Airport Parkway & Lester Road Widening
Environmental Assessment Study

Environmental Study Report

Prepared for:

110 Laurier Avenue West, Ottawa, Ontario, K1P 1J1, Canada

Prepared by:

PARSONS

100-1223 Michael Street, Ottawa, Ontario, K1J 7T2, Canada

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List of Acronyms

AAQC	Ambient air quality criteria
ACG	Agency consultation group
ANSI	Areas of natural and scientific interest
AADT	Average Annual Daily Traffic
BCG	Business consultation group
BRT	Bus rapid transit
CO	Carbon monoxide
CPAWS	Canadian Parks and Wilderness Society
EA	Environmental Assessment
ESA	Environmental site assessment
ESR	Environmental Study Report
GWE	Gradient Wind Engineering Inc.
HC	Hydrocarbons
HOV	High-Occupancy Vehicle
L_{EQ}	Equivalent sound level
LRT	Light rail transit
LRW	Lester Road Wetland
LoS	Level of Service
MCEA	Municipal Class Environmental Assessment
MNRF	Ministry of Natural Resources and Forestry
MOE	Ministry of Environment
NCC	National Capital Commission
NCR	National Capital Region
NO_x	Oxides of Nitrogen
OAVDZ	Ottawa Airport Vicinity Development Zone
OD	Origin-Destination
OMCIA(A)	Ottawa Macdonald-Cartier International Airport (Authority)
OP	Official Plan
PCA	Potentially contaminating activity
PCG	Public consultation group
PDU	Peak Directional Unit
PHF	Peak Hour Factor
PM	Particulate matter
POH	Public Open House
PSW	Provincially significant wetland
ROW	Right of Way
RTTP	Rapid Transit and Transit Priority (Network)
RVCA	Rideau Valley Conservation Authority
SAR	Species at risk
SL	Screenline
SNCA	South Nation Conservation Authority
SWH	Significant wildlife habitat
TMP	Transportation Master Plan
v/c	Volume to Capacity

Executive Summary

Overview

The Airport Parkway is a major north-south arterial road in the City of Ottawa (Figure Ex-1). Along the corridor, the roadway traverses and connects the neighbourhoods of Confederation Heights, Riverside Park, Ellwood, South Keys, Hunt Club, Gloucester, Uplands and Blossom Park at the Brookfield, Walkley, Hunt Club and Lester interchanges. Lester Road is an east-west Arterial Road that joins to the Airport Parkway. This road also is an important commuter route joining communities lying south of the airport to the central part of the City and downtown. Rapid growth in the communities south of Hunt Club Road, including Leitrim, Riverside South, and Greely have increased traffic volumes on the Parkway, leading to congestion during the peak commuting periods. Future development of the Airport lands, with a planned Airport expansion as well as commercial development will also put increased pressure on these two corridors. This Environmental Assessment (EA) recommends the widening of both facilities and various associated corridor modifications.

