently provide. The barriers need to be replaced as they have greatly exceeded their original life span. Given the need to replace the existing barriers due to deteriorated condition, the cost of increased height and termination improvements is not considered to be economically prohibitive, compared to the replacement cost of just replacing the existing barriers.

Table 6: Recommended Plan Noise Levels summarizes the final noise levels for the nine receiver sites.

Table 6: Recommended Plan Noise Levels	
Receiver Site	**Recommended Plan (24 h Leq, dBA)**
1 (North)	57.5
2 (North)	60.2
3 (North)	61.6
4 (North)	60.2
5 (North)	60.6

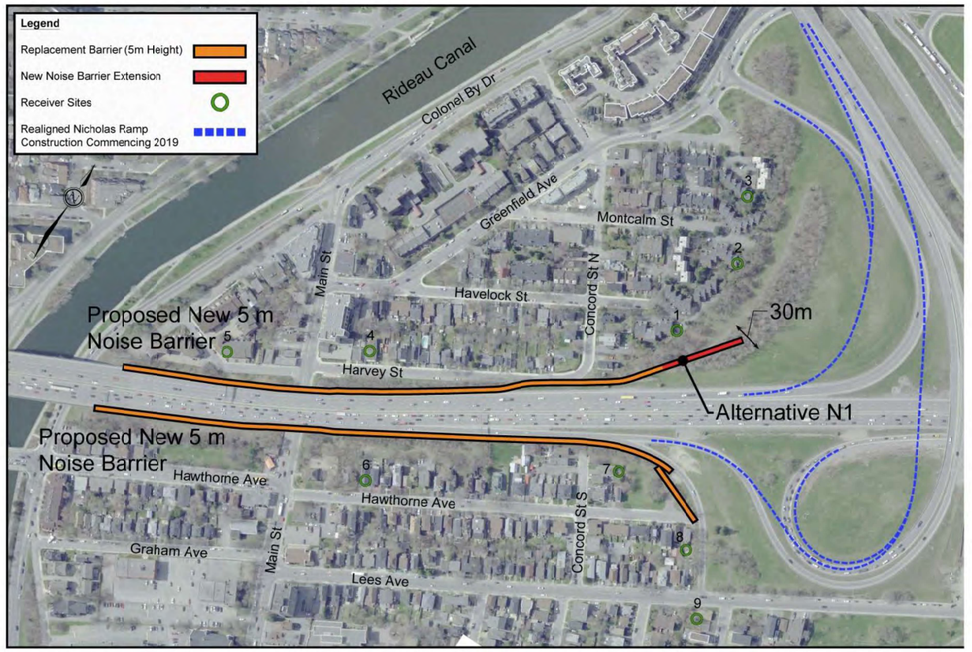


Figure 9: Recommended Noise Barrier Improvements

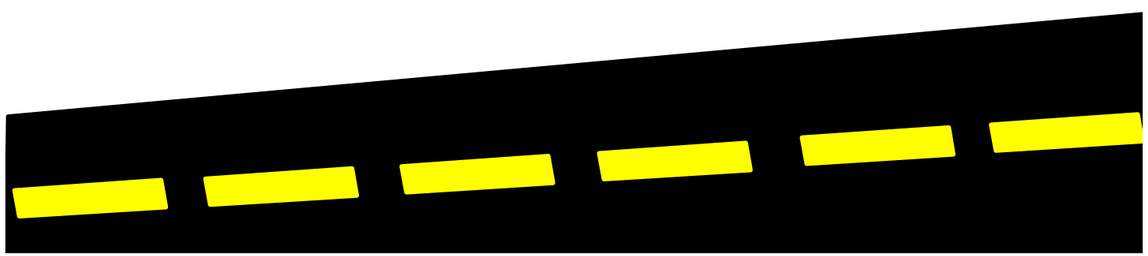
Glossary of Terms

AADT	Annual Average Daily Traffic – the average 24-hour, two-way traffic for the period from January 1st to December 31st.
Abatement	To reduce the emission of noise or vibrations from a source.
Acoustical analysis	An acoustical analysis involving the input of variables (traffic volumes, roadway gradient, presence of barriers, posted speed) to generate output (sound levels) from a noise software program.
Adjacent	Adjacent indicates lying near Ministry highway rights-of-way, although not necessarily contiguous to them.
Aesthetics	Aesthetics refers to methods of providing visual relief and appealing characteristics to planned noise barriers though the application of landscaping designs.
Ambient/ Existing/ Background Noise Level	Ambient is the all-encompassing noise associated with a given environment, usually consisting of a composite of sounds from many sources. It is the noise level prior to construction of an undertaking.
Attenuation	See Noise Attenuation
Automobile	See Vehicle Classification
Barrier	A noise barrier is a physical structure, which is located between a noise source and a noise sensitive receiver. These include walls, berms and combinations of the two, which are effective in reducing sound level transmission from the source to the receiver.
Berm	Earth land from used to shield residential areas (NSA's) from noise.
(dBA)	'A' Weighted sound level; the human ear cannot hear the very high and the very low sound frequencies as well as the mid – frequencies of sound, and hence the predicted sound levels, measured in dBA, are a reasonable accurate approximation of sound levels heard by the human ear. The resulting value is in decibels and is commonly labeled dBA.
Decibel (dB)	Decibel is a logarithmic unit of measure used for expressing level of sound.
EA	Environmental Assessment
Environmental Report	This includes all reports repaired in compliance with the Environmental Assessment Act requirements and submitted to the Ministry of the Environment and Climate Change for acceptance, information or monitoring purposes and the public record. These include Environmental Assessment Reports, Environmental Status Statements, and Design and Constructions Reports.
Equivalent Sound Level (Leq)	The level of a continuous sound having the same energy as a fluctuating sound in a given time period. In this report Leq refers to 24-hour average (Leq, 24h).
First Row Receiver	First row receivers are those immediately adjacent to the

	highway, having no shielding effect from other houses.
Freeway	Freeway is defined as an existing completed, partially developed (staged) or proposed divided highway with full control of access, grade separated intersections. This definition may include some highways that are not officially designated as freeways.
Future Ambient	Ambient noise level projected 10 years after construction without the purpose undertaking.
GVW	Gross Vehicle Weight is the total weight (in kilograms) transmitted to the highway by a vehicle or combination of vehicles, and load.
Heavy Truck	See Vehicle Classification
Leq	Equivalent sound level expressed on the A – weighted decibel scale.
Medium Truck	See Vehicle Classification
Mitigation Measures	Actions taken to reduce the effects of noise increases. These measures include walls, berms adjustments to horizontal and vertical alignments and pavement types that are designated to result in reduced noise levels in NSA's.
MOECC (MECP)	Ministry of the Environment and Climate Change (Ministry of the Environment, Conservation and Parks)
MTO	Ontario Ministry of Transportation
Noise	Undesirable and / or unwanted sound.
Noise Attenuation	A mitigation measure used to lessen the intensity of the noise level (dBA) where the noise level is increased in a noise sensitive area by more than 5 dBA, 10 years after project completion.
Noise barrier / Acoustic barrier	Means walls, berms and combinations of the two which are effective in reducing sound levels.
Noise Impact Assessment	The difference (delta) between ambient (before construction) and noise level with construction of the undertaking, both projected 10 years after construction.
NSA	Noise Sensitive Area is a noise sensitive land use, which has an outdoor living area (OLA) associated with the residential unit. Private homes, townhouse, apartments, and hospitals are classifies as NSA's.
OLA	Outdoor Living Area is adjacent to a noise sensitive area (NSA) and is the part of an outdoor amenity area provided for the quiet enjoyment of the outdoor environment.
Protocol (Noise)	An agreement between the Ministry of the Environment and Climate Change and the Ministry of Transportation. Full title is "A Protocol for Dealing with Noise Concerns During the Preparation, Review and Evaluation of Provincial Highways' Environmental Assessments".
Receiver	A sound sensitive dwelling unit, the location to which the noise / sound is received. This is modelled to reflect the ear level of a person sitting in their outdoor recreational area (patio), 3 meters from the face of the building.

Retrofit (Barrier)	A barrier candidate site, which satisfies all warrants for construction and therefore qualifies for inclusion on the capital construction program when priorities dictate and funds become available.
Retrofit Program	MTO developed a Retrofit Noise Barrier Program to alleviate noise impacts on existing noise sensitive areas adjacent to existing freeways.
SADT	Summer Average Daily Traffic – the average 24-hour, two way traffic for the period from July 1st to August 31st including weekends.
Sound	A dynamic (fluctuating) pressure that transmits by means of rapid air fluctuation from a source to a receiver.
Source	The location from which the noise / sound emits.
TESR	Transportation Environmental Study Report
TNM	Traffic Noise Model (noise software program)
Vehicle Classification	For noise calculations, vehicular traffic is segregated into three types: automobiles, medium trucks and heavy trucks. **Automobiles –** two axles and four wheels designated primarily for the transportations of nine or fewer passengers, or transportation of cargo (light trucks), including motorcycles. The gross vehicle weight (GVW) is less than 4500 kilograms. **Medium trucks –** two axles and four wheels designated for the transportation of cargo. The gross vehicles weight is 4 500 kg> GVW<12 000 kg **Heavy trucks –** three or more axles and designated for the transportation of cargo. GVQ > 12 000kg

Appendix A
Noise Memorandum



BT ENGINEERING
BTE
100 Craig Henry Drive, Suite 201
Ottawa, Ontario K2G 5W3

MEMORANDUM

TO:	Dave Lindensmith	**DATE:**	October 16, 2017
FROM:	Steve Taylor	**BTE PROJECT #:**	17-010
PROJECT:	GWP 4170-13-00 Queensway Downtown Bridges from Metcalfe Street to Main Street Environmental Assessment and Preliminary Design		
SUBJECT:	Noise Analysis Review of Existing Conditions and Background Studies		

As part of the environmental assessment and preliminary design study for the rehabilitation/replacement of 7 structures at 4 sites on the Ottawa Queensway, a noise analysis review has been undertaken. The study area is illustrated in **Figure 1.**

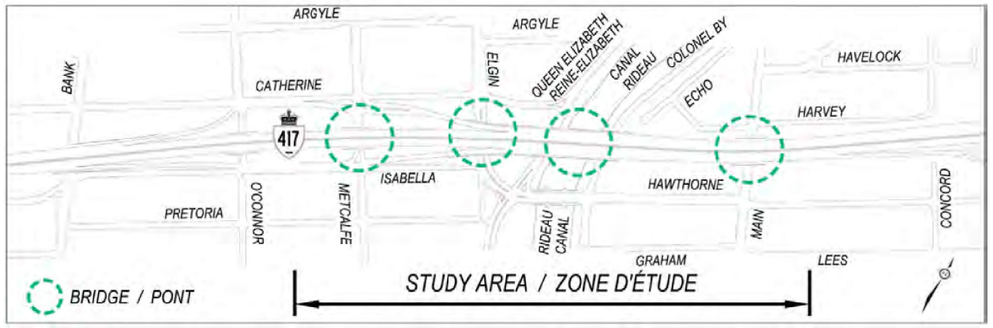


Figure 1: Study Area

A background review has been completed of the following documents:

- Noise Report from the Transportation Environmental Study Report for Highway 417 (Ottawa Queensway) from Highway 416 Easterly to Anderson Road Preliminary Design Study and Environmental Assessment (January 2007);
- Centretown Noise Study Highway 417 North Side from Kent Street to Metcalfe (December 2015);
- Glashan School Highway 417 North Side near Kent Street Noise Study & Acoustical Analysis (December 2015).

These reports are included in **Appendix A, Appendix B** and **Appendix C**, respectively.

The previous 2007 study was completed to provide environmental clearance for the planning stage of physical operational and safety improvements to the freeway. These improvements were documented in the 2007 TESR and are illustrated in **Figure 2**.

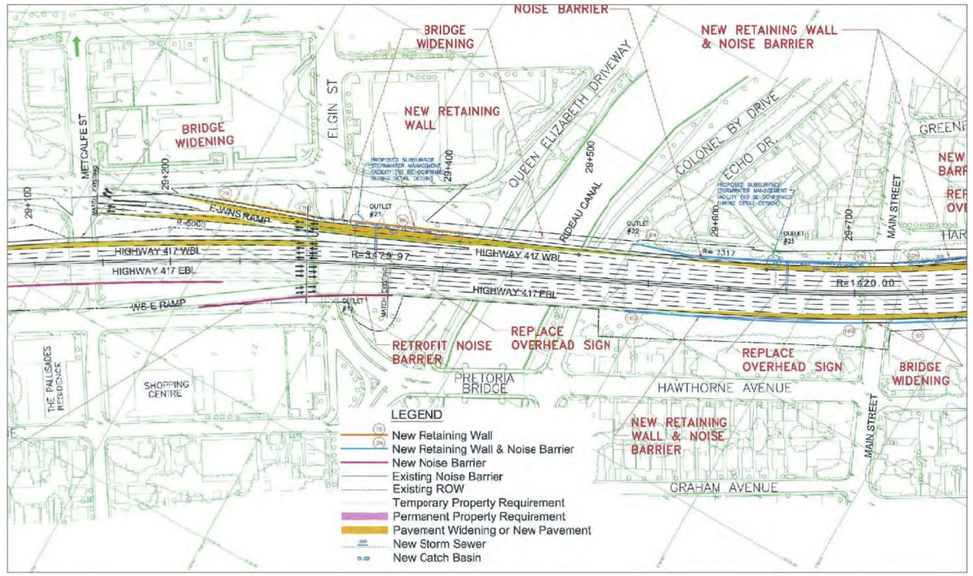


Figure 2: 2007 TESR Freeway Modifications and Noise Barrier Recommendations

Since 2007, the MTO have reviewed 2 additional sites for implementation of retrofit noise abatement projects. The recommendations are:

- An approximately 650 m long noise barrier site on the north side of Highway 417, from just west of Kent Street to Metcalfe Street should be added to the Retrofit List. This section is not currently recommended for construction (**Appendix B**).
- No noise barrier is recommended adjacent to the Glashan School (**Appendix C**).

These two additional sites are beyond the limits of the EA Study Area.

The noise barrier changes within the current study area are illustrated in **Figure 2** above. The current 2017 EA is focusing on a bridge management plan to rehabilitate or replace 7 structures on the Queensway from Metcalfe Street to Main Street. These bridge management projects will not require any changes to the 2007 EA for freeway expansion. Therefore, there are no noise impacts of the works except for construction-related means and methods and evaluating the existing conditions within the Study Area for noise barrier limits. These construction operation noise measures will be required to meet municipal noise control by-laws.

However, based on public comments on the existing noise barrier performance on residential units north of the Queensway along Harvey Street/Concord Street North, this study will review the existing noise barriers in this area. The existing conditions for acoustics are illustrated in **Figure 3** using the projected traffic volumes forecast for 2017. The noise barrier on the north side of the Queensway between the Rideau Canal and Nicholas Street becomes ineffective as it terminates at the east limit and does not provide the same level of noise abatement measures for nearby residents. A noise abatement analysis will be conducted for the Harvey Street/Nicholas Street residents.

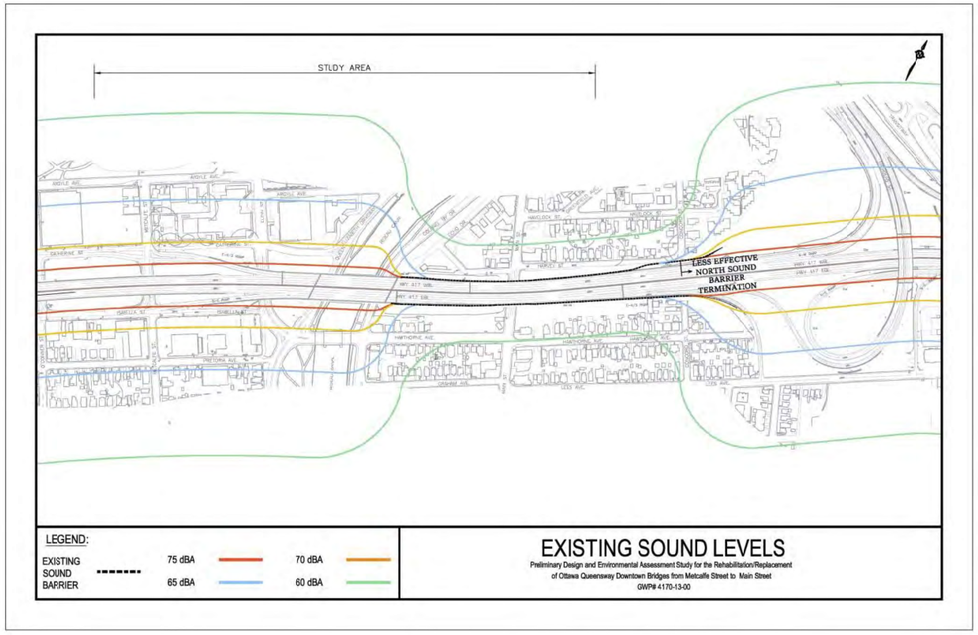


Figure 3: Existing Noise Conditions along the Queensway

The traffic volume input used for the sound contours above is illustrated in **Table 1: Existing Traffic Volumes**.

Table 1: Existing Traffic Volumes

Section	Forecast 2017 AADT
Highway 417 EB + WB west of Nicholas	170,000
Ramp from Nicholas + Greenfield to Hwy 417 West (R76)	14,000
Ramp from Nicholas to Hwy 417 East (R35)	13,700
Ramp from Hwy 417 EB to Nicholas (R52)	7,300

Future Analysis

This study will include an additional review of the residential properties at the end of Harvey Street, Havelock Street, and Montcalm Street (see **Figure 4**). At the request of the property owners, the sites will be analyzed to determine whether additional noise abatement measures are warranted. This analysis will be presented at PIC No. 2. The noise analysis will report on whether additional mitigation is cost effective and can achieve a 5 dBA reduction if implemented, and whether an improved termination treatment should be implemented as part of the noise barrier replacement project.

Subject: Noise Analysis Review of Existing Conditions and Background Studies
Project: MTO GWP 4170-13-00 / BTE17-010
Date: October 17, 2017



Figure 4: Nicholas Street Noise Abatement Review

Existing Conditions Observations

The modelling and field review has identified that a section of the north side barrier has reduced effectiveness because the insertion loss is reduced due to the lowering of the barrier top elevation relative to the ground elevation of the receivers. The localized issues at the barrier termination include: the freeway profile dropping to the east and the barrier top elevation also dropping parallel to the freeway (reducing barrier effective height); the barrier height stepping down in height resulting in sound travelling around the barrier end; and the wooded area near the end of the barrier termination is in fact in a depressed area (stream/creek area) and is not effective as a wooded barrier. The improvement of the noise barrier end treatment will be reviewed as part of the preliminary design of the freeway improvements.

Appendix B
Retrofit Review Reports



Highway 417, North Side

Centretown Noise Study
from
Bronson Ave. to Rideau River,
City of Ottawa

W.P. 663 - 93 - 00

February 17, 2005

Chris T. Blaney
Senior Environmental Planner - Acoustics
Ministry of Transportation, Ontario
Central Region
Environmental Services Section

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1.0 STUDY PURPOSE AND INTRODUCTION

MTO carried out a noise study on the feasibility construction of a noise barrier in the Centretown district of Ottawa. The limits for the analysis were from west of Bronson Avenue to the Rideau River on the north side of Highway 417(Ottawa Queensway). The acoustical modelling assessment conducted for this project was undertaken to decide the appropriateness of constructing noise barriers to protect the noise sensitive areas (NSA) within the study area. The 2001 traffic year was used as being the best available to model existing conditions. Figure 1 shows the general location of the neighbourhood in Ottawa.

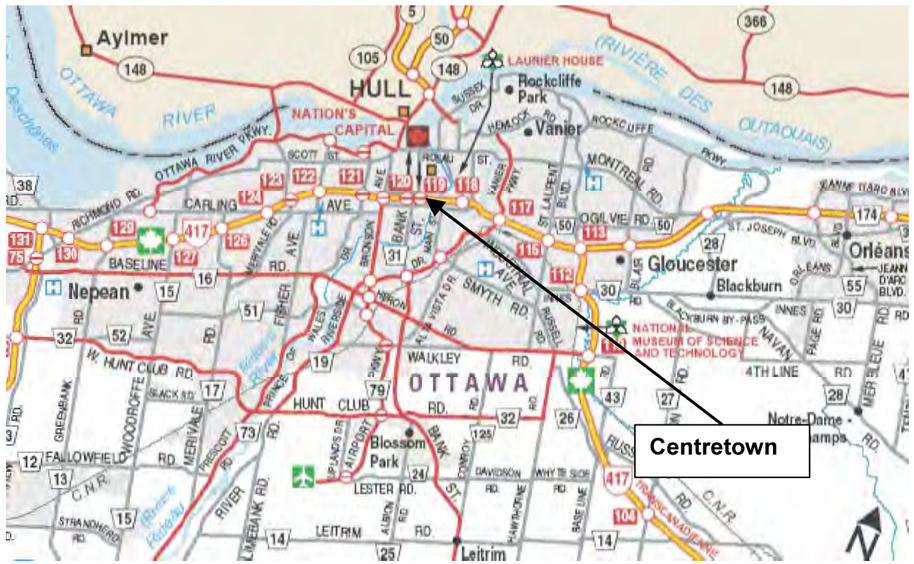

Figure 1. Key Plan

2.0 BACKGROUND

2.1 Highway Traffic Volumes

TSH Associates and the Ministry of Transportation supplied the traffic volumes and commercial truck percentages used in the analysis. The noise analysis used Average Annual Daily Traffic (AADT) volumes on Highway 417 because they were the best available road traffic volumes condition for this highway. AADT volume were used for the ramps and municipal roadways because it was the best available.

Table 1 - Highway 417 Road Traffic Volumes (AADT) in Downtown Ottawa

Section	2001	Percentage Commercial
Bronson Ave. to Lyon St.	136,000	5.8%
Lyon St. to O'Connor St.	120,500	5.8%
O'Connor St. to Metcalf St.	120,000	5.8%

2.2 Rational for use of Highway Noise Predictions

The Ministry does not generally rely on measured noise levels. This is due to the fact that a noise measurement represents only a 'snapshot' time period that may not be representative of actual background sound levels. Often noise measurements are influenced by extraneous noise sources (example: dogs barking, lawn mowers, etc.). Measurements are not useful for evaluation of highway noise impacts because the highway has not been constructed and it is not possible to measure the project impacts.

For these reasons the Ministry relies on noise predictions generated through the use of computerized models. The model used in Ontario has been extensively field tested to verify the validity of the noise prediction model. Nevertheless, the Ministry did obtain sound level measurement at several selected location within the study area. The measured levels corresponded to similar predicted level reported in Section 3.3. The sound level measurements were used to verify the accuracy of the highway noise predictions because of the very complex site and high degree of public interest.

2.3 Highway Noise Prediction Model and Method

The highway noise prediction model used is the United States Federal Highway Administrations Traffic Noise Model (FHWA TNM®)[1] Version 2.5 highway noise prediction model. This is the method is jointly approved by the Ministry of Transportation and the Ministry of the Environment (MOE).

Included in the modelling were the:

- posted speeds for the roadways in the area used in the noise analysis,
- pavement surface used for construction of the highway (hot mix asphaltic pavement),
- elevations, contours and locations of all of the NSA's near the right-of-way,
- highway grades,
- intervening rows of homes and barriers,
- type of ground cover,
- percentage of commercial traffic, and
- distance from the roadway.

For this report, a total of thirty-seven representative receiver locations were used. Figure 2 illustrates the receiver locations and the highway alignment.

1 Lau, Michael C., Lee, Cynthia S. Y., Rochat, Judith L., Boeker, Eric R. and Fleming, Gregg L., "FHWA Traffic Noise Model® Users Guide (Version 2.5 Addendum)", U.S. Federal Highway Administration, March 1998 to April 2004.

3.0 RETROFIT NOISE BARRIERS

3.1 Policy Background

In 1977, the Ministries of Transportation, Environment and Municipal Affairs agreed that homes adversely influenced by freeway noise are eligible for consideration for mitigation by MTO under a 'retrofit' program, if they were built before February 1977.

3.2 Retrofit Noise Barrier Policy Warrants

For a site to be placed on the "Ministry of Transportation Candidate Sites for Noise Barrier Retrofit List" (Retrofit List), it must meet all of the following warrants:

a) the NSA's must be adjacent to a provincial freeway with no at grade intersections (e.g., Queensway);

b) the NSA's must be ground-level outdoor leisure areas of residential properties for which development was approved under the Planning Act before February 8, 1977;

c) the average daily freeway traffic noise levels must be over 60 decibels; and

d) barrier use must be sufficiently effective to provide a freeway noise level reduction for ground level residential outdoor leisure areas of at least five decibels.

3.3 Noise Barrier Discussion

The Ministry has constructed quite a number of retrofit noise barriers in Ottawa. All of the sites meet the requirements set out in Section 3.2. A new retrofit noise barrier that covers the entire area on the north side of the Queensway between Bronson Avenue and the Rideau River is not recommended for the following reasons:

- the minimum noise barrier reduction requirement of 5 dBA is not achieved,
- a potential loss of highway visibility for business in the area,
- creating a tunnel like affect in the central area of Ottawa, and
- significant cost of construction for modest benefits.

Table 2 illustrates the existing noise levels and the degree to which a noise barrier running from Bronson easterly towards the Lyon Street on ramp would reduce sound levels for that portion of Centretown. I believe that it is feasible to construct a noise barrier within this area that fully meets all of the noise barrier policy warrants set out in Section 3.2. The exact height and end points of the wall would be determined during detail design.

Table 2 L_{Aeq24H} Sound Levels in Centretown from Bronson Ave. to Rideau River, North Side

Receiver Number	Number of Homes Represented by Receiver	No Barrier Sound Level	Sound Level With 5 Metre Barrier and Sound Level Reduction	
First Row Receivers, O'Connor St. to Kent St.				
1	1	64.2	64.2	0.0
2	1	64.4	64.4	0.0
3	1	64.8	64.8	0.0
4	1	62.6	62.6	0.0
5	1	62.2	62.2	0.0
6	3	62.1	62.1	0.0
Total =	8			
	Weighted Average =	63.1	63.1	0.0
Second Row Receivers, O'Connor St. to Kent St.				
7	5	59.3	59.0	0.3
8	6	58.1	57.9	0.2
9	5	57.2	56.1	1.1
10	5	57.4	54.5	2.9
Total =	21			
	Weighted Average =	58.0	56.9	1.1
First Row Receivers, Kent St. to Bronson Ave.				
11	6	60.5	56.6	3.9
12	7	60.2	55.7	4.5
13	4	60.9	55.6	5.3
14	2	61.2	56.1	5.1
15	4	60.6	55.1	5.5
16	2	60.5	54.7	5.8
17	2	61.6	55.9	5.7

Table 2 L_{Aeq24H} Sound Levels in Centretown from Bronson Ave. to Rideau River, North Side

Receiver Number	Number of Homes Represented by Receiver	No Barrier Sound Level	Sound Level With 5 Metre Barrier and Sound Level Reduction	
18	2	60.9	54.7	6.2
19	4	61.2	55.0	6.2
20	5	61.3	55.1	6.2
21	11	60.8	54.6	6.2
22	4	61.3	55.3	6.0
23	4	61.2	54.8	6.4
24	4	61.6	55.3	6.3
25	3	61.6	55.4	6.2
26	4	61.7	55.7	6.0
27	4	61.4	56.1	5.3
28	5	62.2	58.5	3.7
31	4	61.3	56.7	4.6
Total =	81			
	Weighted Average =	61.1	55.6	5.5
First Row Homes already partly shielded by Bronson Ave. Wall				
29	5	62.0	59.4	2.6
30	4	62.7	60.5	2.2
32	11	61.3	58.2	3.1
Sum =	20			
	Weighted Average =	61.8	59.0	2.8
Second Row Receivers Kent St. to Bronson Ave.				
33	5	59.3	55.5	3.8
34	5	59.1	53.4	5.7
35	5	59.2	52.9	6.3
36	5	59.2	52.9	6.3
37	5	58.3	53.2	5.1
Sum =	25			
	Weighted Average =	59.0	53.6	5.4

Note: The weighted average places a higher value on a receiver representing for example 5 homes at a location rather than 1 or 2.

3.4 Noise Barrier Retrofit Construction Warrants and Standards

The priority for constructing a site placed on the Candidate Sites for Noise Barrier Retrofit List is determined by a combination of the following:

i. a high number of homes that will benefit from the barrier relative to its cost (a site with a larger number of homes that will benefit from a shorter length of noise barrier will have a higher construction priority);
ii. the average cost per home that receives a three decibel or greater reduction should be reasonable (MTO usually spends less than $35,000 per home);
iii. a high degree of noise reduction being provided (i.e., a site with a higher degree of noise reduction will have a higher construction priority);
iv. a high noise level (i.e., a site with a higher freeway noise level will have a higher construction priority);
v. a low potential for the land use to be changed to a non-residential land use (i.e., a site with a lower potential for change to non-residential use will have a higher construction priority); and
vi. a low level of conflict relative to the highway construction program (i.e., a site that will remain undisturbed and effective for a longer period of time will have a higher construction priority) .

Only a few sites are constructed from the Retrofit List every year and new sites are identified. It may take some time before all candidate sites are constructed. The sites are revaluated periodically to determine relative priorities and to recommend sites for construction.

3.5 Noise Barrier Secondary Benefits

Noise barriers may provide secondary benefits such as reduced sound levels for indoor areas and non-residential outdoor areas, increased privacy, increased security, and reduced headlight intrusion. These considerations, by themselves do not make a site eligible for placement on the Retrofit List without meeting all of the requirements listed in Section 3.2.

4.0 CONCLUSIONS

The conclusions are as follows:

1. Because of the very high construction cost and the relatively poor noise barrier performance for the entire north side of the Queensway a noise barrier covering the entire area between Bronson Avenue and the Rideau River is not recommended.

2. A noise barrier running between Bronson Avenue and Lyon Street should be added as a Candidate Site to the Retrofit List. Eventual construction should be considered according to the placement or relative ranking of this site on the List.

3. Additional public and stakeholder consultation is needed to seek public consensus on wall location and design during detail design.

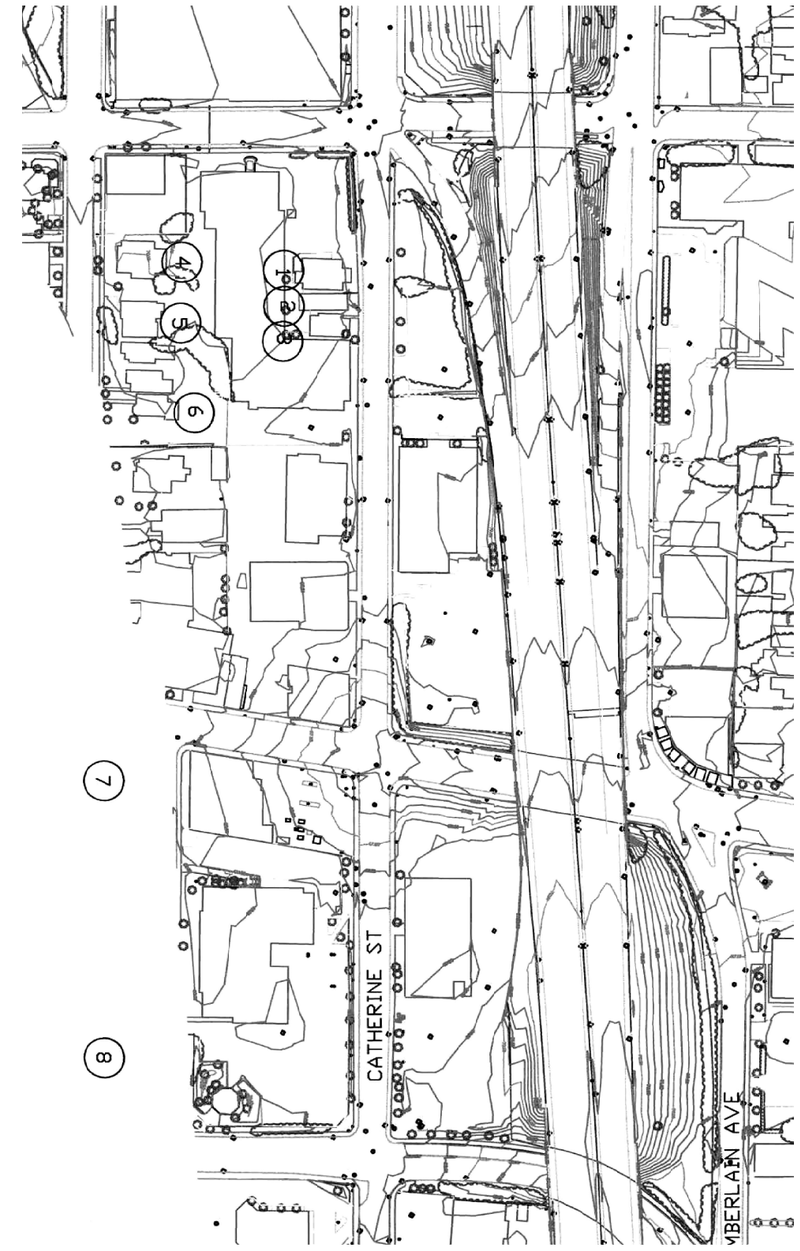

Figure 2 Map of Receiver Locations O'connor St. to Kent St.

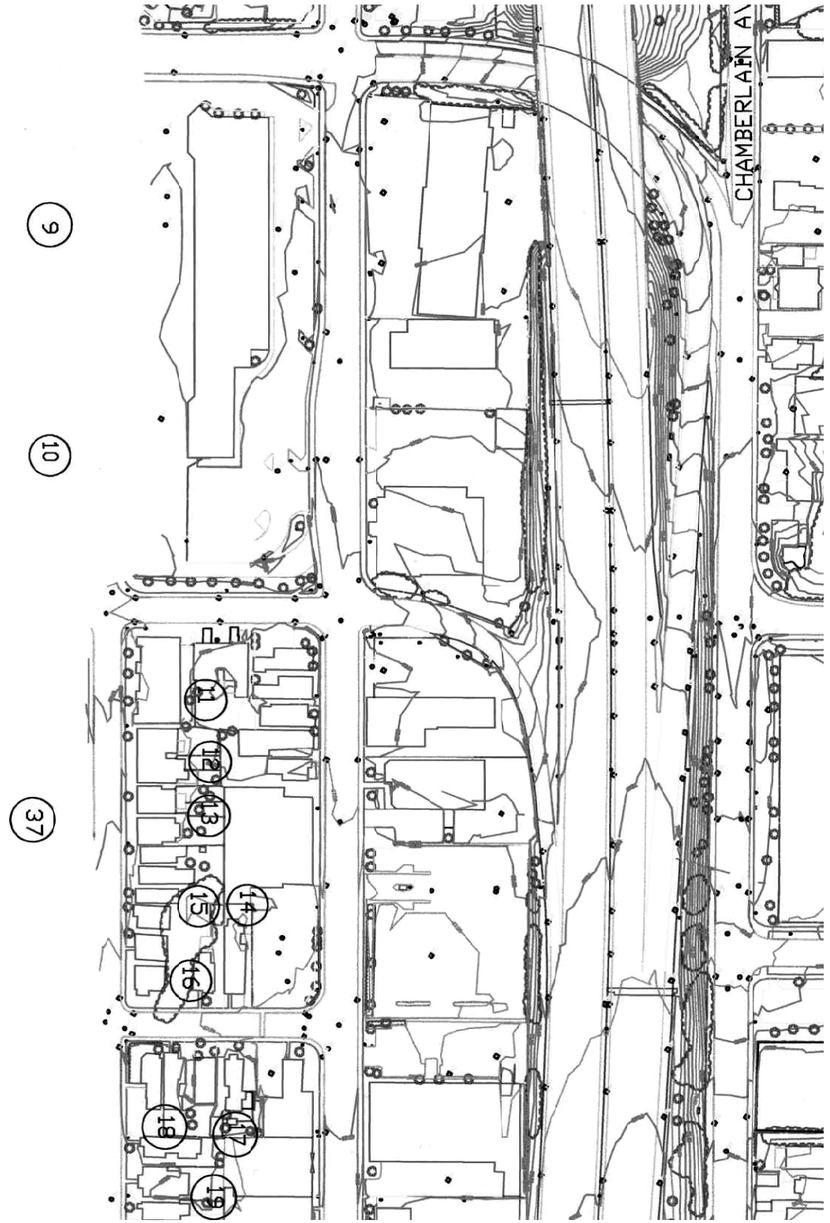

Figure 3 Map of Receiver Locations, Kent St. to Bay St.

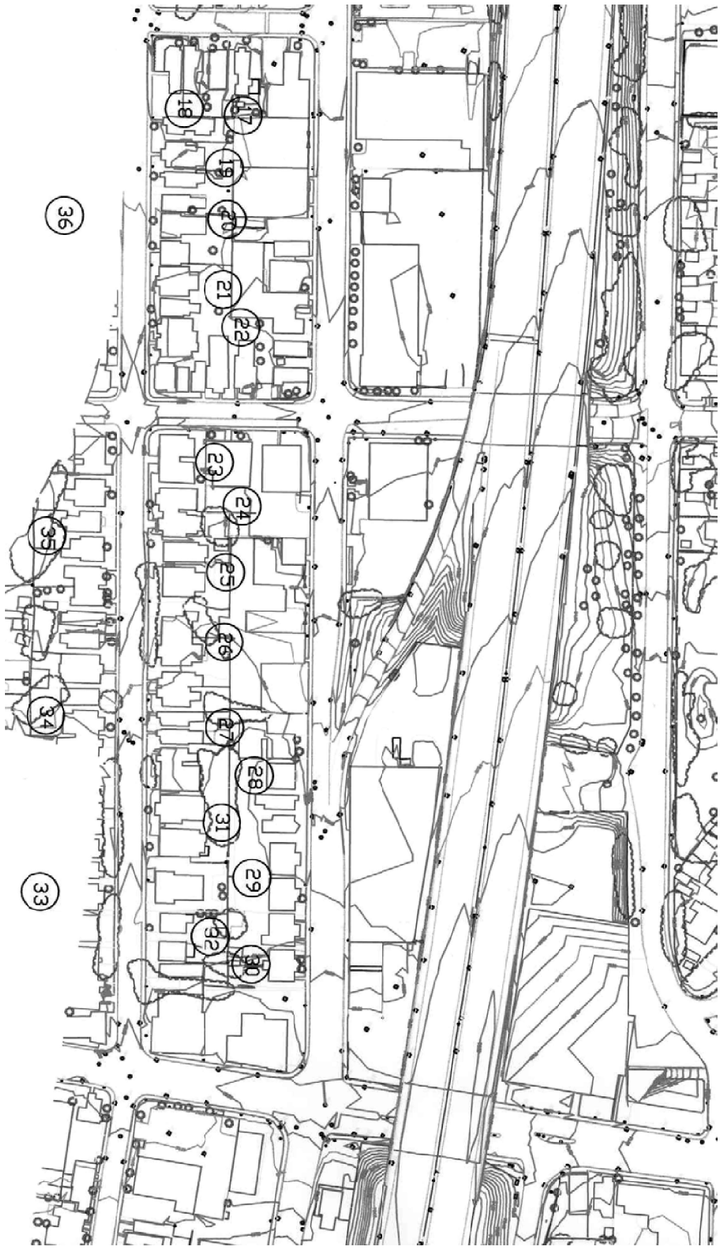

Figure 4 Map of Receiver Locations, Bay St. to Bronson Ave.