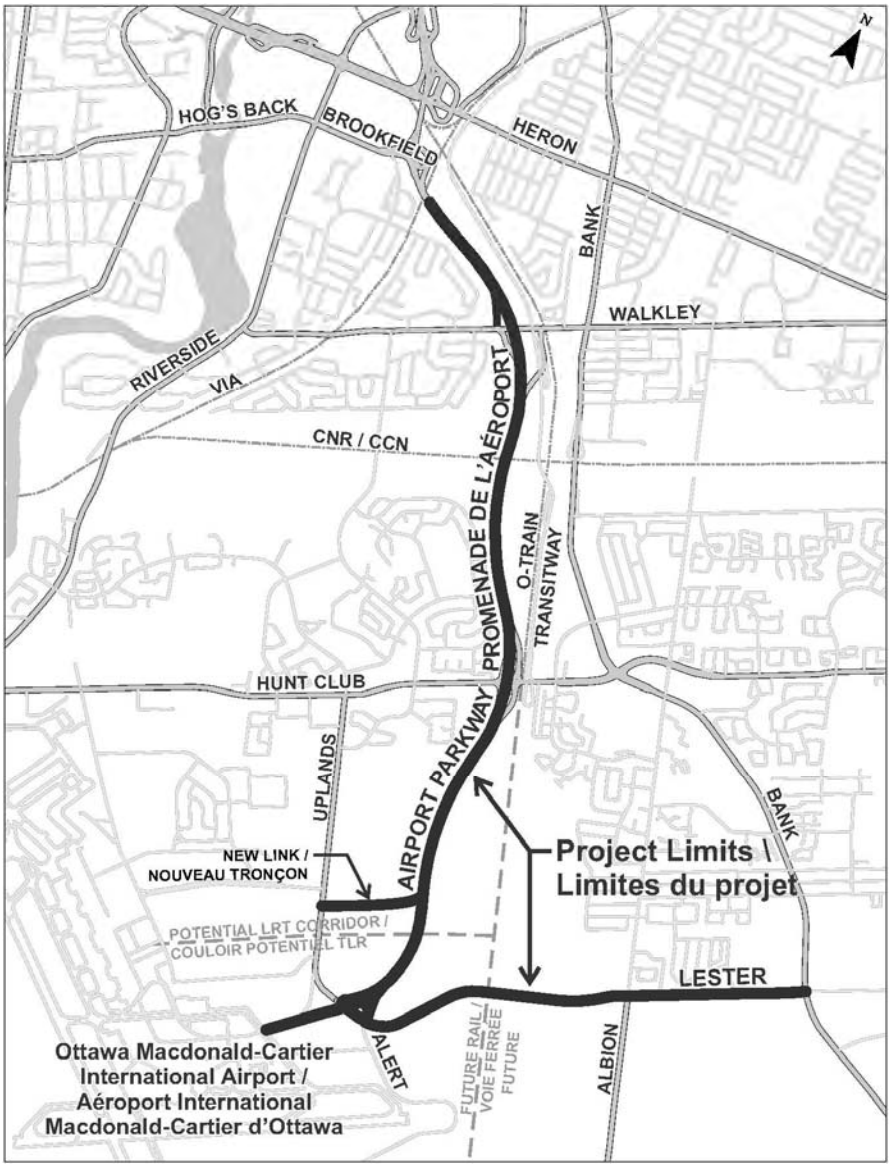


Figure Ex-1: Airport Parkway and Lester Road Project Limits

This EA study was carried out in accordance with the Municipal Class EA Process as a Schedule C project. The study findings and recommendations are the subject of this report.

Project Need and Opportunities

Rapid growth in the communities south of Hunt Club Road (including Leitrim, Riverside South, Findlay Creek and Greely) has increased traffic volumes on the Airport Parkway, leading to congestion during the peak commuting periods. Future development of the airport lands combined with a planned airport expansion will rely on increased capacity of the Airport Parkway. The Lester Road connection to the east will be an integral part of the same north-south roadway network connectivity as the Airport Parkway. Even with planned investments in rapid transit, the need for the widenings has been confirmed.

Transportation improvements in this corridor are needed because:

- The facilities are currently experiencing congestion particularly the portion of the Airport Parkway north of Hunt Club Road;
- As a two lane roadway, the Airport Parkway has little resiliency to accommodate accidents or roadside stoppages;
- Collision data reveals a high number of collisions related to U-turns along the Airport Parkway; and
- The 2031 peak directional projected traffic volumes travelling along the Airport Parkway and Lester Road will exceed available capacity during both the am and pm peak hours.

The road widening study also presents an opportunity to improve or enhance other transportation and environmental aspects such as:

- The cycling and pedestrian network;
- Transit service on the Airport Parkway south of Hunt Club to the Airport;
- Community connectivity (Walkley Road off-ramp and the Uplands off-ramp);
- Scenic entry route function to/from the City;
- Natural heritage features and function;
- Support of future development; and
- Coordination with the planning and design of other infrastructure including the Trillium Line Extension project.

Existing Conditions

Within the study area, the Airport Parkway is a two lane rural arterial road without sidewalks. Existing cycling facilities include paved shoulders, a multi-use pathway system along the east side of the Airport Parkway between Walkley Road and Hunt Club Road, and on-road bike lanes, east of the Airport Parkway. The Airport Parkway is designated as a Scenic Entry Route within the OP. Multi-use pathways are provided as part of the green space network on the east side of the parkway from Brookfield to Hunt Club Road. Within the study area, Lester Road is a two lane rural arterial road without sidewalks or cycling facilities.

The Airport Parkway is located within or adjacent to Major Open Space and Urban Natural Area designations of the Official Plan associated with the Sawmill Creek valleylands and tributaries. The Airport Parkway is also partially located with the National Capital Greenbelt south of Hunt Club Road. Some lands adjacent to the Airport Parkway and Lester Road, south of Hunt Club Road, are located with the Lester Road Provincially Significant Wetland Complex and home to numerous species of plants and animals as well as containing potential habitats for some species at Risk. Sawmill Creek, Alexander Drain and the Cahill Drain are also included within the study area and with portions of Sawmill Creek and the Alexander Drain currently serving as roadside drainage.

The OP identifies a right-of-way (ROW) protection policy width for the Airport Parkway as “ECP” (Existing Corridor Protection). Therefore, any adjacent lands necessary for road widenings to accommodate additional travel lanes (e.g. vehicle, bus, bike, etc.), medians and/or sidewalks will have to be acquired in

consultation with the NCC. With regard to Lester Road, the OP identifies a ROW protection policy width of 37.5 m (between Albion Road and Bank Street) and “G” (between Uplands Drive and Albion Road). A “G” ROW width to be protected is similar to the previously mentioned “ECP” protection policy, in that the ROW width to be protected is determined by the acquisition of adjacent lands necessary to accommodate roadway/infrastructure requirements in consultation with the NCC. As noted in the OP, in areas where the Greenbelt is only on one side (ie. between Albion and Bank), a 5.0m widening should be requested along the Greenbelt side to accommodate a rural cross-section.

Alternative Solutions

The extensive list of alternative solutions that were reviewed and assessed is as follows:

- Do nothing;
- Expand pedestrian and cycling infrastructure;
- Expand pedestrian, cycling and transit priority (bus-only lanes) in the corridors;
- Enact enhanced transportation demand management strategies;
- Provide additional Park and Ride capacity;
- Only widen Airport Parkway;
- Only widen Lester Road;
- Widen other arterials;
- Construct a new north south arterial road;
- Construct a reversible lane in the Airport Parkway Corridor; and
- Widen and connect both Airport Parkway and Lester Road.

Of the alternative solutions reviewed, the widening of the Airport Parkway and Lester Road and a new road connection between the Airport Parkway and Uplands Drive was selected as the preferred solution as it affords the best network connectivity, best meets the transportation needs/opportunities required in these corridors within the timing horizon and provides the greatest long term flexibility. It also supports development of Riverside South, the airport, the Leitrim community and Greely to the south. It improves access to the land uses (residential, businesses, institutions, industrial) and provides an opportunity to improve pedestrian and cycling infrastructure as well as enhance the Scenic Entry function of the Parkway.

Alternative Designs

A number of road widening designs were developed to implement the preferred solution. The alternative designs addressed various roadway elements such as:

- alignment alternatives (widen to the east, to the west or from centerline);
- cross-section alternatives (urban, rural, combination, compactness);
- intersection alternatives (roundabout, signalized);
- median treatments (divided versus undivided);
- pedestrian and cycling facilities;
- noise attenuation options (earth berm or noise wall, locate at source or at receiver);
- manage drainage;
- wildlife movement;
- net environmental gain; and
- efficiency and cost effectiveness.

The resulting Recommended Plan for the roadway widenings is based on an evaluation and assessment of these designs with input from stakeholders.

Summary of Study Recommendations

The Recommended Plan includes the widening of the Airport Parkway and Lester Road from two to four lanes, an off-ramp at Walkley Road connecting to a roundabout, an off-ramp and connecting road link to Uplands Drive. The design incorporates protection for future access roads to accommodate the continued development of the airport lands. Other design elements include modifications to Walkley Road from the Parkway to McCarthy Road, which highlights lane reductions, cycle lanes, and preventative cut-through traffic measures. Active transportation is enhanced with the inclusion of a new multi-use pathway along the west side of the parkway and along the north side of Lester Road.

Noise Management

The predicted change in noise levels is considered insignificant. However, the recommended noise barrier solution, complete with vegetation, would be set back from the MUP to leave sufficient space for seeding and planting which would provide a green visual buffer between the wall and the pathway, in keeping with the Scenic Route designation that applies to the Airport Parkway corridor. Noise barriers will vary in height between 2.2 metres and 2.8 metres depending on the topography. They will be located in the vicinity of Flannery Drive/Ramsgate Private (320 metres length), Cromwell Drive (530 metres), Plante Drive (895 metres), Albion Road (70 metres), and Aladdin Lane (115 metres).

Managing Impacts on Greenbelt and Natural Heritage Features

Portions of the Airport Parkway and Lester Road are within the Lester Road Provincially Significant Wetland Complex. The corridors are also crossed by a number of watercourses including Sawmill Creek and its tributaries, Cahill Drain, and the Alexander drain. The Wetland Complex itself provides potential habitat for Species at Risk and other species. Furthermore, Sawmill Creek has associated sensitive valley lands. Built into the Recommended Plan are measures to minimize the environmental impacts on these sensitive natural heritage features including:

- Minimizing the footprint of the widened facilities;
- Avoiding the displacement of Sawmill Creek and the Alexander Drain;
- Rehabilitation/naturalization of adjacent lands/features, and
- Incorporating recommendations for wildlife crossings including exclusionary fencing.

Downstream Effects

Downstream traffic effects on Bronson Avenue and on Albion Road as a result of the roadway widenings are forecasted to be minimal. At the north end, some of the northbound traffic will be destined to area employment/institutional nodes such as Carleton University or Confederation Heights, and some will access intersecting Arterial, Collector and Driveway roads including Riverside Drive, Heron Road, Sunnyside Avenue, Colonel By Drive, or Queen Elizabeth Drive. According to the findings of the TRANS Regional Model, the forecasted additional downstream demand crossing the Rideau Canal is approximately 30 veh/hr on Bronson Avenue during the critical morning peak hour. At the south end, it is forecasted that during the peak hour, approximately an additional 125 veh/hr two-way will be on Albion Road and an additional 325 veh/hr two-way on Bank Street. Both roads have capacity to absorb this demand.

Property Requirements

A total of 4.84 hectares of Transport Canada lands and 1.27 hectares of National Capital Commission (NCC) lands are required. No privately-owned land is needed.

Project Staging

The widening of Airport Parkway from two to four lanes between Brookfield Road and Hunt Club Road is identified in the TMP as a Phase 1 project (2020– 2025). The widening of Airport Parkway from two to four lanes between Hunt Club Road and the Ottawa Macdonald-Cartier International Airport which includes provision for peak period bus lanes and a possible northern realignment to the airport as a Phase 3 project (beyond 2031). The widening of Lester Road from two to four lanes between Airport Parkway and Bank Street is a Phase 2 project (2026 - 2031). The actual timing of implementation will be dependent on municipal infrastructure funding priorities.

Public Consultation/Input

The comprehensive consultation plan included three rounds of public consultations and numerous additional meetings with stakeholders. Each round consisted of meetings with the Agency Consultation Group, Business Consultation Group, and Public Consultation Group (which included representatives of the Accessibility Advisory Committee and the Environmental Stewardship Advisory Committee) prior to each Open House. In addition, meetings were held with the NCC and the Airport Authority, other federal and provincial agencies, community associations, stakeholders groups, as well as a meeting with residents on site. First Nations were also consulted at the onset of the study and they requested to be kept informed of the project, although no outstanding concerns were noted. A summary of consultation methods and meetings are listed in table below.