Highway 417, South Side

Noise Study
In the Vicinity of Preston Street
and
From Glendale Ave. to Rideau Canal,
City of Ottawa

May 24, 2005

Chris T. Blaney
Senior Environmental Planner - Acoustics
Ministry of Transportation, Ontario
Central Region
Environmental Services Section

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1.0 STUDY PURPOSE AND INTRODUCTION

MTO carried out a noise study on the feasibility construction of additional noise barriers in Ottawa. This study was undertaken as a result of a number of letters and e-mails received by the Ministry and public concerns raised at a meeting in February 2005.

The limits for the analysis were in the vicinity of Preston Street and from Glendale Avenue to the Rideau Canal on the south side of Highway 417(Ottawa Queensway). The acoustical modelling assessment conducted for this project was undertaken to decide the appropriateness of constructing noise barriers to protect the noise sensitive areas (NSA) within the study area. The 2001 traffic year was used as being the best available to model existing conditions. Figure 1 shows the general location of the neighbourhoods in Ottawa.



Figure 1. Key Plan

2.0 BACKGROUND

2.1 Highway Traffic Volumes

TSH Associates, the City of Ottawa and the Ministry of Transportation supplied the traffic volumes and commercial truck percentages used in the analysis. The noise analysis used 2001 Average Annual Daily Traffic (AADT) volumes on all of the roadways because they were the best available road traffic volumes.

Table 1 - Highway 417 Road Traffic Volumes (AADT) in Downtown Ottawa, 5.8% Commercial

Section	2001
Parkdale Ave. to Rochester Ave.	152,500
Rochester Ave. to Bronson Ave.	140,500
Bronson Ave. to Lyon St.	136,000
Lyon St. to O'Connor St.	120,500
O'Connor St. to Metcalf St.	120,000

2.2 Rational for use of Highway Noise Predictions

The Ministry does not generally rely on measured noise levels. This is due to the fact that a noise measurement represents only a 'snapshot' time period that may not be representative of actual background sound levels. Often noise measurements are influenced by extraneous noise sources (example: dogs barking, lawn mowers, etc.). Measurements are not useful for evaluation of highway noise impacts because the highway has not been constructed and it is not possible to measure the project impacts.

For these reasons the Ministry relies on noise predictions generated through the use of computerized models. The model used in Ontario has been extensively field tested to verify the validity of the noise prediction model.

2.3 Highway Noise Prediction Model and Method

The highway noise prediction model used is the United States Federal Highway Administrations Traffic Noise Model (FHWA TNM®)[1] Version 2.5. This model is a new state-of-the-art computerized model used for predicting noise impacts in the vicinity of highways. It uses advances in acoustics and computer technology to improve the accuracy and ease of modeling highway traffic noise, including the design of efficient, cost-effective highway noise barriers.

The FHWA TNM contains the following modeling components:

- five standard vehicle types, as well as user-defined vehicles,
- constant-flow and interrupted-flow traffic,
- effects of different pavement types and graded roadways,
- sound level computations based on a one-third octave-band database and one-third octave-band algorithms,
- graphically interactive noise barrier design optimization,
- attenuation over/through rows of buildings and dense vegetation, and
- multiple diffraction analyses.

For this report, a total of fifty-four representative receiver locations were used. Figures 2 to 5 illustrate the receiver locations and the highway alignment.

1 Lau, Michael C., Lee, Cynthia S. Y., Rochat, Judith L., Boeker, Eric R. and Fleming, Gregg L., "FHWA Traffic Noise Model® Users Guide (Version 2.5 Addendum)", U.S. Federal Highway Administration, March 1998 to April 2004.

3.0 RETROFIT NOISE BARRIERS

3.1 Policy Background

In 1977, the Ministries of Transportation, Environment and Municipal Affairs agreed that homes adversely influenced by freeway noise are eligible for consideration for mitigation by MTO under a 'retrofit' program, if they were built before February 1977.

3.2 Retrofit Noise Barrier Policy Warrants

For a site to be placed on the "Ministry of Transportation Candidate Sites for Noise Barrier Retrofit List" (Retrofit List), it must meet all of the following warrants:

a) the NSA's must be adjacent to a provincial freeway with no at grade intersections (e.g., Queensway);

b) the NSA's must be ground-level outdoor leisure areas of residential properties for which development was approved under the Planning Act before February 8, 1977;

c) the average daily freeway traffic noise levels must be over 60 decibels; and

d) barrier use must be sufficiently effective to provide a freeway noise level reduction for ground level residential outdoor leisure areas of at least five decibels.

3.3 Noise Barrier Discussion

The Ministry has constructed quite a number of retrofit noise barriers in Ottawa. All of the sites meet the requirements set out in Section 3.2. The area running westerly from the Rideau Canal to approximately Glendale Ave. and the homes located west of Preston Street have been added to the Retrofit List. Ministry staff did an extensive site visit in March 2005 to determine the site conditions as well as to determine the location of the noise sensitive areas.

Before these walls are constructed the following factors need to be considered:

- a potential loss of highway visibility for business in the area,

- creating a tunnel like affect in the central area of Ottawa, and
- the need for additional public consultation to secure community acceptance of the recommended wall design.

Tables 2 and 3 illustrates the existing noise levels and the degree to which a noise barrier running from east of Preston Street towards the existing Parkdale Ave. noise barrier and a series of noise barriers running from Elgin St. westerly towards Glendale Ave. would reduce sound levels for that portion of Ottawa. I believe that it is feasible to construct a noise barrier within this area that fully meets all of the noise barrier policy warrants set out in Section 3.2. The exact height and end points of the wall would be determined during detail design.

Table 2 L_{Aeq24H} Sound Levels in Ottawa Highway 417 From West of Rideau Canal to Glendale Ave.

Receiver Number	Number of Homes Represented by Receiver	No Barrier Sound Level	Sound Level With 5 Metre Barrier and Sound Level Reduction	
First Row Receivers				
12	3	62.3	56.5	5.8
13	3	63.9	57.5	6.4
14	8	65.1	59.1	6.0
15	5	67.3	58.2	9.1
16	4	66.4	58.1	8.3
17	3	67.1	59.5	7.6
24	8	64.3	57.5	6.8
25	5	63.7	57.6	6.1
26	7	63.7	57.6	6.1
27	3	63.7	58.1	5.6
28	4	63.7	58.9	4.8
Total =	53			
Weighted Average =		64.9	58.1	6.8
Second Row Receivers				
1	1	59.9	53.4	6.5
2	4	59.3	52.9	6.4
3	4	60.0	54.3	5.7
4	2	60.5	55.4	5.1
5	6	61.2	56.7	4.5
6	4	61.7	55.1	6.6

Table 2 L_{Aeq24H} Sound Levels in Ottawa Highway 417 From West of Rideau Canal to Glendale Ave.

Receiver Number	Number of Homes Represented by Receiver	No Barrier Sound Level	Sound Level With 5 Metre Barrier and Sound Level Reduction	
7	4	62.0	54.3	7.7
8	3	62.4	54.7	7.7
9	4	62.9	56.9	6.0
18	2	64.1	56.6	7.5
19	18	64.0	55.7	8.3
20	5	64.0	55.6	8.4
21	7	62.9	54.9	8.0
22	4	62.4	55.0	7.4
Sum =	68			
Weighted Average =		62.7	55.4	7.3
Third Row Receivers				
10	7	61.6	53.9	7.7
11	7	61.2	53.9	7.3
23	14	62.5	54.5	8.0
29	8	61.5	55.0	6.5
30	4	60.4	55.8	4.6
31	1	60.5	57.3	3.2
32	5	59.4	56.4	3.0
33	5	59.8	57.1	2.7
Sum =	51			
Weighted Average =		61.4	55.2	6.2

Note: The weighted average places a higher value on a receiver representing for example 5 homes at a location rather than 1 or 2.

Table 3 L_{Aeq24H} Sound Levels in Ottawa Highway 417 in the Vicinity of Preston St.

Receiver Number	Number of Homes Represented by Receiver	No Barrier Sound Level	Sound Level With 5 Metre Barrier and Sound Level Reduction	
First Row Receivers				
1	2	65.1	60.2	4.9
2	1	63.9	58.8	5.1
3	3	63.4	57.9	5.5

Table 3 L_{Aeq24H} Sound Levels in Ottawa Highway 417 in the Vicinity of Preston St.

Receiver Number	Number of Homes Represented by Receiver	No Barrier Sound Level	Sound Level With 5 Metre Barrier and Sound Level Reduction	
4	4	62.6	57.6	5.0
5	8	62.4	57.3	5.1
6	1	61.8	57.2	4.6
7	3	60.9	57.3	3.6
16	3	61.6	57.9	3.7
Total =	25			
Weighted Average =		62.7	57.9	4.8
Second Row Receivers				
8	3	60.8	57.1	3.7
9	2	60.2	57.0	3.2
15	3	60.6	57.4	3.2
Total =	8			
Weighted Average =		60.6	57.2	3.4
Third Row Receivers				
10	1	59.7	56.9	2.8
11	3	60.8	57.5	3.3
12	4	61.3	57.9	3.4
13	3	61.7	58.5	3.2
14	2	59.6	56.9	2.7
Total =	13			
Weighted Average =		61.0	57.8	3.2
West Homes Already Partly Shielded by Wall				
17	2	61.7	59.2	2.5
18	4	60.1	58.2	1.9
19	4	62.5	60.6	1.9
20	3	61.4	60.0	1.4
21	2	60.0	58.6	1.4
Total =	15			
Weighted Average =		61.3	59.5	1.8

Note: The weighted average places a higher value on a receiver representing for example 5 homes at a location rather than 1 or 2.

3.4 Noise Barrier Retrofit Construction Warrants and Standards

The priority for constructing a site placed on the Candidate Sites for Noise Barrier Retrofit List is determined by a combination of the following:

i. a high number of homes that will benefit from the barrier relative to its cost (a site with a larger number of homes that will benefit from a shorter length of noise barrier will have a higher construction priority);
ii. the average cost per home that receives a three decibel or greater reduction should be reasonable (MTO usually spends less than $35,000 per home);
iii. a high degree of noise reduction being provided (i.e., a site with a higher degree of noise reduction will have a higher construction priority);
iv. a high noise level (i.e., a site with a higher freeway noise level will have a higher construction priority);
v. a low potential for the land use to be changed to a non-residential land use (i.e., a site with a lower potential for change to non-residential use will have a higher construction priority); and
vi. a low level of conflict relative to the highway construction program (i.e., a site that will remain undisturbed and effective for a longer period of time will have a higher construction priority).

Only a few sites are constructed from the Retrofit List every year and new sites are identified. It may take some time before all candidate sites are constructed. The sites are revaluated periodically to determine relative priorities and to recommend sites for construction.

3.5 Noise Barrier Secondary Benefits

Noise barriers may provide secondary benefits such as reduced sound levels for indoor areas and non-residential outdoor areas, increased privacy, increased security, and reduced headlight intrusion. These considerations, by themselves do not make a site eligible for placement on the Retrofit List without meeting all of the requirements listed in Section 3.2.

4.0 CONCLUSIONS

The conclusions are as follows:

1. A noise barrier running from east of Preston Street towards the existing Parkdale Ave. noise barrier and a series of noise barriers running from Elgin St. westerly towards Glendale Ave. would reduce sound levels for that portion of Ottawa.

2. All of the noise barriers should be sound absorptive on both sides to avoid any unwanted sound reflections.

3. These two areas should be added as a Candidate Site to the Retrofit List. Eventual construction should be considered according to the placement or relative ranking of this site on the List.

4. Additional public and stakeholder consultation of the recommended wall design is needed to seek public consensus on wall location and design during detail design.

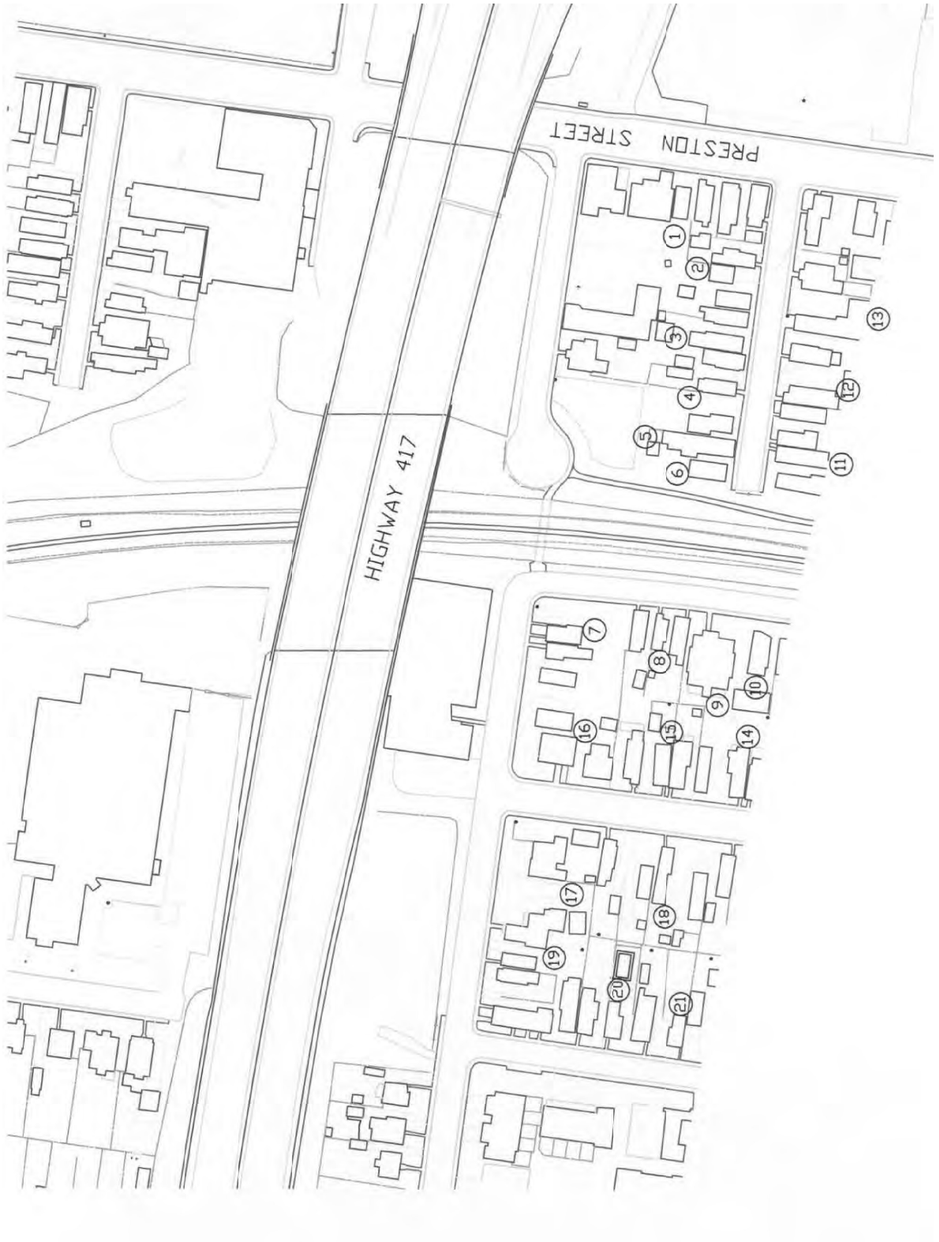


Figure 2 Map of Receiver Locations West of Preston St.

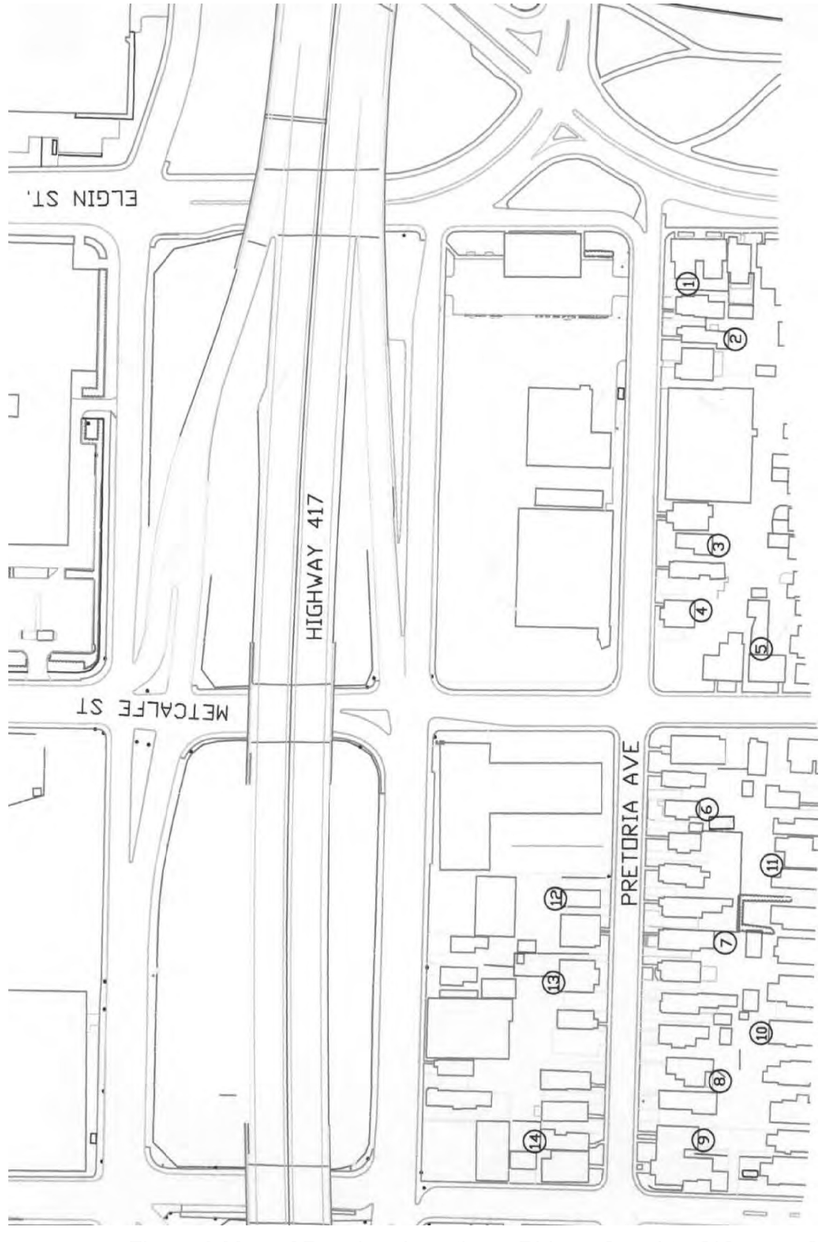


Figure 3 Map of Receiver Locations, Rideau Canal to O'Connor St.