Agency/Group	Format	Date
Project Website	City of Ottawa Project Page	Throughout Project
Aboriginal Consultation	Email and Mail Correspondence	Key Stages
Minister Responsible for the NCC	Email and Mail Correspondence	Key Stages
Minister of Canadian Heritage	Email and Mail Correspondence	Key Stages
Minister of PWGSC	Email and Mail Correspondence	Key Stages
Meeting with the National Capital Commission and OMCIAA	Presentation and Round Table Discussion	October 29, 14
Rideau Valley Conservation Authority and OMCIAA	Round Table Discussion	November 3rd, 14
Study Consultation Group Meetings #1 ACG, BCG, PCG	Presentation and Round Table Discussion	December 3rd, 4th, 14
Meeting with central area community associations (Glebe Community Association, Old Ottawa East Community Association, Sandy Hill Community Association Representatives)	Presentation and Round Table Discussions	December 15th, 14
Working Meeting with National Capital Commission and OMCIAA	Round Table Discussion	January 6th, 15
Public Open House #1	Exhibit Boards, Presentation, Question and Answer Period, Comment Sheets Open Discussions with Team Members	January 27th, 15
Downstream Impacts Stakeholder Meeting	Presentation and Group Discussion	April 30th, 15
Community Meeting with Residents along Lester Road (hosted by Councillor Deans office)	Presentation and Round Table Discussion	May 12th, 15
Update Meeting with the National Capital Commission and OMCIAA	Presentation and Round Table Discussion	May 13th, 15

Agency/Group	Format	Date
Study Consultation Group Meetings #2 ACG, BCG, PCG	Presentation and Round Table Discussion	June 2nd & 5th, 15
Public Open House #2	Exhibit Boards, Presentation, Question and Answer Period, Comment Sheets Open Discussions with Team Members	June 17th, 15
Stakeholder Meeting with Ottawa Greenspace Alliance and CPAWS	Round Table Discussion	June 25th, 15
Noise Mitigation – Airport Parkway	Presentation, Question and Answer Period, Comment Sheets	September 15th, 15
Noise Mitigation – Lester Road	Presentation, Question and Answer Period, Comment Sheets	September 17th, 15
Riverside Park Community and Recreation Association Annual General Meeting	Presentation and Question and Answer Period	October 7th, 15
Study Consultation Group Meetings #1 ACG, BCG, PCG	Presentation and Round Table Discussion	March 1st, 16
Open House #3	Exhibit Boards, Presentation, Question and Answer Period, Comment Sheets Open Discussions with Team Members	March 10th, 16
Update Meeting with NCC	Presentation and Round Table	March 30th, 16
City of Ottawa Transportation Committee	Public Meeting	June 1st, 16
Council Meeting	Meeting of the whole	June 8th, 16

A project webpage was set up at the commencement of the study (http://ottawa.ca/en/airportparkway) and was updated to reflect the Open House information. Notices for each Open House were advertised in local newspapers, on the project website, and through the study's stakeholder mailing list.

The major issues raised during consultation were: project need and timing, downstream traffic effects, need for Walkley off-ramp, and environmental considerations.

Résumé

Aperçu

La promenade de l'Aéroport est une grande artère nord-sud d'Ottawa (Figure Ex-1). Tout au long de son corridor, elle traverse et relie les quartiers de Confederation Heights, Riverside Park, Ellwood, South Keys, Hunt Club, Gloucester, Uplands et Blossom Park via les échangeurs Brookfield, Walkley, Hunt Club et Lester. Le chemin Lester est une artère est-ouest qui se joint à la promenade de l'Aéroport. Cette route est aussi une importante voie de navettage qui relie les collectivités situées au sud de l'aéroport à l'aire centrale de la ville et au centre-ville. La croissance rapide des collectivités au sud du chemin Hunt Club, notamment celles de Leitrim, de Riverside-Sud et de Greely, a entraîné une augmentation du volume de circulation sur la promenade de l'Aéroport qui provoque de la congestion aux heures de pointe. D'autres projets d'aménagement sur les terrains de l'aéroport, le projet d'agrandissement de l'aéroport ainsi que les projets d'aménagements commerciaux ne peuvent qu'ajouter de la pression sur ces deux couloirs. La présente évaluation environnementale recommande l'élargissement des deux couloirs et diverses modifications connexes.