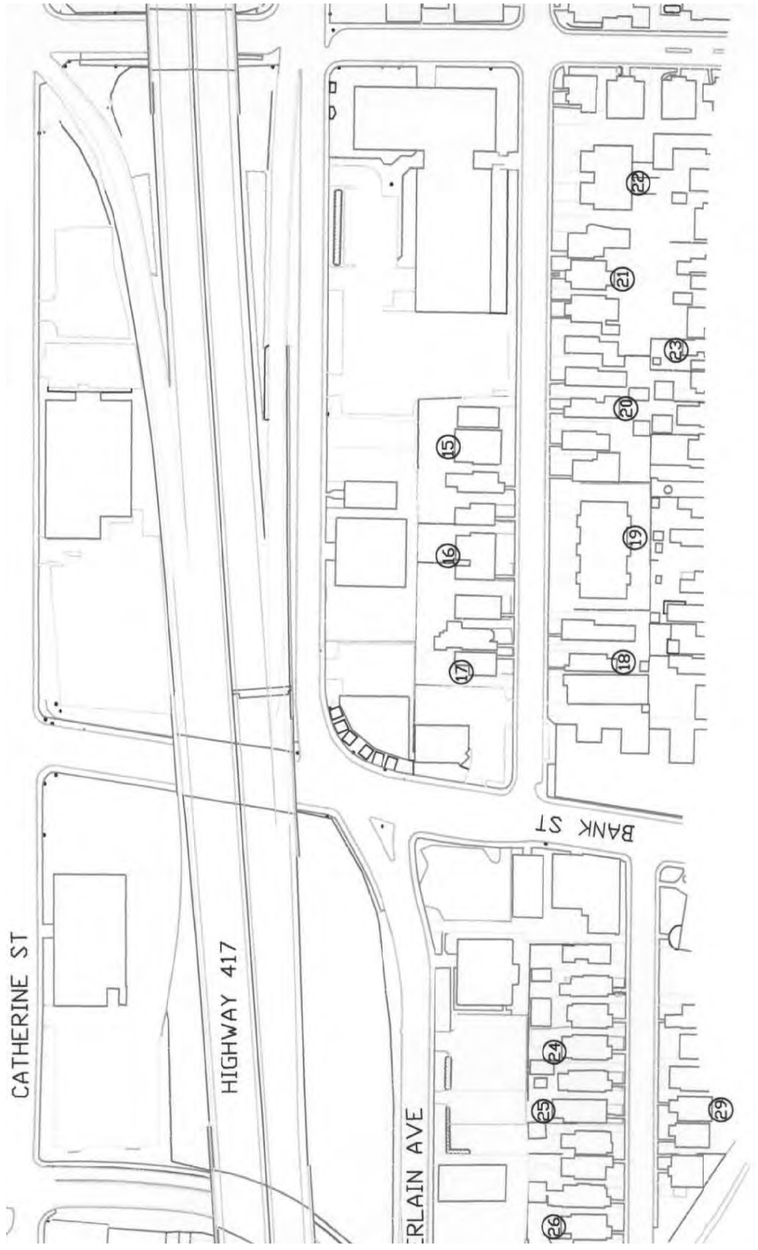


Figure 4 Map of Receiver Locations, O'Connor St. to West of Bank St.

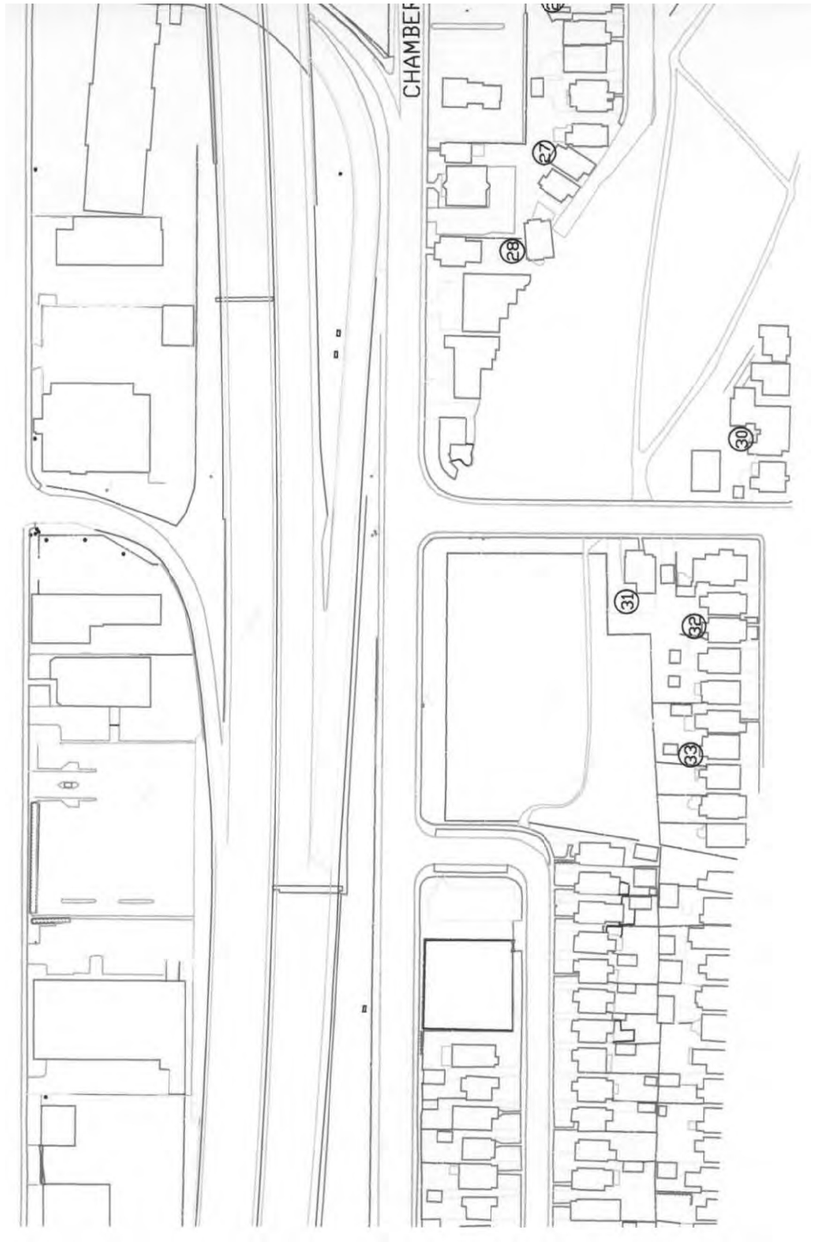
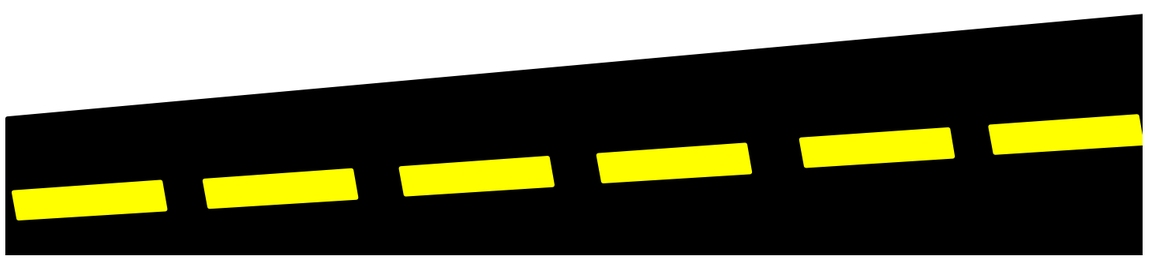


Figure 5 Map of Receiver Locations, West of Bank St. to Glendale Ave.

Appendix C
TNM Output Tables



Existing (2025) Sound Levels

FHWA TNM 2.5 - [Sound Levels : Existing v4:3]

File Edit View Setup Input Calculate Barrier Analysis Parallel Barriers Contours Tables Window Help

BT Engineering

23 August 2018
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 17-010
RUN: MTO Queensway
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	58.7	66	58.7	10	—	58.7	0.0	8	-8.0
R2	2	1	0.0	62.8	66	62.8	10	—	62.8	0.0	8	-8.0
R3	3	1	0.0	68.4	66	68.4	10	Snd Lvl	68.4	0.0	8	-8.0
R4	4	1	0.0	62.2	66	62.2	10	—	62.2	0.0	8	-8.0
R5	5	1	0.0	62.2	66	62.2	10	—	62.2	0.0	8	-8.0
R6	6	1	0.0	61.6	66	61.6	10	—	61.6	0.0	8	-8.0
R7	8	1	0.0	61.9	66	61.9	10	—	61.9	0.0	8	-8.0
R8	9	1	0.0	62.8	66	62.8	10	—	62.8	0.0	8	-8.0
R9	10	1	0.0	59.6	66	59.6	10	—	59.6	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	9	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Future (2035) Sound Levels

FHWA TNM 2.5 - [Sound Levels : Existing 2035:3]

File Edit View Setup Input Calculate Barrier Analysis Parallel Barriers Contours Tables Window Help

BT Engineering — 23 August 2018
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 17-010
RUN: MTO Queensway
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		Calculated minus Goal
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	59.1	66	59.1	10	—	59.1	0.0	8	-8.0
R2	2	1	0.0	63.2	66	63.2	10	—	63.2	0.0	8	-8.0
R3	3	1	0.0	68.8	66	68.8	10	Snd Lvl	68.8	0.0	8	-8.0
R4	4	1	0.0	62.7	66	62.7	10	—	62.7	0.0	8	-8.0
R5	5	1	0.0	62.6	66	62.6	10	—	62.6	0.0	8	-8.0
R6	6	1	0.0	62.0	66	62.0	10	—	62.0	0.0	8	-8.0
R7	8	1	0.0	62.3	66	62.3	10	—	62.3	0.0	8	-8.0
R8	9	1	0.0	63.2	66	63.2	10	—	63.2	0.0	8	-8.0
R9	10	1	0.0	60.0	66	60.0	10	—	60.0	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	9	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Alternative N1, Existing Sound Levels

FHWA TNM 2.5 - [Sound Levels : ALT 1 V3.2:3]

File Edit View Setup Input Calculate Barrier Analysis Parallel Barriers Contours Tables Window Help

BT Engineering — 23 August 2018
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 17-010
RUN: MTO Queensway
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		Calculated minus Goal
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	57.5	66	57.5	10	—	57.5	0.0	8	-8.0
R2	2	1	0.0	60.2	66	60.2	10	—	60.2	0.0	8	-8.0
R3	3	1	0.0	61.6	66	61.6	10	—	61.6	0.0	8	-8.0
R4	4	1	0.0	60.2	66	60.2	10	—	60.2	0.0	8	-8.0
R5	5	1	0.0	60.6	66	60.6	10	—	60.6	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	5	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Alternative N2, Existing Sound Levels

FHWA TNM 2.5 - [Sound Levels : ALT 2 v3.1:3]

File Edit View Setup Input Calculate Barrier Analysis Parallel Barriers Contours Tables Window Help

BT Engineering — 23 August 2018
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 17-010
RUN: MTO Queensway
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	56.7	66	56.7	10	—	56.7	0.0	8	-8.0
R2	2	1	0.0	57.9	66	57.9	10	—	57.9	0.0	8	-8.0
R3	3	1	0.0	62.2	66	62.2	10	—	62.2	0.0	8	-8.0
R4	4	1	0.0	60.2	66	60.2	10	—	60.2	0.0	8	-8.0
R5	5	1	0.0	60.6	66	60.6	10	—	60.6	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	5	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Alternative N3, Existing Sound Levels

FHWA TNM 2.5 - [Sound Levels : ALT 3 v3.1:3]

File Edit View Setup Input Calculate Barrier Analysis Parallel Barriers Contours Tables Window Help

BT Engineering — 23 August 2018
TNM 2.5
Calculated with TNM 2.5

RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 17-010
RUN: MTO Queensway
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h		Increase over existing		Type Impact	With Barrier Calculated LAeq1h	Noise Reduction		
				Calculated	Crit'n	Calculated	Crit'n Sub'l Inc			Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	57.8	66	57.8	10	—	57.8	0.0	8	-8.0
R2	2	1	0.0	61.1	66	61.1	10	—	61.1	0.0	8	-8.0
R3	3	1	0.0	64.4	66	64.4	10	—	64.4	0.0	8	-8.0
R4	4	1	0.0	60.3	66	60.3	10	—	60.3	0.0	8	-8.0
R5	5	1	0.0	60.6	66	60.6	10	—	60.6	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	5	0.0	0.0	0.0
All Impacted	0	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Appendix C
TNM 2.5 Sound Level Results

Alternative N4, Existing Sound Levels

FHWA TNM 2.5 - [Sound Levels : ALT 4 v3.1:3]

File Edit View Setup Input Calculate Barrier Analysis Parallel Barriers Contours Tables Window Help

BT Engineering

23 August 2018
TNM 2.5
Calculated with TNM 2.5

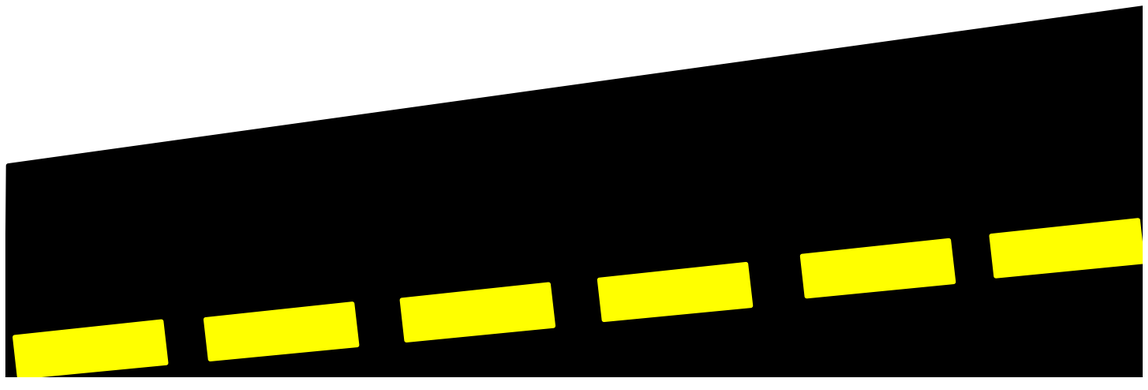
RESULTS: SOUND LEVELS
PROJECT/CONTRACT: 17-018
RUN: MTO Queensway
BARRIER DESIGN: INPUT HEIGHTS
ATMOSPHERICS: 20 deg C, 50% RH

Average pavement type shall be used unless a State highway agency substantiates the use of a different type with approval of FHWA.

Receiver Name	No.	#DUs	Existing LAeq1h	No Barrier LAeq1h Calculated	Crit'n	Increase over existing Calculated	Crit'n Sub'l Inc	Type Impact	With Barrier Calculated LAeq1h	Noise Reduction Calculated	Goal	Calculated minus Goal
			dBA	dBA	dBA	dB	dB		dBA	dB	dB	dB
R1	1	1	0.0	58.5	66	58.5	10	—	58.5	0.0	8	-8.0
R2	2	1	0.0	62.6	66	62.6	10	—	62.6	0.0	8	-8.0
R3	3	1	0.0	68.0	66	68.0	10	Snd Lvl	68.0	0.0	8	-8.0
R4	4	1	0.0	59.6	66	59.6	10	—	59.6	0.0	8	-8.0
R5	5	1	0.0	60.5	66	60.5	10	—	60.5	0.0	8	-8.0

Dwelling Units	# DUs	Noise Reduction Min	Avg	Max
		dB	dB	dB
All Selected	5	0.0	0.0	0.0
All Impacted	1	0.0	0.0	0.0
All that meet NR Goal	0	0.0	0.0	0.0

Appendix K
Traffic Volume Variations on Queensway Memorandum



BT ENGINEERING
BTE
100 Craig Henry Drive, Suite 201
Ottawa, Ontario K2G 5W3

MEMORANDUM

TO:	File	**DATE:**	June 7, 2017
FROM:	Daniel Riendeau	**PROJECT #:**	17-010
PROJECT:	Ottawa Queensway Downtown Bridges, GWP 4170-13-00		
SUBJECT:	Traffic Volume Variations on Queensway		

Initiated by MTO in April 2017, this project involves an MTO environmental assessment and preliminary design for the rehabilitation/replacement of 7 structures at 4 sites on Highway 417 (Queensway) within the urban core of the City of Ottawa. The Study Area and bridge sites along Highway 417 extend from Metcalfe Street to Main Street and are illustrated on **Figure 1**.

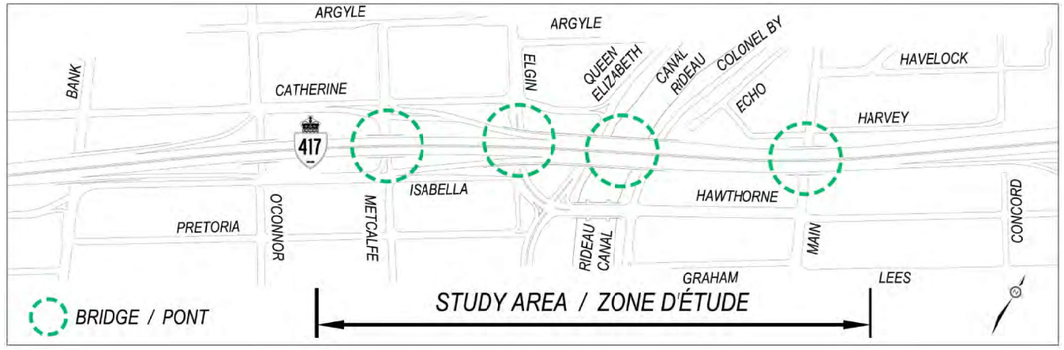


Figure 1: Study Area

As documented in the 2014 and 2015 Road Users Review, the City of Ottawa measured traffic volumes along the Ottawa River screenline and the Green's Creek screenline in spring 2013, fall 2014 and fall 2015. Changes were made on Highway 417 after spring 2013 to add bus lanes between Nicholas Street and St. Laurent Boulevard as a mitigation measure for the construction of the LRT. Construction started in summer 2013 and the new bus lanes were opened in 2015.

The traffic changes from spring 2013 to fall 2014 are illustrated in **Figure 2** and **Figure 3**. The changes from spring 2013 to fall 2015 are illustrated in **Figure 4** and **Figure 5**.