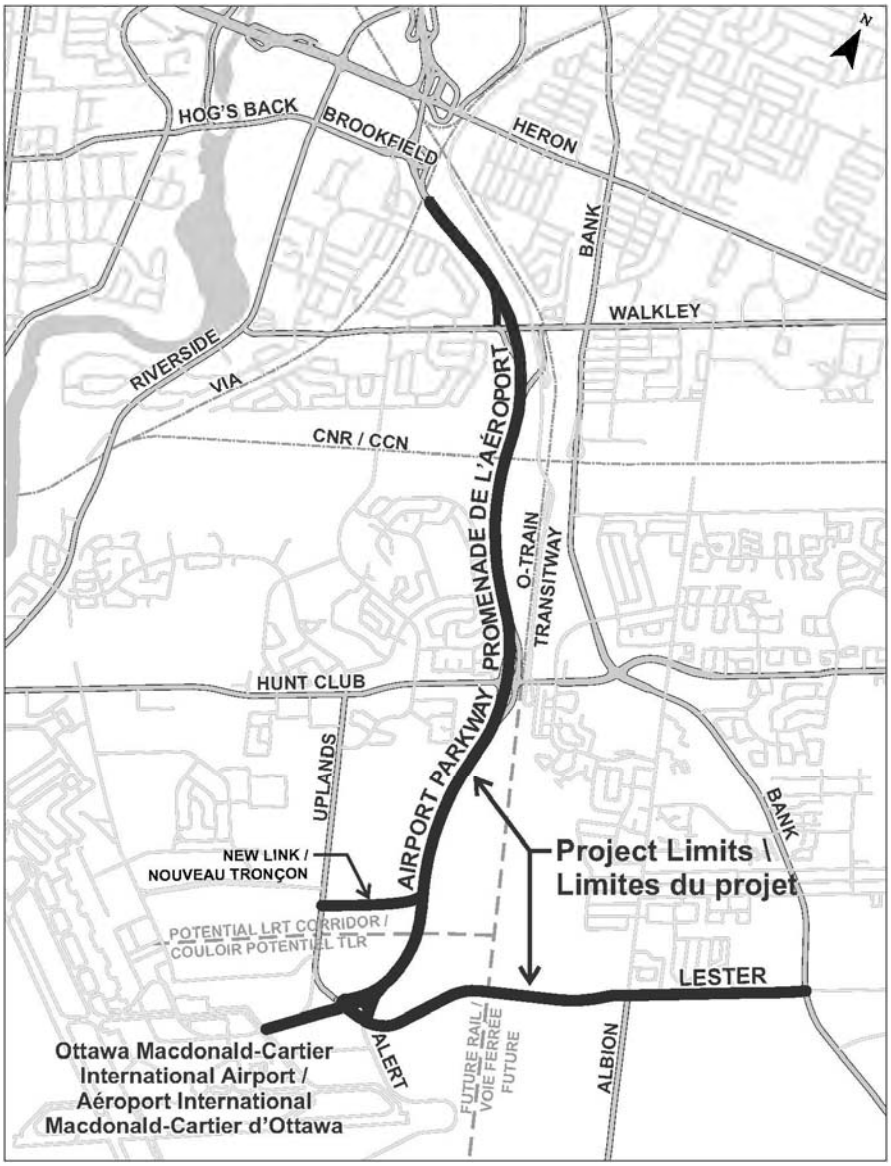


Figure Ex-1 : Limites du projet d'élargissement de la promenade de l'Aéroport et du chemin Lester

L'étude d'évaluation environnementale (EE) a été menée conformément au processus d'EE municipale de portée générale (projet visé à l'annexe C). Le présent rapport expose les conclusions et les recommandations de l'étude.

Nécessité du projet et possibilités

La croissance rapide des collectivités au sud du chemin Hunt Club (dont celles de Leitrim, de Riverside-Sud, de Findlay Creek et de Greely) entraîne une augmentation du volume de circulation sur la promenade de l'Aéroport qui provoque de la congestion aux heures de pointe. D'autres projets d'aménagement sur les terrains de l'aéroport, qui s'ajouteront à un projet d'agrandissement de l'aéroport, exigeront un accroissement de la capacité de la promenade de l'Aéroport. Le raccordement au chemin Lester vers l'est fera partie intégrante du réseau routier nord-sud auquel appartient la promenade de l'Aéroport. Même si des investissements ont été prévus dans le transport en commun rapide, la nécessité de ces élargissements a été confirmée.

Ce couloir doit être amélioré pour les raisons suivantes :

- les routes sont actuellement congestionnées, en particulier sur la portion de la promenade de l'Aéroport située au nord du chemin Hunt Club;
- en tant que route à deux voies, la promenade de l'Aéroport est mal adaptée en cas d'accident ou d'arrêt sur l'accotement;
- les données sur les collisions révèlent un nombre élevé de collisions liées à des demi-tours effectués sur la promenade de l'Aéroport;
- les volumes maximaux projetés de circulation dans chaque direction en 2031 pour la promenade de l'Aéroport et le chemin Lester excéderont la capacité disponible pendant les heures de pointe du matin et de l'après-midi.

L'étude du projet d'élargissement sera également l'occasion d'améliorer ou de bonifier les autres modes de transport et des aspects environnementaux tels que :

- le réseau cyclable et piétonnier;
- le service de transport en commun sur la promenade de l'Aéroport, au sud du chemin Hunt Club, en direction de l'aéroport;
- la connectivité communautaire (bretelles vers le chemin Walkley et Uplands);
- la fonction de route panoramique en provenance et à destination de la ville;
- les caractéristiques et la fonction du patrimoine naturel;
- le soutien à des projets d'aménagement futurs;
- la coordination avec la planification et la conception d'autres infrastructures, y compris le projet de prolongement de la Ligne Trillium.

Conditions actuelles

Dans la zone d'étude, la promenade de l'Aéroport est une artère rurale à deux voies dépourvue de trottoirs. Les aménagements cyclables déjà en place incluent des accotements asphaltés, un réseau de sentiers polyvalents du côté est de la promenade de l'Aéroport, entre les chemins Walkley et Hunt Club, ainsi que des bandes cyclables sur la chaussée, à l'est de la promenade de l'Aéroport. Cette promenade est désignée comme route d'accès panoramique dans le Plan officiel. Des sentiers polyvalents font partie du réseau d'espaces verts situé à l'est de la promenade, de Brookfield au chemin Hunt Club. Dans la zone d'étude, le chemin Lester est une artère rurale à deux voies dépourvue de trottoirs ou d'aménagements cyclables.
La promenade de l'Aéroport est située à l'intérieur ou à proximité de zones désignées en tant qu'espaces verts d'importance ou d'espaces naturels urbains dans le Plan officiel, associées à la vallée du ruisseau Sawmill et à ses tributaires. La promenade de l'Aéroport est également située en partie dans la Ceinture de

verdure de la capitale nationale, au sud du chemin Hunt Club. Certains terrains adjacents à la promenade de l'Aéroport et au chemin Lester, au sud du chemin Hunt Club, se trouvent dans le complexe de terres humides d'importance provinciale du chemin Lester et abritent de nombreuses espèces végétales et animales ainsi que des habitats que peuvent utiliser certaines espèces en péril. Le ruisseau Sawmill, le drain Alexander et le drain Cahill sont également inclus dans la zone d'étude, et certaines parties du ruisseau Sawmill et du drain Alexander servent actuellement au drainage de la route.

Pour la promenade de l'Aéroport, le Plan officiel prévoit une largeur de l'emprise à protéger, désignée par le sigle « CEM » (Couloir existant maintenu). En conséquence, tout terrain adjacent requis pour l'élargissement de la route et la construction de voies de circulation supplémentaires (pour les véhicules, les autobus, les vélos, etc.), de terre-pleins ou de trottoirs devra être acquis en collaboration avec la Commission de la capitale nationale (CCN). En ce qui concerne le chemin Lester, le Plan officiel indique une largeur d'emprise à protéger de 37,5 m entre le chemin Albion et la rue Bank et « C » (ceinture de verdure) entre la promenade Uplands et le chemin Albion. La largeur d'emprise à protéger « C » est semblable à la largeur mentionnée dans la politique de protection du « CEM » mentionnée précédemment du fait que cette largeur est déterminée par l'acquisition de terrains adjacents nécessaires pour répondre aux exigences relatives à la construction de la chaussée et de l'infrastructure, en collaboration avec la CCN. Comme il est mentionné dans le Plan officiel, dans les zones où la Ceinture de verdure est située d'un seul côté (p. ex. entre Albion et Bank), un élargissement de 5,0 m doit être demandé du côté de la Ceinture de verdure pour accueillir une route ayant une coupe transversale rurale.

Solutions de rechange

Voici la liste complète des solutions de rechange qui ont été examinées et évaluées :

- ne rien faire;
- prolonger l'infrastructure cycliste et piétonne;
- accorder plus de priorité aux piétons, aux cyclistes et aux usagers du transport en commun (voies réservées aux autobus) dans les couloirs;
- mettre en œuvre des stratégies améliorées de gestion de la demande en transport;
- augmenter la capacité des parcs-o-bus;
- n'élargir que la promenade de l'Aéroport;
- n'élargir que le chemin Lester;
- élargir d'autres artères;
- construire une nouvelle artère nord-sud;
- construire une voie à sens réversible dans le couloir de la promenade de l'Aéroport;
- élargir et relier la promenade de l'Aéroport et le chemin Lester.

Parmi les solutions examinées, l'élargissement de la promenade de l'Aéroport et du chemin Lester et l'ajout d'un raccordement entre la promenade de l'Aéroport et la promenade Uplands ont été choisis comme solution privilégiée, car elle offre la meilleure connectivité au réseau, répond le mieux aux besoins en matière de transports et aux exigences formulées à l'égard de ces couloirs à l'intérieur de la période envisagée et fournit la plus grande souplesse à long terme. Cette solution appuie également le projet d'aménagement de Riverside-Sud, de l'aéroport et des collectivités de Leitrim et de Greely, au sud. Elle améliore l'accès aux terrains utilisés à des fins résidentielles, commerciales, institutionnelles et industrielles, offre la possibilité d'améliorer l'infrastructure piétonnière et cycliste et bonifie la fonction de route d'accès panoramique de la promenade.

Autres concepts

Un certain nombre de concepts d'élargissement de la route ont été élaborés pour la mise en œuvre de la solution privilégiée. Ces autres concepts concernent divers éléments de la chaussée, tels que les suivants :

- tracé (élargissement du côté est, du côté ouest ou à partir de l'axe central de la chaussée);
- coupes transversales (urbaine, rurale, combinaison, compacité);
- intersections (carrefour giratoire, carrefour à feux);
- terre-plein (chaussée séparée ou non par un terre-plein central);
- aménagements piétonniers et cyclistes;
- options relatives à l'atténuation du bruit (levée de terre ou écran antibruit à la source ou au lieu récepteur);
- gestion du drainage;
- déplacement de la faune;
- gain environnemental net;
- efficacité et rentabilité.

Le plan recommandé pour l'élargissement de la chaussée repose sur une évaluation de ces concepts et des commentaires des intervenants.

Résumé des recommandations de l'étude

Le plan recommandé comprend l'élargissement de la promenade de l'Aéroport et du chemin Lester de deux à quatre voies ainsi que la construction d'une bretelle à la hauteur du chemin Walkley menant à un carrefour giratoire, d'une bretelle et d'un lien routier avec la promenade Uplands. Le concept prévoit l'aménagement de voies d'accès futures afin de desservir les terrains aéroportuaires qui seront aménagés. Parmi les autres éléments de conception, mentionnons l'apport de modifications au chemin Walkley, entre la promenade et le chemin McCarthy, notamment des réductions de la largeur des voies, l'aménagement de pistes cyclables et la prise de mesures pour empêcher la circulation de transit. Le transport actif est soutenu par l'inclusion d'un nouveau sentier polyvalent du côté ouest de la promenade et du côté nord du chemin Lester.

Lutte contre le bruit

Le changement prévu quant aux niveaux de bruit est considéré comme négligeable. Toutefois, les écrans antibruits recommandés et l'aménagement de végétaux les accompagnant seraient en retrait du sentier polyvalent afin de laisser un espace suffisant pour l'ensemencement et la plantation des végétaux devant servir de zone tampon visuelle verte entre l'écran et le sentier, conformément aux exigences relatives à la désignation de route panoramique qui s'applique au couloir de la promenade de l'Aéroport. La hauteur des écrans antibruits peut varier de 2,2 à 2,8 m, selon la topographie. De tels écrans seront érigés dans les environs de la promenade Flannery/du privé Ramsgate (320 mètres de longueur), de la promenade Cromwell (530 mètres), de la promenade Plante (895 mètres), du chemin Albion (70 mètres) et de la ruelle Aladdin (115 mètres).