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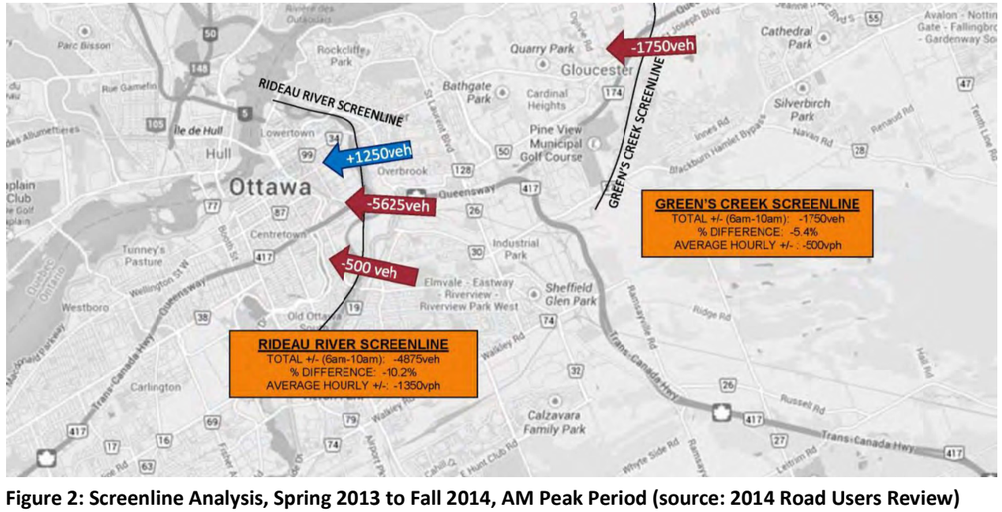


Figure 2: Screenline Analysis, Spring 2013 to Fall 2014, AM Peak Period (source: 2014 Road Users Review)

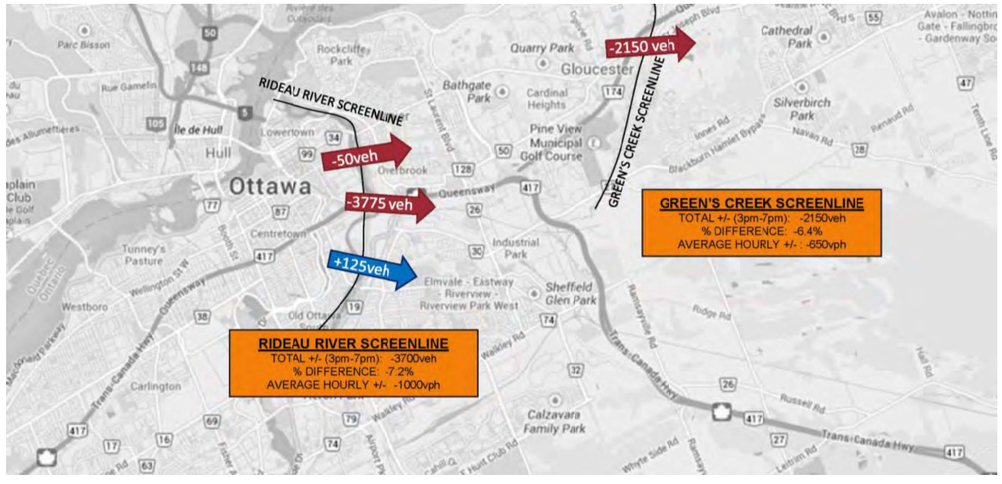


Figure 3: Screenline Analysis, Spring 2013 to Fall 2014, PM Peak Period (source: 2014 Road Users Review)

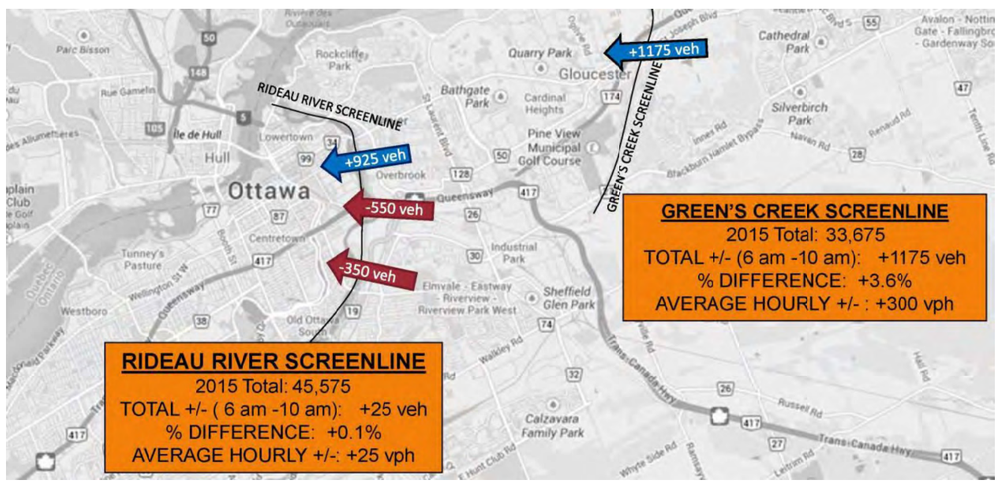


Figure 4: Screenline Analysis, Spring 2013 to Fall 2015, AM Peak Period (source: 2015 Road Users Review)

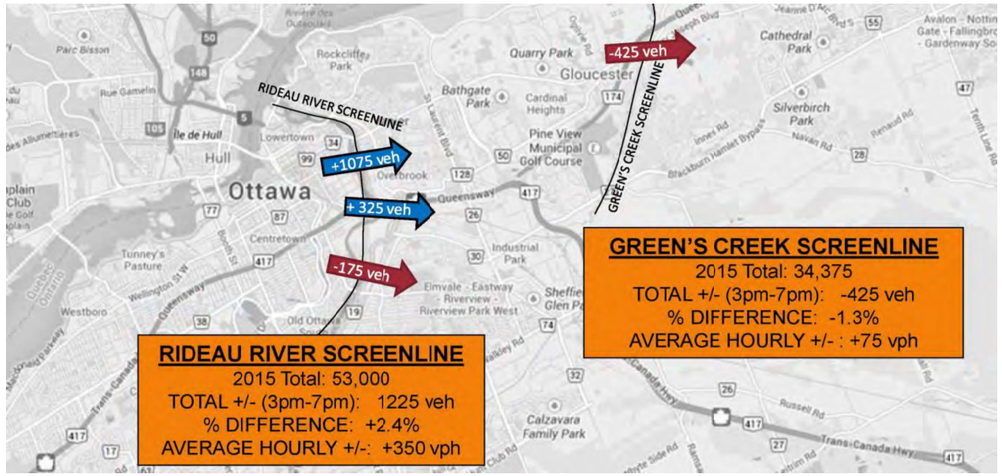


Figure 5: Screenline Analysis, Spring 2013 to Fall 2015, PM Peak Period (source: 2015 Road Users Review)

The traffic volume variations during and after construction are documented in **Table 1** and **Table 2**.

Table 1: 4-Hour Traffic Volumes, AM Peak Period, Westbound Direction			Spring 2013	Fall 2014	Fall 2015
Rideau River Screenline	**Total 4 h Volume**		**45,550**	**40,675**	**45,575**
	Change from Spring 2013	All Crossings	–	-4,875 (-10%)	+25 (+0.1%)
		Highway 417	–	-5,625	-550
Green's Creek Screenline	**Total 4 h Volume**		**32,500**	**30,750**	**33,675**
	Change from Spring 2013		–	-1,750 (-5%)	+1,175 (+4%)

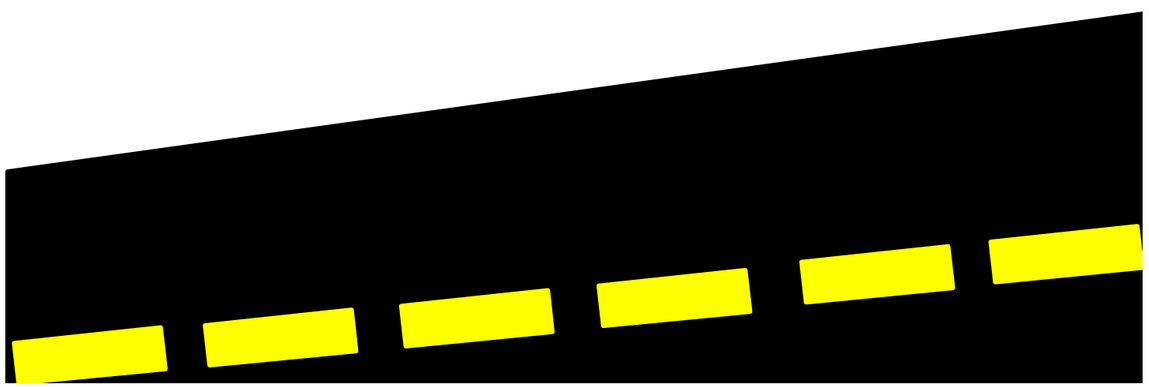
Table 2: 4-Hour Traffic Volumes, PM Peak Period, Eastbound Direction			Spring 2013	Fall 2014	Fall 2015
Rideau River Screenline	**Total 4 h Volume**		**51,775**	**48,075**	**53,000**
	Change from Spring 2013	All Crossings	–	-3,700 (-7%)	+1,225 (+2%)
		Highway 417	–	-3,775	+325
Green's Creek Screenline	**Total 4 h Volume**		**34,800**	**32,650**	**34,375**
	Change from Spring 2013		–	-2,150 (-6%)	-425 (-1%)

According to the traffic volume information above, traffic at both screenlines significantly decreased in fall 2014 compared to spring 2013, by up to 10%. The decrease was more significant on Highway 417, which indicates that some of the highway traffic was redistributed to other crossings. The rest of the decrease may have been the result of opting to work at home, using a different mode (e.g. transit, cycling), travelling at a different time or avoiding unnecessary trips (a.k.a. induced demand).

The traffic changes in fall 2015 are different, as if drivers have almost all returned to their previous travel patterns. In fact, a traffic increase (up to 2% from the spring 2013 level of traffic, or 1% per year) has occurred on the Rideau River screenline. However, Highway 417 experienced a slight decrease of its morning traffic (-550) and a barely significant increase of its afternoon traffic (+325).

Based on the above, it is assumed that the closure of 1 lane on Highway 417 would lead to a traffic decrease of up to 10%. Otherwise, due to the freeway being near capacity, traffic is not expected to grow significantly.

Appendix L
Cycling Facilities Memorandum



BT ENGINEERING
100 Craig Henry Drive, Suite 201
Ottawa, Ontario K2G 5W3

MEMORANDUM

TO:	File	**DATE:**	October 2, 2019
FROM:	Daniel Riendeau	**PROJECT #:**	17-010
PROJECT:	GWP 4170-13-00 Ottawa Queensway Downtown Bridges		
SUBJECT:	Cycling Facilities		

Initiated by MTO in April 2017, the Queensway Ottawa Downtown Bridges project involves an environmental assessment and preliminary design for the rehabilitation/replacement of 7 structures at 4 sites on Highway 417 (Queensway) within the urban core of the City of Ottawa. The Study Area and bridge sites on Highway 417 extend from Metcalfe Street to Main Street and are illustrated on **Figure 1**.

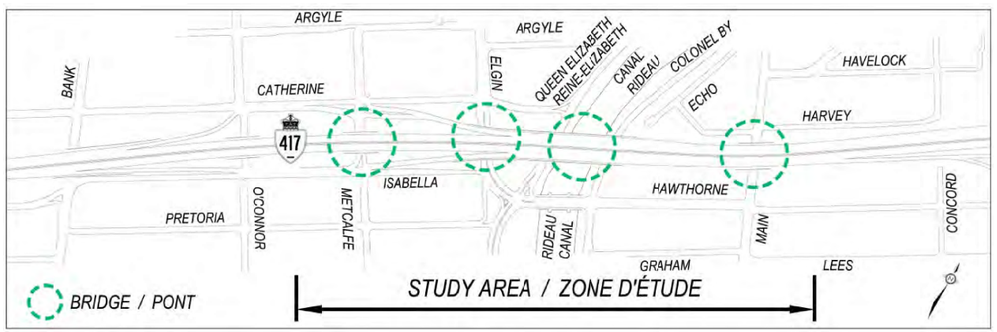


Figure 1: Study Area

Any bridge rehabilitation and/or replacement will have to account for the presence of an existing or planned bicycle route on the local street. The existing bicycle network around the study area is shown in **Figure 2**. The ultimate bicycle network as per the 2013 Ottawa Bicycle Plan is shown in **Figure 3**.



Figure 2: Existing Cycling Network (source: maps.ottawa.ca/geoottawa)

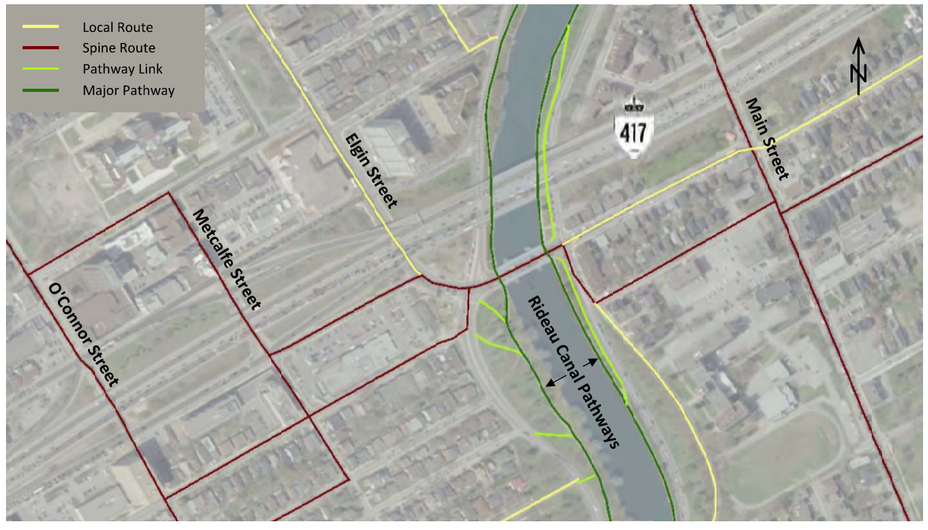


Figure 3: Ultimate Cycling Network (source: maps.ottawa.ca/geoottawa)

Subject: Cycling Facilities
Project: 17-010 Queensway Ottawa Downtown Bridges
Date: October 2, 2019

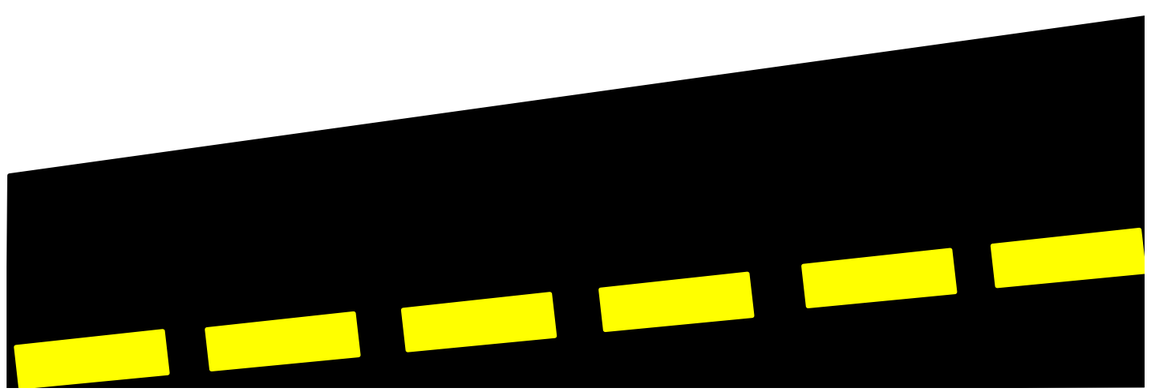
The different types of cycling routes are defined in the Ottawa Bicycle Plan as follow:

- **Spine Routes** follow major roadways (typically arterials) and may provide a reserved space for cyclists, ideally either a cycle track or a buffered bike lane. They provide access along major corridors and to local neighbourhood routes.
- **Local Routes** are typically used at the neighbourhood level, providing access from residential streets and shopping areas to the more major spine and bikeway routes that allow travel for longer distances through the city. Local routes are typically on-road facilities and could be painted bike lanes or shared lanes with mixed traffic.
- **Pathways** are ideal along continuous corridors that do not have many intersections. These facilities can be found in urban settings as linkages or cut-throughs between roadways. They may also provide both cycling and pedestrian linkages along major arterials.

It is noted that even though Main Street is depicted as a "suggested route" under Highway 417, bicycle signage is in fact present on the roadway between Graham Avenue and Harvey Street – a segregated bicycle lane in the northbound direction, and a combination of a segregated lane and sharrows in the southbound direction.

Elgin Street and Metcalfe Street are expected to ultimately become part of a spine route and a local route respectively. However, it is noted that no cycling improvements are expected within the City's 2031 Affordable Plan, according to the 2013 Transportation Master Plan. On the other hand, the Elgin Street and Hawthorne Avenue Functional Design Study dated May 2017 recommends that Elgin Street become a shared roadway with a speed limit of 30 km/h.

Appendix M
Ottawa Tourism 2017 Festivals and Events Calendar





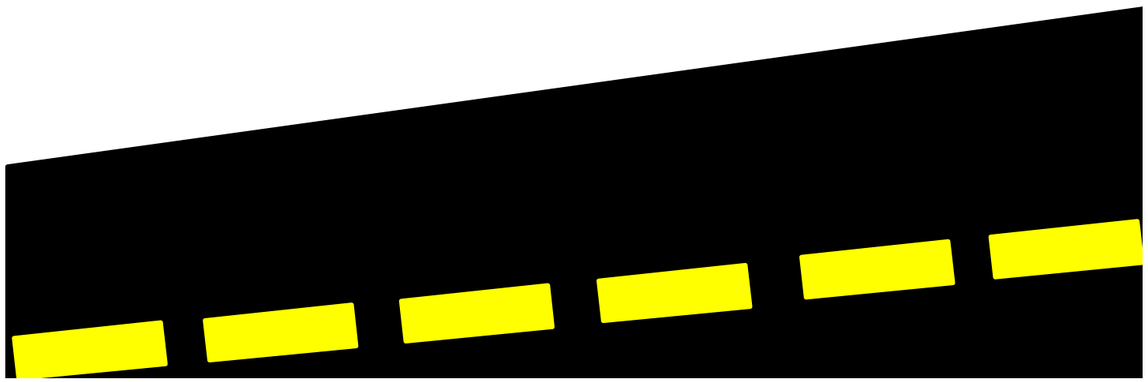
	Festival	2017 Dates	Website
Winter	Christmas Lights Across Canada	Dec 6 (17)-Jan 8 (18)	www.christmaslights.gc.ca
	Winterlude	Feb 3-20, 2017	www.pch.gc.ca/winterlude
	Gatineau Loppet	Feb 17-19, 2017	www.gatineauloppet.com
	Ottawa Irish Festival	March 10-18, 2017	www.irishsocietyncr.com
Spring	Maple Sugar Festival	Mar 28-Apr 2, 2017	www.maplesugarfest.ca
	Ottawa Food & Wine: Eat, Drink, Spring	May, 2017	www.ottawawineandfoodshow.com
	Ottawa International Writers Festival	April 13-18, 2017	www.writersfestival.org
	Canadian Tulip Festival	May 12-22, 2017	www.tulipfestival.ca
	Ottawa Marathon Race Weekend	May 27-28, 2017	www.runottawa.ca
	Ottawa Children's Festival	May 10-14, 2017	www.ottawachildrensfestival.ca
	Westfest	June 1-4, 2017	www.westfest.ca
	Canada Dance Festival	June 3-10, 2017	www.canadadance.ca
	Italian Week	June 8-18, 2017	www.italianweekottawa.org
	Festival Franco-Ontarien	June 15-17, 2017	www.ffo.ca
	Ottawa Fringe Festival	June 14-25, 2017	www.ottawafringe.com
	Tim Horton's Ottawa Dragon Boat Festival	June 22-25, 2017	www.dragonboat.net
	Summer Solstice Aboriginal Arts Festival	June 16-20, 2017	www.ottawasummersolstice.ca
Summer	TD Ottawa International Jazz Festival	June 22-July 3, 2017	www.ottawajazzfestival.com
	RCMP Sunset Ceremony	June 21-25, 2017	www.rcmp-grc.gc.ca/ottawa/ne-no/pr-cp/2016/0620-sunset-cre
	Changing of the Guard (10am)	June 25-Aug 20, 2017	www.army-armee.forces.gc.ca/en/ceremonial-guard/performan
	Unisong Canadian Choir Festival	June 28-July 1, 2017	www.unisong.ca
	Community Cup	June 25th, 2017	www.communitycup.ca
	Canada Day!	July 1st, 2017	www.canadaday.gc.ca/eng/1399898650690
	RBC Royal Bank Bluesfest	July 6-16, 2017	www.ottawabluesfest.ca
	Music and Beyond	July 4-17 2017	www.musicandbeyond.ca
	Sound and Light (Parliament Hill)	July 11-Sept 16, 2017	www.canada.pch.gc.ca/eng/1431092517027
	Hope Volleyball SummerFest	July 15th, 2017	www.hopehelps.com
	Ottawa Chamberfest	July 20-Aug3, 2017	www.chamberfest.com
	Ottawa International Buskerfest	Aug3-7, 2017	www.ottawabuskerfestival.com
	Ottawa Lumiere Festival	Aug 19th, 2017	www.lumiereottawa.ca/
	Ottawa Greek Fest	Aug 10-20, 2017	www.ottawagreekfest.com
	Navan Fair	Aug 10-13, 2017	www.navanfair.com
	Capital Pride	Aug 14-20, 2017	www.capitalpride.ca
	Gatineau Hot Air Balloon Festival	Aug 31-Sept 4, 2017	www.montgolfieresgatineau.com
	Ottawa Turkish Festival	Sept 4-10, 2017	www.ottawaturkishfestival.com
	City Folk Festival	Sept 14-17, 2017	www.cityfolkfestival.com
Fall	Ottawa International Animation Festival	Sept 20-24, 2017	www.animationfestival.ca
	Fall Rhapsody	Sept 30-Oct 15, 2017	www.ncc-ccn.gc.ca/places-to-visit/gatineau-park/fall-
	Oktoberfest	Sept 28-30, 2017	www.oktoberfestottawa.com
	Ottawa International Writers Festival	Oct 19-24, 2017	www.writersfestival.org
	Ottawa Food & Wine Festival	Nov 2-5, 2017	www.ottawawineandfoodshow.com

Sporting Events: Located in the revitalized Lansdowne Park next to the Rideau Canal UNESCO World Heritage Site in downtown Ottawa, TD P exciting new urban sports and entertainment destination, featuring a spectacular 24,000 seat outdoor stadium, a newly refurbished 10, arena, 360,000 sq. feet of retail and dining and an 18-acre urban park with festival and event capabilities. (www.tdplace.ca). TD Place is hom REDBLACKS (www.ottawaredblacks.com) of the Canadian Football League, the North American Soccer League's Ottawa Fury FC (www.ottawa the Ontario Hockey Leagues Ottawa 67's. www.ottawa67s.com. If you are looking to see how Ottawans celebrate sport, take in a game sporting events. Check the team's website to see their schedule for a home game.

Ottawa Tourism
150 Elgin St, Suite 1405
Ottawa, ON, K2P 1L4
traveltrade@ottawatourism.ca

Appendix N
Vehicular, Pedestrian, Cyclist, Transit and Truck Detours

Metcalfe Street Detours



NB Metcalfe General Traffic Detour
3 Week Advance Closure

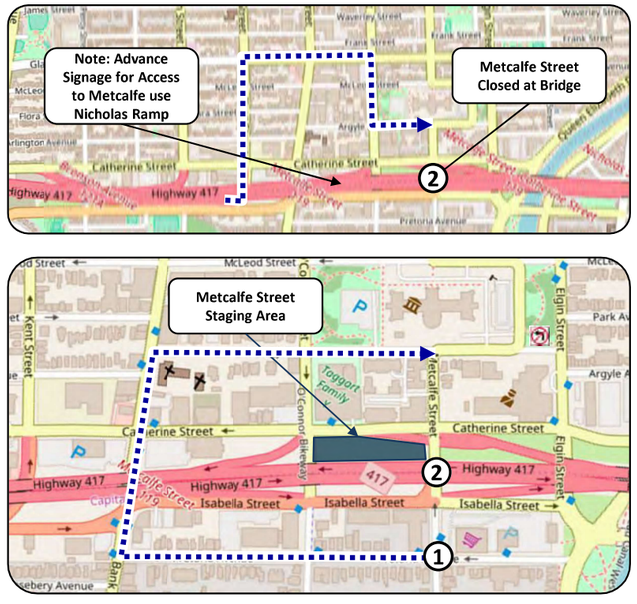
LEGEND

General Traffic: ■ ■ ■ ■ ■

TIME OF DETOUR

3 week closure of Metcalfe Street in advance of weekend move





REPLACEMENT

METCALFE STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

General Traffic: 1,190 m
+ 1,130 m

Note:
1. Metcalfe Off-Ramp advance signage for closure of off-ramp during weekend move.

NB Metcalfe General Traffic Detour
Weekend Closure

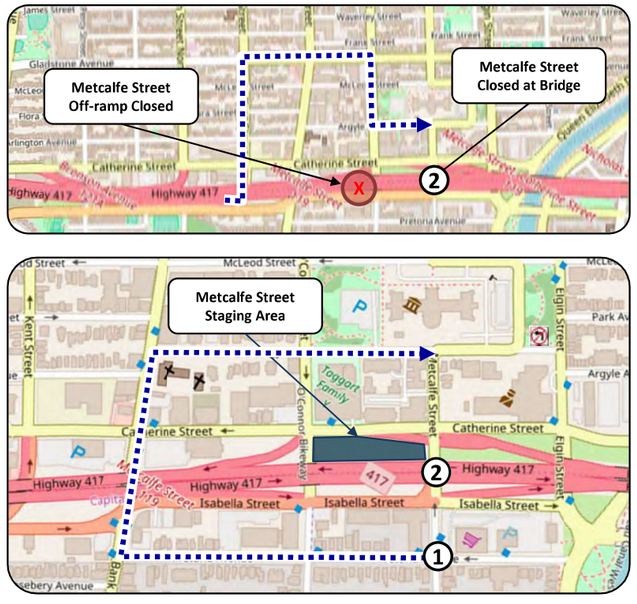
LEGEND

General Traffic: ■ ■ ■ ■ ■

TIME OF DETOUR

3-day Weekend Closure (Saturday, Sunday and Friday or Monday)





REPLACEMENT

METCALFE STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

General Traffic: 1,190 m
+ 1,130 m

Note:
1. Metcalfe Off-Ramp requires crossing 3 lanes to turn right onto O'Connor Street. Recommend closing Metcalfe Off-ramp and directing traffic from Kent off-ramp.

NB Metcalfe Pedestrian and Cyclist Detour
3 Week Advance Closure

LEGEND

Pedestrian Route:

Cyclist Route

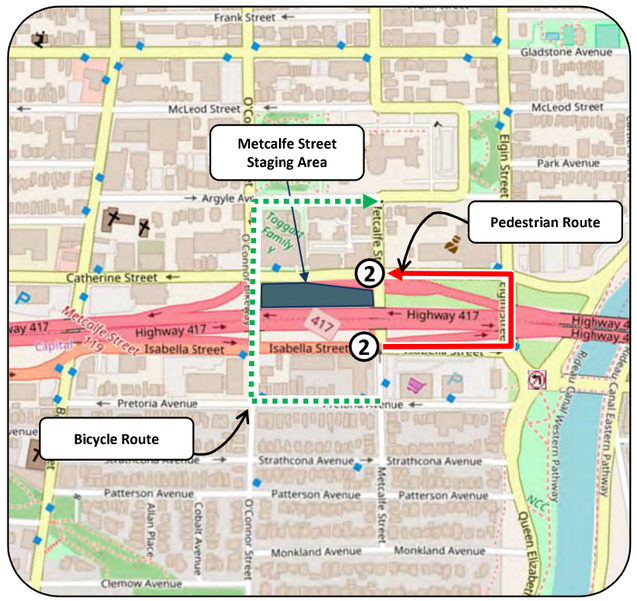
TIME OF DETOUR

3 week closure of Metcalfe Street

①



②



REPLACEMENT

METCALFE STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

Pedestrian Route:	470 m
Cyclist Route:	650 m

NB Metcalfe Pedestrian and Cyclist Detour
Weekend Closure

LEGEND

Pedestrian Route:

Cyclist Route

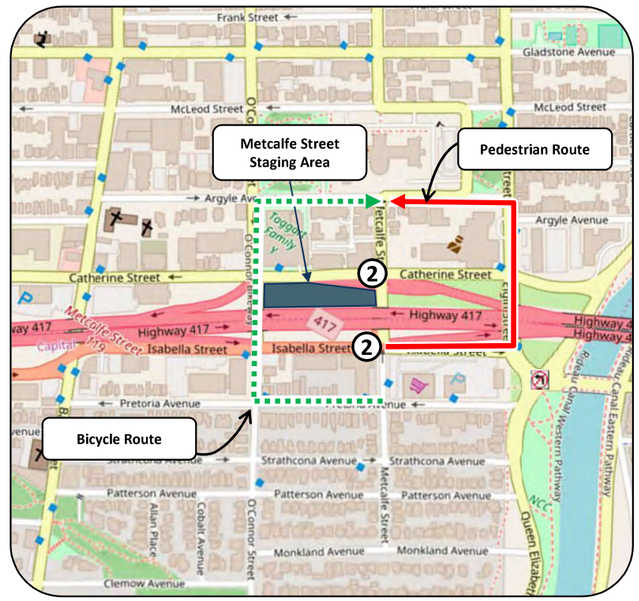
TIME OF DETOUR

3-day Weekend Closure (Saturday, Sunday and Friday or Monday)

①



②



REPLACEMENT

METCALFE STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

Pedestrian Route:	570 m
Cyclist Route:	650 m

SB Metcalfe Pedestrian Detour
3 Week Advance Closure

LEGEND

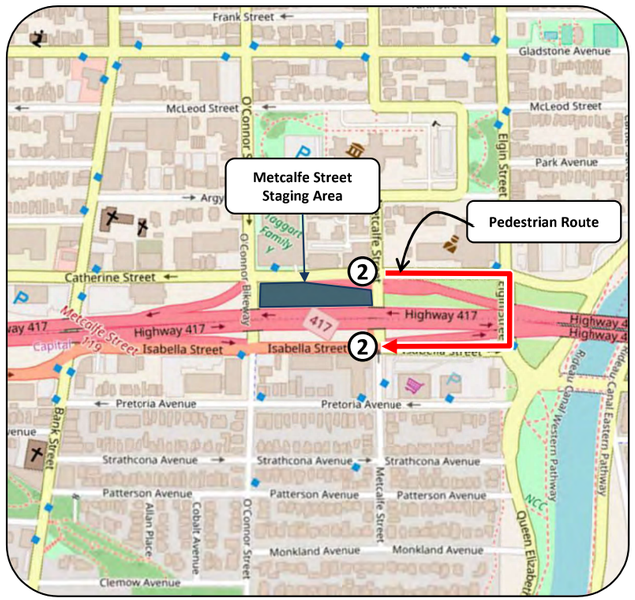
Pedestrian Route:

Cyclist Route: N/A

TIME OF DETOUR

Rapid:
3 week closure of Metcalfe Street





REPLACEMENT

METCALFE STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

Pedestrian Route: 470 m

SB Metcalfe Pedestrian Detour
Weekend Closure

LEGEND

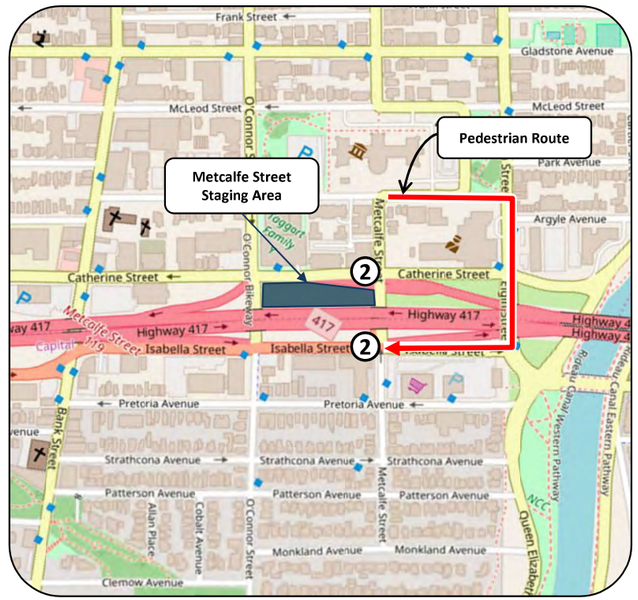
Pedestrian Route:

Cyclist Route: N/A

TIME OF DETOUR

3-day Weekend Closure (Saturday, Sunday and Friday or Monday)





REPLACEMENT

METCALFE STREET

(CLOSED AT BRIDGE)

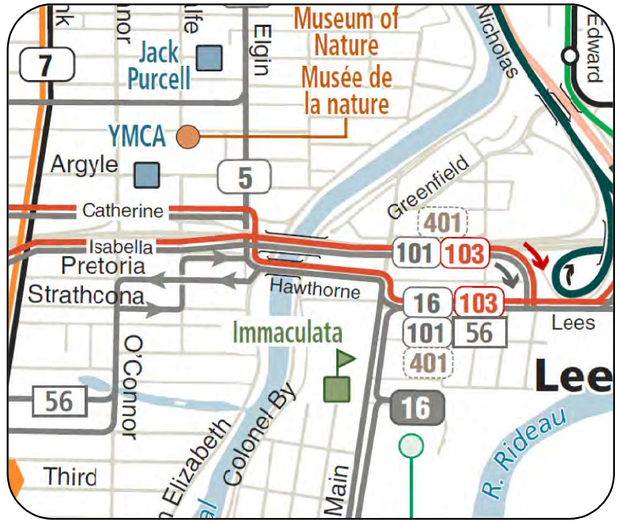
Summary of Detour Travel Lengths

Pedestrian Route: 570 m

Metcalfe Street Transit Detour N/A

TRANSIT DETOUR

N/A



NO TRANSIT DETOUR

METCALFE STREET

Summary of Transit Detour Travel Length

0 m

Note:

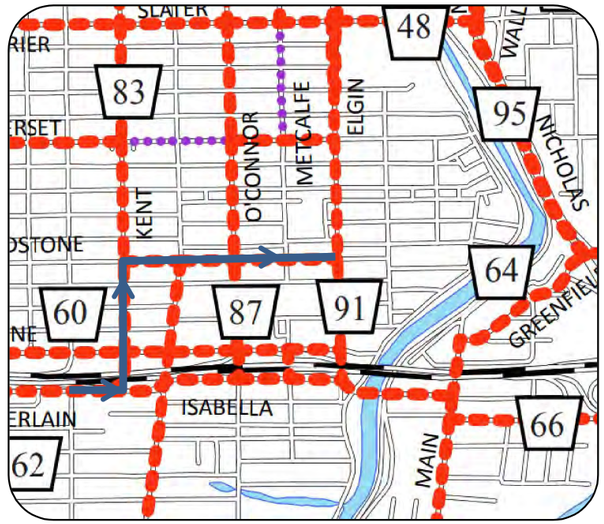
1. Transit detours are based on existing routes. The detour routes will be reviewed during detail design to determine if transit routes have changed since the EA Study.

NB Metcalfe Street Truck Detour
3 Week Advance Closure

TRUCK DETOUR

Isabella to Kent to Gladstone to Elgin

TIME OF DETOUR
Rapid:
3 week closure of Metcalfe Street



METCALFE STREET CLOSURE

Summary of Truck Detour Travel Length

1,200 m

Note:

1. Vehicles cannot turn left from Isabella to NB Elgin. Trucks must travel along designated truck routes, except for local deliveries and are not permitted on NCC parkways (QED or CBD)
2. Metcalfe is a one-way northbound road. Trucks are only permitted to travel on Metcalfe from Isabella to Catherine Street.

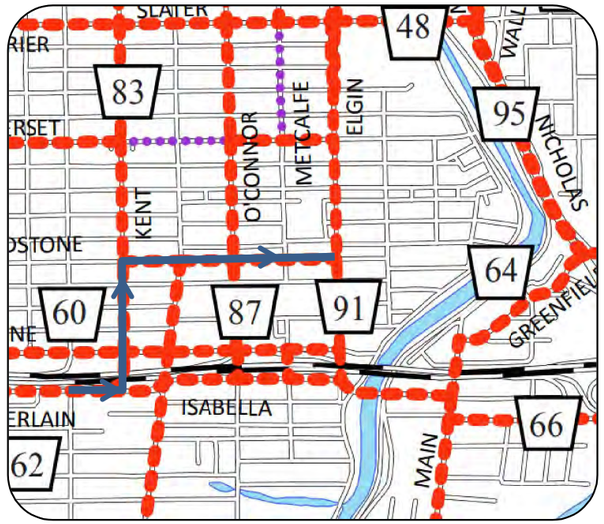
NB Metcalfe Street Truck Detour Weekend Closure

TRUCK DETOUR

Isabella to Kent to Gladstone to Elgin

TIME OF DETOUR

3-day Weekend Closure (Saturday, Sunday and Friday or Monday)



METCALFE STREET CLOSURE

Summary of Truck Detour Travel Length

1,200 m

Note:

1. Vehicles cannot turn left from Isabella to NB Elgin. Trucks must travel along designated truck routes, except for local deliveries and are not permitted on NCC parkways (QED or CBD)
2. Metcalfe is a one-way northbound road. Trucks are only permitted to travel on Metcalfe from Isabella to Catherine Street.

Elgin Street Detours

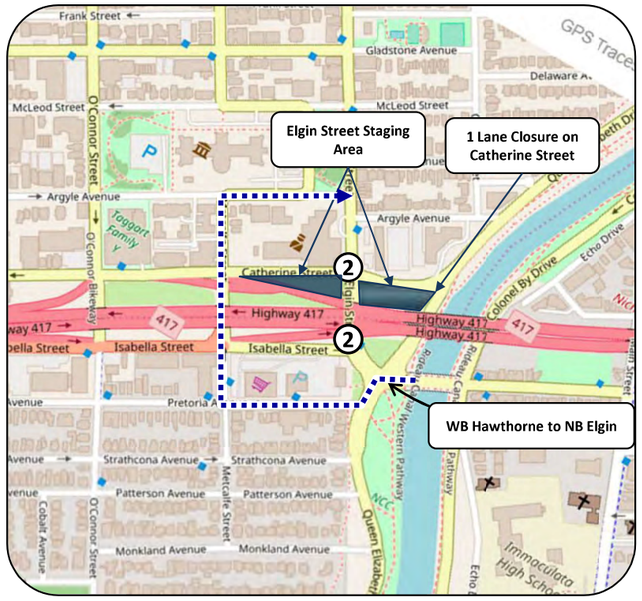
NB Elgin General Traffic Detour
3 Week Advance Closure

LEGEND

General Traffic: ■ ■ ■ ■ ■

TIME OF DETOUR

Rapid:
3 week closure of Metcalfe Street



REPLACEMENT

ELGIN STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

General Traffic: 725 m

Note:
1. Current conditions do not permit left turns from NB QED to NB Elgin. No detour required.
2. Where possible, detours from city streets to city streets is preferred.

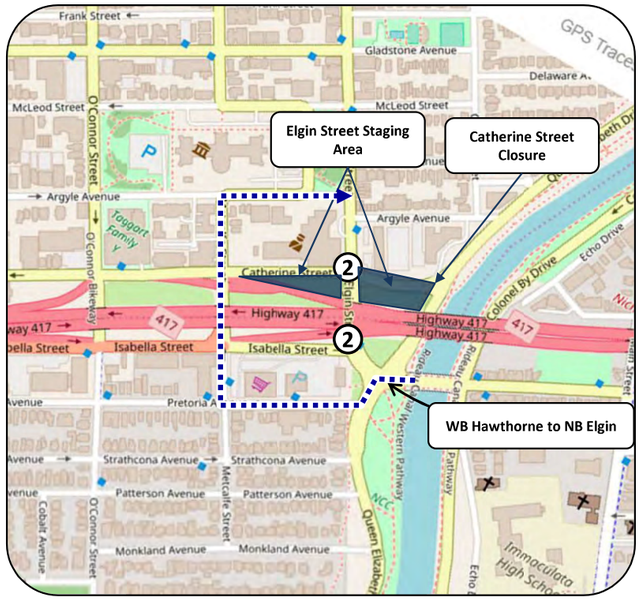
NB Elgin General Traffic Detour
Weekend Move

LEGEND

General Traffic: ■ ■ ■ ■ ■

TIME OF DETOUR

3-day Weekend Closure (Saturday, Sunday and Friday or Monday)



REPLACEMENT

ELGIN STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

General Traffic: 725 m

Note:
1. Current conditions do not permit left turns from NB QED to NB Elgin. No detour required.
2. Where possible, detours from city streets to city streets is preferred.