Gestion des répercussions sur la Ceinture de verdure et le patrimoine naturel

Des parties de la promenade de l'Aéroport et du chemin Lester se trouvent dans le complexe de terres humides d'importance provinciale du chemin Lester. Les couloirs sont également traversés par un certain nombre de cours d'eau, y compris le ruisseau Sawmill et ses tributaires, le drain Cahill et le drain Alexander. Le complexe de terres humides lui-même peut servir d'habitat à des espèces en péril et à d'autres espèces. En outre, la vallée du ruisseau Sawmill présente des zones sensibles. Le plan recommandé contient des mesures pour limiter les répercussions environnementales sur ces composants sensibles du patrimoine naturel, y compris :

- limiter l'empreinte des installations élargies;
- éviter de déplacer le ruisseau Sawmill et le drain Alexander;

- restaurer/naturaliser les terres/caractéristiques adjacentes;
- intégrer les recommandations concernant la présence d'animaux sauvages, y compris les clôtures d'exclusion.

Effets en aval

Les effets de la circulation en aval sur l'avenue Bronson et sur le chemin Albion découlant de l'élargissement de la chaussée devraient être minimes. À l'extrémité nord, une partie du volume de circulation allant vers le nord se dirigera vers les centres d'emploi/institutionnels du secteur, comme l'Université Carleton ou le quartier Confederation Heights, et une autre partie empruntera les artères, les collecteurs et les routes transversales, y compris la promenade Riverside, le chemin Heron, l'avenue Sunnyside, la promenade Colonel-By ou la promenade Reine-Élizabeth. Selon les conclusions du modèle régional TRANS, le volume de circulation supplémentaire prévu en aval traversant le canal Rideau est d'environ 30 véh./h sur l'avenue Bronson pendant l'heure de pointe critique du matin. À l'extrémité sud, on prévoit que, pendant l'heure de pointe, la circulation dans les deux sens sera d'environ 125 véh./h supplémentaires sur le chemin Albion et de 325 véh./h sur la rue Bank. Ces deux routes ont la capacité d'absorber cette demande.

Exigences foncières

En tout, 3 hectares de terrains appartenant à Transports Canada et 1,22 hectare à la Commission de la capitale nationale (CCN) sont requis. Aucun terrain privé ne sera utilisé.

Échelonnement du projet

Le PGT désigne l'élargissement de la promenade de l'Aéroport de deux à quatre voies entre le chemin Brookfield et le chemin Hunt Club comme un projet de la Phase 1 (2020-2025). L'élargissement de la promenade de l'Aéroport de deux à quatre voies entre le chemin Hunt Club et l'aéroport International Macdonald-Cartier d'Ottawa prévoit des voies d'autobus réservées en période de pointe et un éventuel nouveau tracé vers le nord, jusqu'à l'aéroport, en tant que projet de la Phase 3 (au-delà de 2031). L'élargissement du chemin Lester de deux à quatre voies entre la promenade de l'Aéroport et la rue Bank est un projet de la Phase 2 (2026-2031). La date réelle de mise en œuvre sera établie en fonction des priorités de financement des infrastructures municipales.

Consultation publique/commentaires

Le plan de consultation exhaustive comprenait trois séries de consultations publiques et de nombreuses autres réunions avec les intervenants. Chaque série de consultations comprenait des réunions avec le groupe de consultation des organismes, le groupe de consultation des entreprises et le groupe de consultation du public (avec représentation du Comité consultatif sur l'accessibilité et du Comité consultatif sur la gérance environnementale) avant chaque réunion portes ouvertes. En outre, des réunions avec la CCN et l'Administration de l'aéroport, d'autres organismes fédéraux et provinciaux, des associations communautaires et des groupes d'intervenants ainsi qu'une réunion avec les résidents du secteur ont eu lieu. Les Premières Nations ont également été consultées dès le début de l'étude et ont demandé à être tenues au courant du projet, même si aucune préoccupation n'a été soulevée. Le tableau suivant résume les modes de consultation et les réunions.

Organisme/Groupe	Formule	Date
Site Web du projet	Page du projet, Ville d'Ottawa	Tout au long du projet
Consultation des Premières Nations	Correspondance (courriels et courrier)	Phases clés
Ministre responsable de la CCN	Correspondance (courriels et courrier)	Phases clés

Organisme/Groupe	Formule	Date
Ministre du Patrimoine canadien	Correspondance (courriels et courrier)	Phases clés
Ministre responsable de TPSGC	Correspondance (courriels et courrier)	Phases clés
Réunion avec la Commission de la capitale nationale et l'AAIMCO	Présentation et tables rondes	29 octobre 2014
Office de protection de la nature de la vallée Rideau et l'AAIMCO	Tables rondes	3 novembre 2014
Premières réunions des groupes de consultation de l'Étude (groupes de consultation des organismes, des entreprises et du public)	Présentation et tables rondes	3 et 4 décembre 2014
Réunion avec les associations communautaires de l'aire centrale (représentants de l'Association communautaire du Glebe, de l'Association communautaire du Vieil Ottawa-Est et de l'Association communautaire de Côte-de-Sable)	Présentation et tables rondes	15 décembre 2014
Réunion de travail avec la Commission de la capitale nationale et l'AAIMCO	Tables rondes	6 janvier 2015
Première réunion portes ouvertes pour le public	Panneaux, présentations, période de questions, feuilles de commentaires Échanges ouverts avec les membres de l'équipe	27 janvier 2015
Réunion des intervenants sur les répercussions en aval	Présentation et tables rondes	30 avril 2015
Réunion communautaire avec les résidents le long du chemin Lester (tenue par le bureau de la conseillère Deans)	Présentation et tables rondes	12 mai 2015
Réunion de mise à jour avec la Commission de la capitale nationale et l'AAIMCO	Présentation et tables rondes	13 mai 2015
Deuxièmes réunions des groupes de consultation de l'Étude (groupes de consultation des organismes, des entreprises et du public)	Présentation et tables rondes	2 et 5 juin 2015
Deuxième réunion portes ouvertes pour le public	Panneaux, présentations, période de questions, feuilles de commentaires Échanges ouverts avec les membres de l'équipe	17 juin 2015
Réunion des intervenants avec l'Alliance pour les espaces verts dans la capitale du Canada et la SNAP	Tables rondes	25 juin 2015
Atténuation du bruit – promenade de l'Aéroport	Présentation, période de questions, feuilles de commentaires	15 septembre 2015
Atténuation du bruit – chemin Lester	Présentation, période de questions, feuilles de commentaires	17 septembre 2015