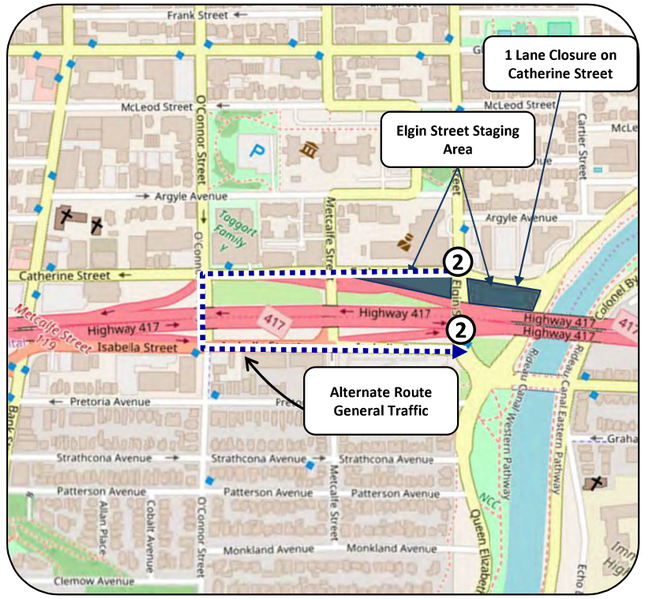
SB Elgin General Traffic Detour
3 Week Advance Closure

LEGEND

General Traffic: ■ ■ ■ ■ ■

TIME OF DETOUR

Rapid:
3 week closure of Elgin Street



REPLACEMENT

ELGIN STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

General Traffic: 820 m

Note:
1. Rapid Replacement requires closure of Catherine Street from Metcalfe Street to Elgin Street
2. Where possible, detours from city streets to city streets is preferred.

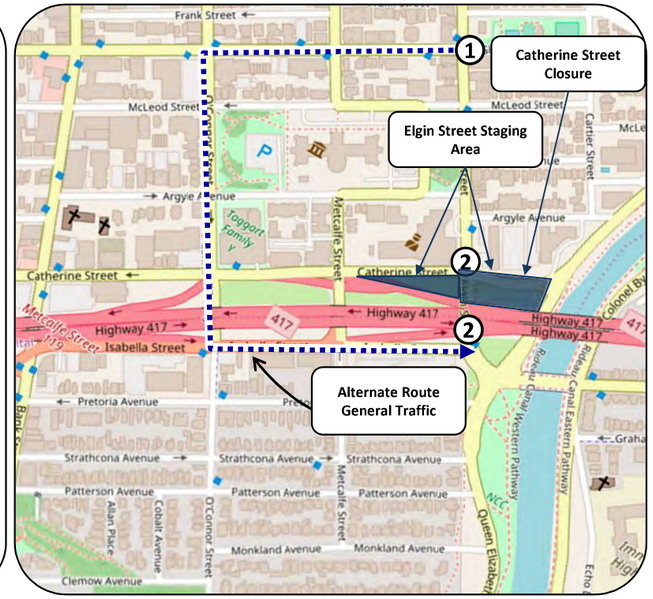
SB Elgin General Traffic Detour
Weekend Closure

LEGEND

General Traffic: ■ ■ ■ ■ ■

TIME OF DETOUR

3-day Weekend Closure (Saturday, Sunday and Friday or Monday)



REPLACEMENT

ELGIN STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

General Traffic: 1,140 m

Note:
1. Rapid Replacement requires closure of Catherine Street from Metcalfe Street to Queen Elizabeth Drive (including Catherine/Elgin intersection) for SPMT movement on the weekend.
2. Where possible, detours from city streets to arterial city streets is preferred.

Elgin Pedestrian and Cyclist Detour
3 Week Advance Closure

LEGEND

Pedestrian Route:

Cyclist Route

TIME OF DETOUR

Rapid:
3 week closure of Elgin Street

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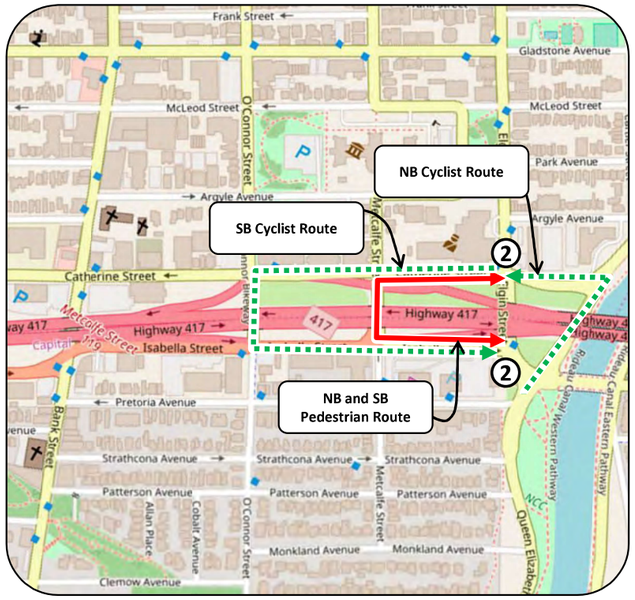

REPLACEMENT

ELGIN STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

Pedestrian Route:	480 m
Cyclist Route:	810 m + 290 m

Elgin Pedestrian and Cyclist Detour
Weekend Closure

LEGEND

Pedestrian Route:

Cyclist Route

TIME OF DETOUR

3-day Weekend Closure (Saturday, Sunday and Friday or Monday)

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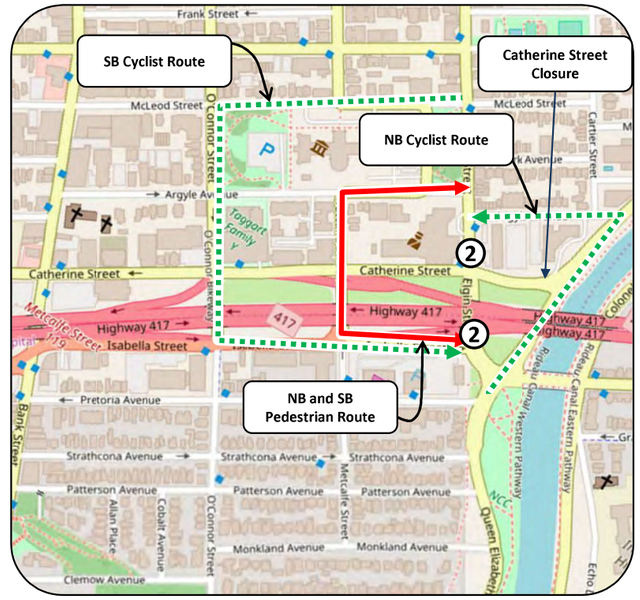


REPLACEMENT

ELGIN STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

Pedestrian Route:	480 m
Cyclist Route:	1,005 m + 480 m

Elgin Street Transit Detour
Route 5

TRANSIT DETOUR

NB 5

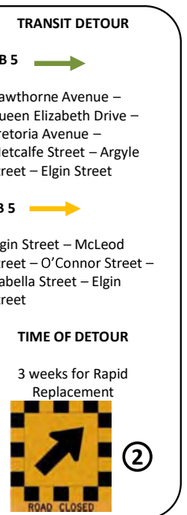
Hawthorne Avenue – Queen Elizabeth Drive – Pretoria Avenue – Metcalfe Street – Argyle Street – Elgin Street

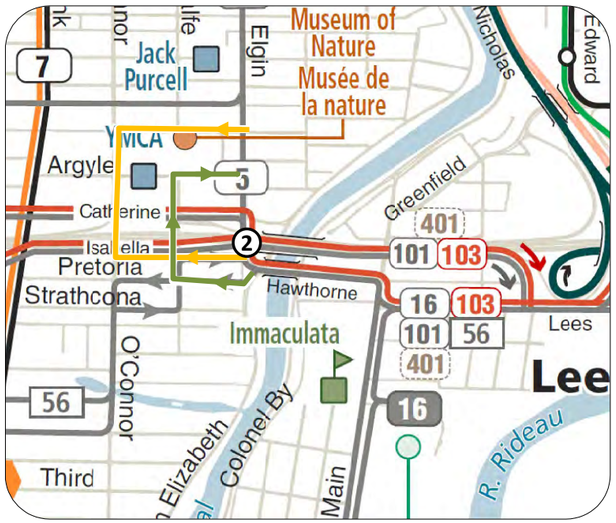
SB 5

Elgin Street – McLeod Street – O'Connor Street – Isabella Street – Elgin Street

TIME OF DETOUR

3 weeks for Rapid Replacement





5 TRANSIT DETOUR

ELGIN STREET

Summary of Transit Detour Travel Length

700 m (NB)
1000 m (SB)

Note:

1. Transit detours are based on existing routes. The detour routes will be reviewed during detail design to determine if transit routes have changed since the EA Study.
2. Transit routes are not permitted on NCC parkways.

Elgin Street Transit Detour
EB Route 101/103

TRANSIT DETOUR

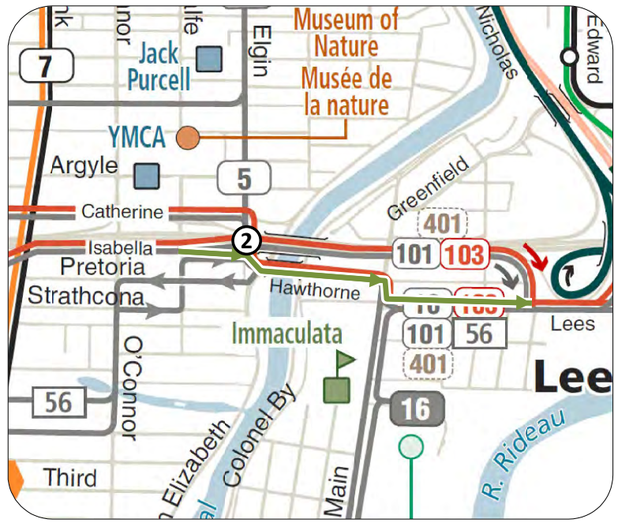
EB 101/103

Isabella Street – Elgin Street – Hawthorne Avenue – Main Street – Lees Avenue

TIME OF DETOUR

3 weeks for Rapid Replacement





EB 101/103 TRANSIT DETOUR

ELGIN STREET

Summary of Transit Detour Travel Length

900 m (NB)

Note:

1. Transit detours are based on existing routes. The detour routes will be reviewed during detail design to determine if transit routes have changed since the EA Study.
2. Transit routes are not permitted on NCC parkways.

Elgin Street Transit Detour
WB Route 101/103

TRANSIT DETOUR

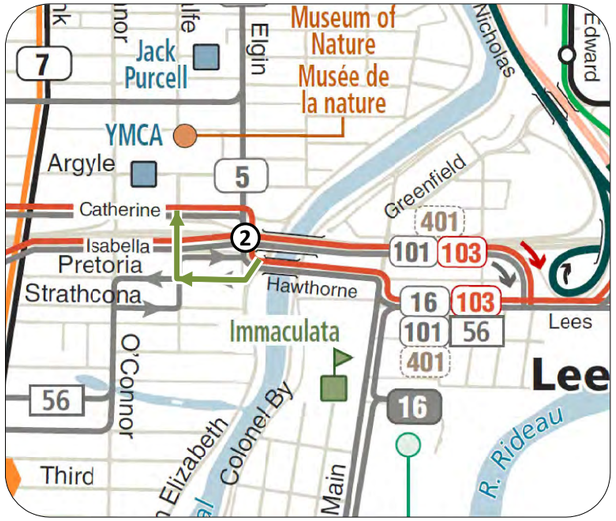
WB 101/103

Hawthorne Avenue – Pretoria Street – Metcalfe Street – Catherine Street

TIME OF DETOUR

3 weeks for Rapid Replacement





WB 101/103 TRANSIT DETOUR

ELGIN STREET

Summary of Transit Detour Travel Length

400 m

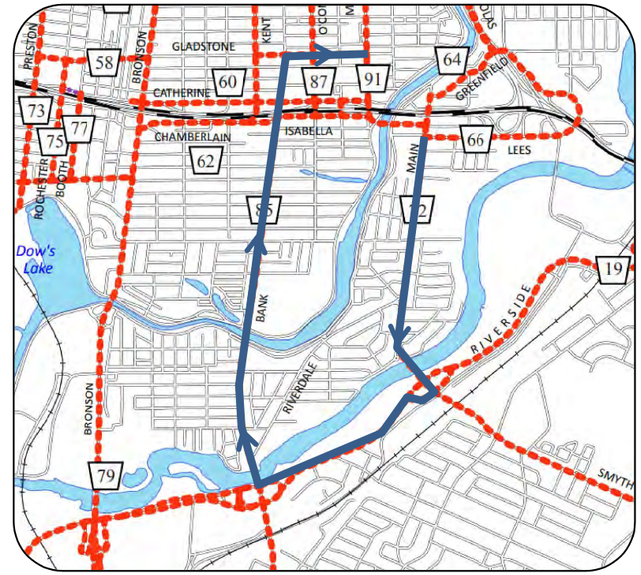
Note:

1. Transit detours are based on existing routes. The detour routes will be reviewed during detail design to determine if transit routes have changed since the EA Study.
2. Transit routes are not permitted on NCC parkways.

NB Elgin Street Truck Detour
3 Week Advance Closure

TRUCK DETOUR

Isabella to Queensway to Main Off-ramp to Nicholas to Slater to Elgin



ELGIN STREET CLOSURE

Summary of Truck Detour Travel Length

3,600 m

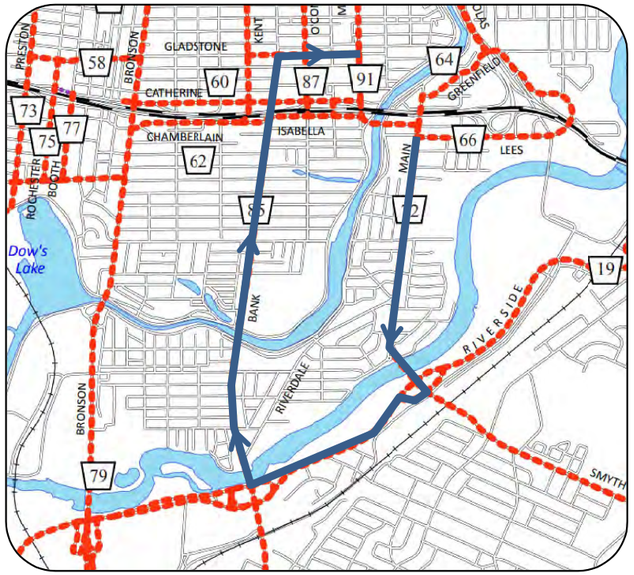
Note:

1. Vehicles cannot turn left from Isabella to NB Elgin.
2. Trucks cannot turn from Greenfield to Nicholas and vice versa.
3. Trucks impacted by Elgin Street closure must be travelling from WB Hawthorne Street to NB Elgin Street or SB Elgin to EB Hawthorne. Trucks must travel along designated truck routes, except for local deliveries and are not permitted on NCC parkways (QED or CBD)
4. Metcalfe is a one-way northbound road. Trucks are only permitted to travel on Metcalfe from Isabella to Catherine Street.

NB Elgin Street Truck Detour
Weekend Closure

TRUCK DETOUR

Isabella to Queensway to Main Off-ramp to Nicholas to Slater to Elgin



ELGIN STREET CLOSURE

Summary of Truck Detour Travel Length

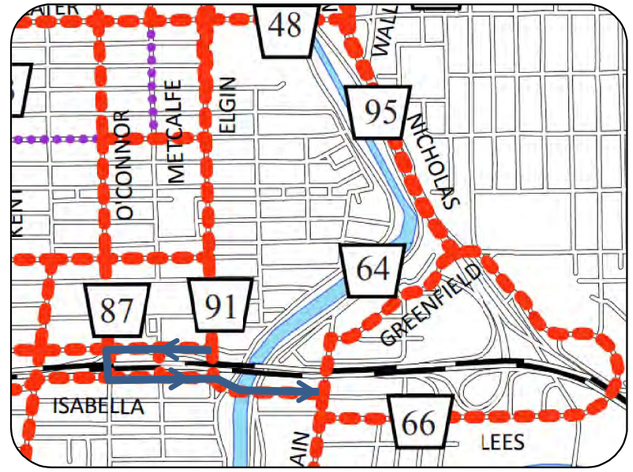
3,600 m

Note:
1. Vehicles cannot turn left from Isabella to NB Elgin.
2. Trucks cannot turn from Greenfield to Nicholas and vice versa.
3. Trucks impacted by Elgin Street closure must be travelling from WB Hawthorne Street to NB Elgin Street or SB Elgin to EB Hawthorne. Trucks must travel along designated truck routes, except for local deliveries and are not permitted on NCC parkways (QED or CBD)
4. Metcalfe is a one-way northbound road. Trucks are only permitted to travel on Metcalfe from Isabella to Catherine Street.

SB Elgin Street Truck Detour
3 Week Advance Closure

TRANSIT DETOUR

Elgin to Catherine to O'Connor to Isabella to Hawthorne



ELGIN STREET CLOSURE

Summary of Truck Detour Travel Length

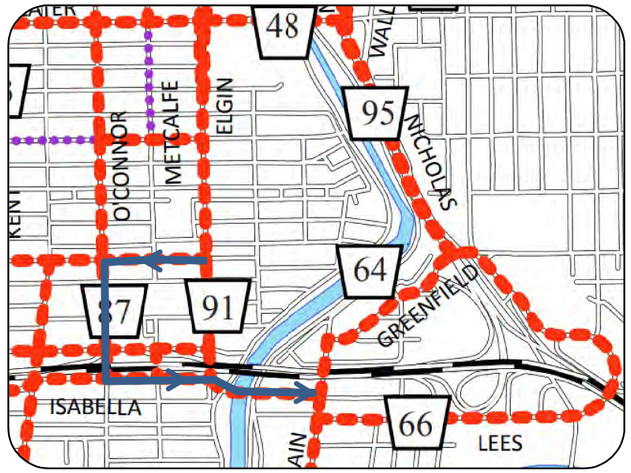
900 m

Note:
1. Vehicles cannot turn left from Isabella to NB Elgin. Trucks impacted by Elgin Street closure must be travelling from WB Hawthorne Street to NB Elgin Street or SB Elgin to EB Hawthorne. Trucks must travel along designated truck routes, except for local deliveries and are not permitted on NCC parkways (QED or CBD)
2. Metcalfe is a one-way northbound road. Trucks are only permitted to travel on Metcalfe from Isabella to Catherine Street.

SB Elgin Street Truck Detour
Weekend Closure

TRANSIT DETOUR

Elgin to Catherine to O'Connor to Isabella to Hawthorne



ELGIN STREET CLOSURE

Summary of Truck Detour Travel Length

900 m

Note:

1. Vehicles cannot turn left from Isabella to NB Elgin. Trucks impacted by Elgin Street closure must be travelling from WB Hawthorne Street to NB Elgin Street or SB Elgin to EB Hawthorne. Trucks must travel along designated truck routes, except for local deliveries and are not permitted on NCC parkways (QED or CBD)
2. Metcalfe is a one-way northbound road. Trucks are only permitted to travel on Metcalfe from Isabella to Catherine Street.

Main Street Detours

Main General Traffic Detour
3 Week Advance Closure

LEGEND

General Traffic: ■ ■ ■ ■ ■

TIME OF DETOUR

Rapid:
3 week closure of Main Street



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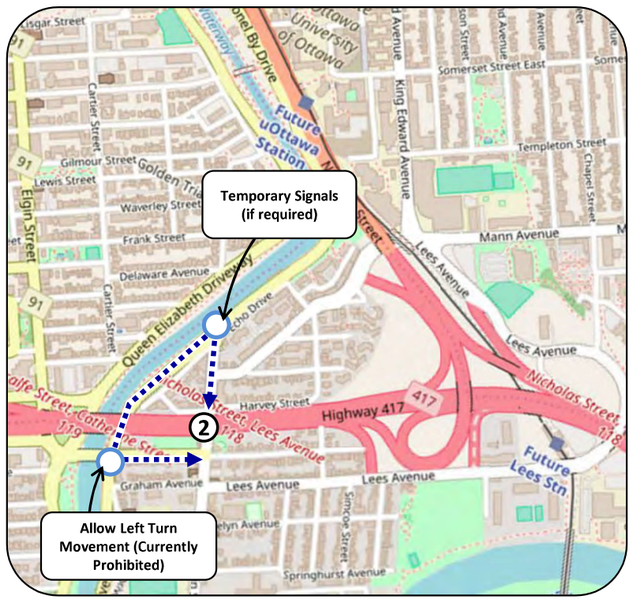

REPLACEMENT

MAIN STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

General Traffic: 800 m

Main General Traffic Detour
Weekend Closure

LEGEND

General Traffic: ■ ■ ■ ■ ■

TIME OF DETOUR

3-day Weekend Closure (Saturday, Sunday and Friday/Monday)



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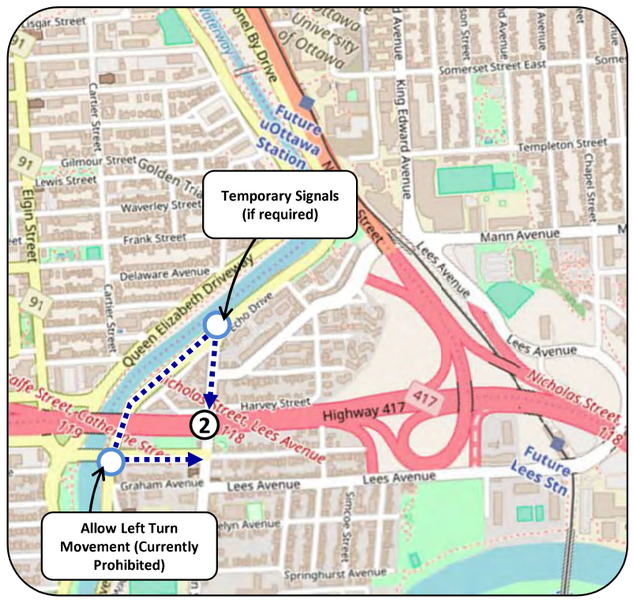

REPLACEMENT

MAIN STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

General Traffic: 800 m

Main Pedestrian and Cyclist Detour
3 Week Advance Closure

LEGEND

Pedestrian Route:

Cyclist Route

TIME OF DETOUR

Rapid:
3 week closure of Main Street

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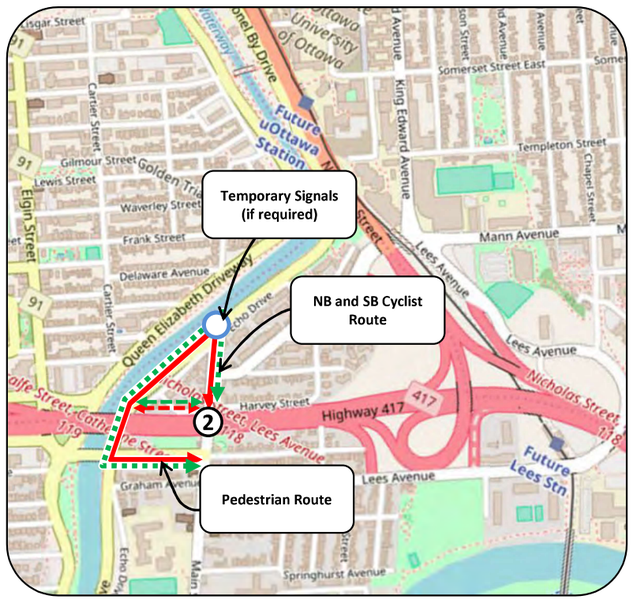

REPLACEMENT

MAIN STREET

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

Pedestrian Route:	800 m
Cyclist Route:	800 m

Main Pedestrian and Cyclist Detour
Weekend Closure

LEGEND

Pedestrian Route:

Cyclist Route

TIME OF DETOUR

3-day Weekend Closure (Saturday, Sunday and Friday/Monday)

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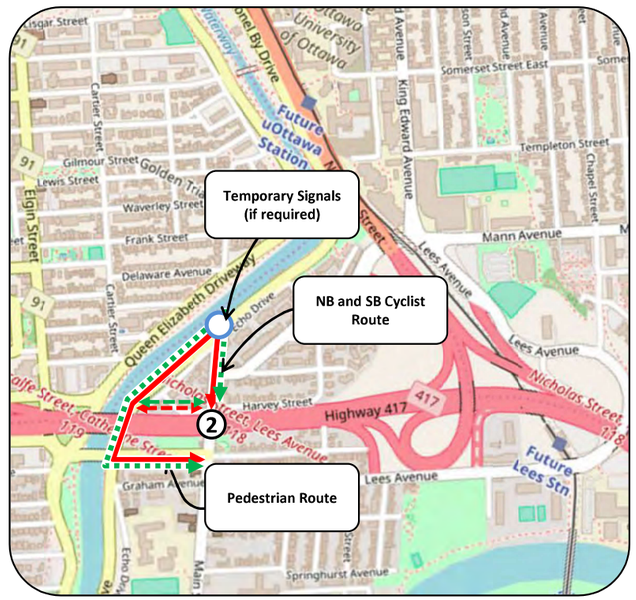


REPLACEMENT

MAIN STREET

(CLOSED AT BRIDGE)

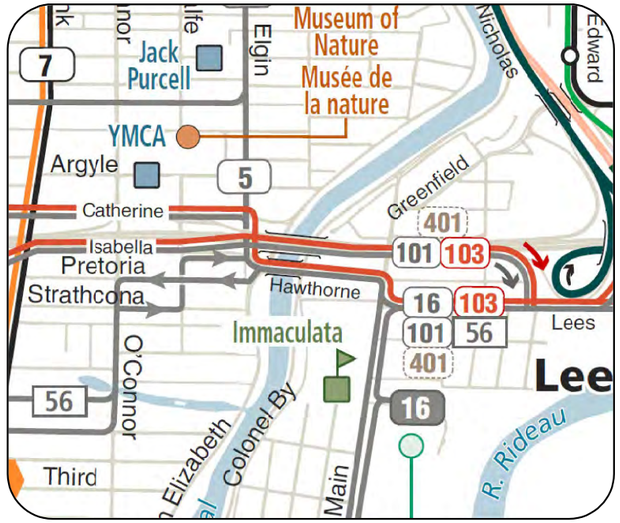
Summary of Detour Travel Lengths

Pedestrian Route:	800 m
Cyclist Route:	800 m

Main Street Transit Detour N/A

TRANSIT DETOUR

N/A



NO TRANSIT DETOUR

MAIN STREET

Summary of Transit Detour Travel Length

0 m

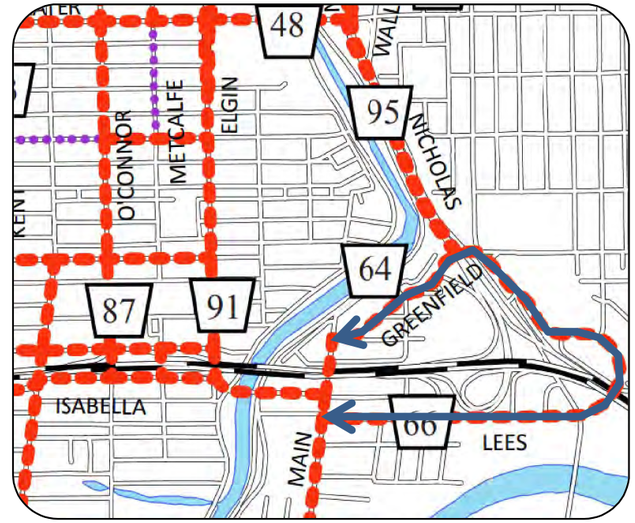
Note:

1. Transit detours are based on existing routes. The detour routes will be reviewed during detail design to determine if transit routes have changed since the EA Study.

Main Street Truck Detour

TRANSIT DETOUR

Main to Lees to Greenfield to Main



MAIN STREET CLOSURE

Summary of Truck Detour Travel Length

2,400 m

Rideau Canal Detours

SB Colonel By and SB Queen Elizabeth General Traffic Detour 90 Week Closure

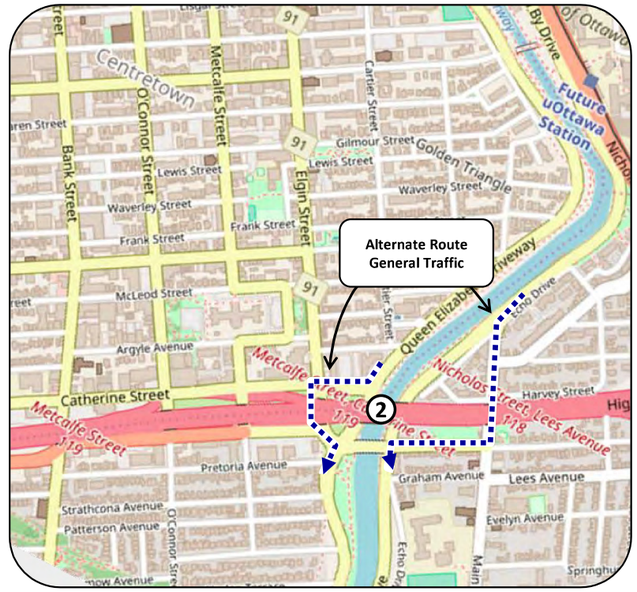
LEGEND

General Traffic:

TIME OF DETOUR

Jack and Slide Two-to-the-North: 90 Weeks





RIDEAU CANAL REPLACEMENT

SB COLONEL BY AND QUEEN ELIZABETH

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

General Traffic (QED): 290 m

General Traffic (CBD): 520 m

Note:

1. Construction Alternative 6 requires shoring at Main Street for the SPMTs to travel over the Main Street bridge. General traffic would not be able to use Main Street as a detour from Colonel By Drive and is therefore rerouted to Lees Avenue.

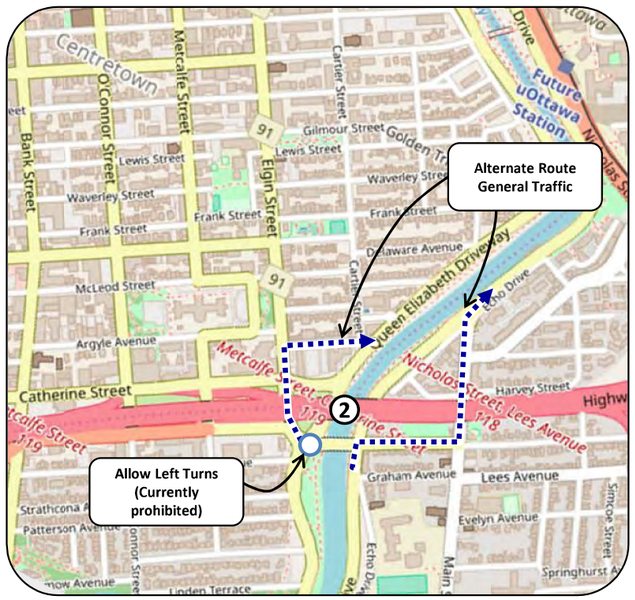
NB Colonel By and NB Queen Elizabeth
General Traffic Detour
90 Week Closure

LEGEND

General Traffic:

TIME OF DETOUR

Jack and Slide Two-to-the-North:
90 Weeks



RIDEAU CANAL REPLACEMENT

NB COLONEL BY AND QUEEN ELIZABETH

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

General Traffic (QED): 480 m

General Traffic (CBD): 520 m

Note:

1. No southbound QED traffic allowed so temporary left turns movement allowance from QED to NB Elgin should be permitted.

Colonel By and Queen Elizabeth
Pedestrian and Cyclist Detour
90 Week Closure

LEGEND

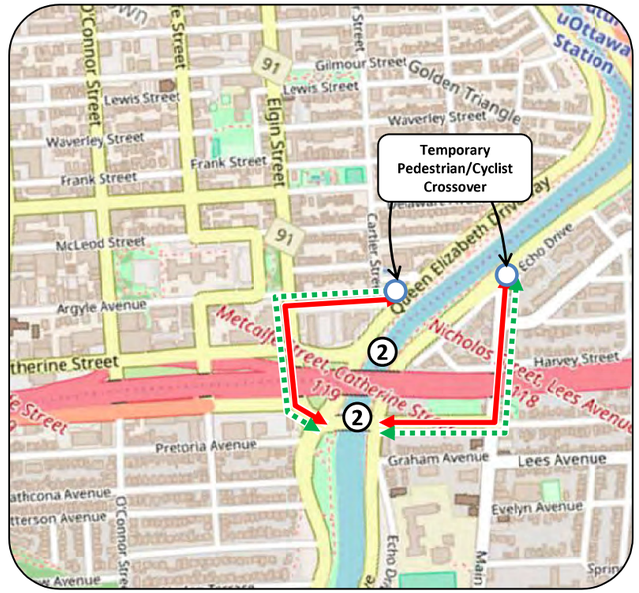
Pedestrian Route:

Cyclist Route:

TIME OF DETOUR

90 weeks





RIDEAU CANAL REPLACEMENT

COLONEL BY AND QUEEN ELIZABETH

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

Pedestrian Route: (QED)	480 m
Cyclist Route: (QED)	480 m
Pedestrian Route: (CBD)	520 m
Cyclist Route: (CBD)	520 m

Colonel By and Queen Elizabeth Pedestrian and Cyclist Detour

Pathway Closure

LEGEND

Pedestrian Route:

Cyclist Route:

TIME OF DETOUR

Intermittent periods throughout 90 week construction period
Relocate Multi-use Path users to sidewalk beside Queen Elizabeth Drive or Colonel By Drive
Closures will be required during pier footing construction and for crane operation to lift beams from Queensway delivery.



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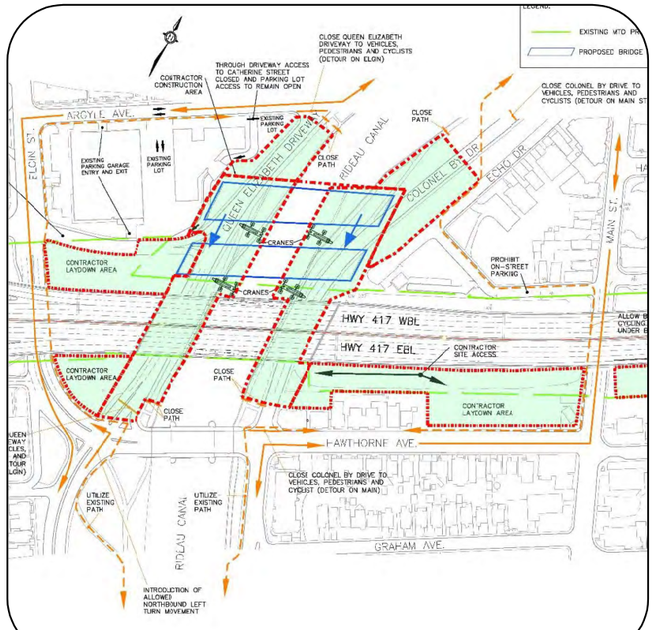

RIDEAU CANAL REPLACEMENT

COLONEL BY AND QUEEN ELIZABETH

(CLOSED AT BRIDGE)

Summary of Detour Travel Lengths

Pedestrian Route: (QED)	480 m
Cyclist Route: (QED)	480 m
Pedestrian Route: (CBD)	520 m
Cyclist Route: (CBD)	520 m

Queensway Detours

Queensway General Traffic Detour

LEGEND

Pedestrian & Bicycle Route: N/A

General Traffic:

TIME OF DETOUR

3-day Weekend Closure (Saturday, Sunday and Friday or Monday) for Rigid Frame Bridges
4-day Weekend Closure for Rideau Canal Bridges



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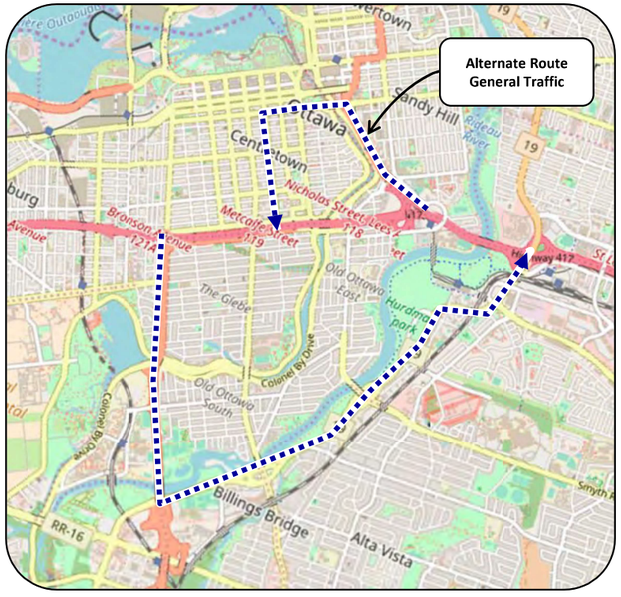


RAPID REPLACEMENT

ALL BRIDGE SITES

QUEENSWAY

(CLOSED)

Summary of Detour Travel Lengths

Pedestrian & Bicycle Route: 0 m

General Traffic: 7,500 m
+ 3,100 m

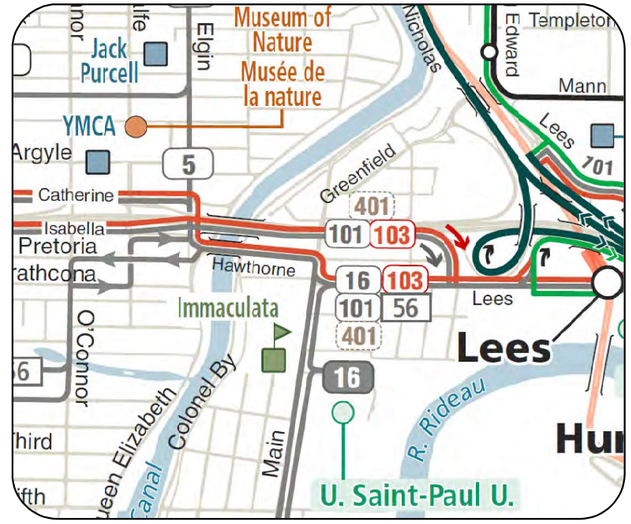
Queensway Transit Detour

TRANSIT DETOUR

Queensway closure occurs during each bridge closure.

See detailed detours for each bridge detour route.

Deadhead buses travelling from St. Laurent westerly will be required to follow the Queensway General Traffic Detour Route.



QUEENSWAY TRANSIT DETOUR

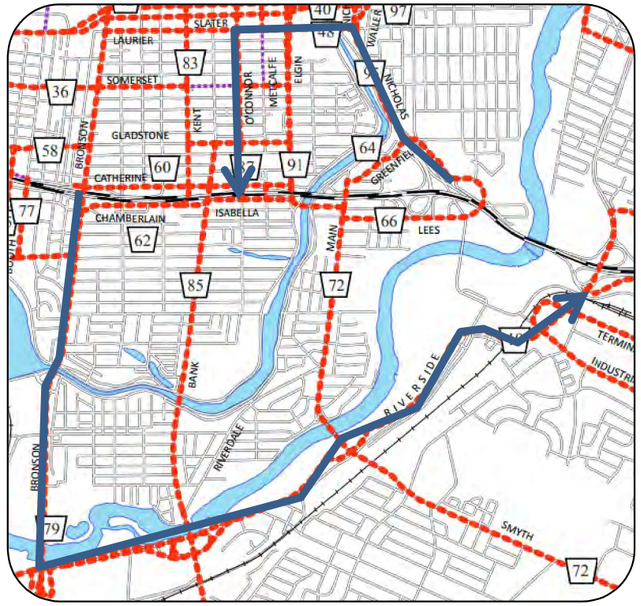
Summary of Transit Detour Travel Length

0 m

Queensway Truck Detour

TRANSIT DETOUR

N/A



QUEENSWAY CLOSURE

Summary of Truck Detour Travel Length

7,500 m
+ 3,100 m