Organisme/Groupe	Formule	Date
Assemblée générale annuelle de la Riverside Park Community and Recreation Association	Présentation et période de questions	7 octobre 2015
Troisièmes réunions des groupes de consultation de l'Étude (groupes de consultation des organismes, des entreprises et du public)	Présentation et tables rondes	1er mars 2016
Troisième réunion portes ouvertes pour le public	Panneaux, présentations, période de questions, feuilles de commentaires Échanges ouverts avec les membres de l'équipe	10 mars 2016
Réunion de mise à jour avec la CCN	Présentation et tables rondes	30 mars 2016
Comité des transports de la Ville d'Ottawa	Réunion publique	1er juin 2016
Réunion du Conseil	Réunion de l'ensemble	8 juin 2016

Une page Web a été créée pour le projet au début de l'Étude (http://ottawa.ca/fr/hotel-de-ville/consultations-publiques/elargissement-de-la-promenade-de-laeroport-et-elargissement-du-chemin-lester) et a été mise à jour à la lumière des renseignements recueillis pendant les réunions portes ouvertes. Des avis pour chaque réunion portes
ouvertes ont été publiés dans les journaux locaux, sur le site Web du projet et dans la liste de diffusion des intervenants ayant participé à l'étude.

Les principales questions soulevées pendant la consultation étaient les suivantes : besoins du projet et calendrier, effets sur la circulation en aval, nécessité de la bretelle du chemin Walkley et considérations environnementales.

1.0 Introduction

The City of Ottawa (City) initiated the Airport Parkway Widening and Lester Road Widening Environmental Assessment Study to determine the most appropriate means to accommodate and manage increasing transportation requirements related to growth in the surrounding communities and airport lands. A Recommended Plan has been developed and evaluated in accordance with Ontario's *Environmental Assessment* (EA) *Act*, fulfilling requirements as a Municipal Class EA process for Schedule 'C' projects.

The primary study area (project limits) includes the Airport Parkway between Brookfield Road and the Ottawa Macdonald-Cartier International Airport (OMCIA) and the Lester Road between the Airport Parkway and Bank Street. The primary study area also includes a new road link to Uplands Drive from the Airport Parkway. The study corridors are illustrated in Figure 1-1.

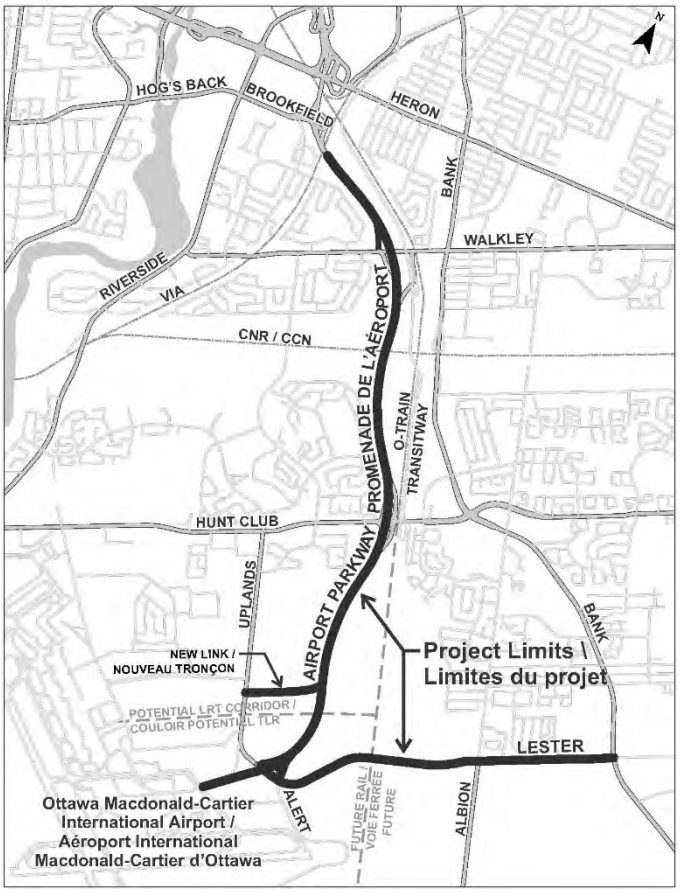


Figure 1-1: Study Area

1.1 Project Background

The Airport Parkway is a major north-south arterial road in the City. Along the corridor, the roadway traverses and connects the neighbourhoods of Confederation Heights, Riverside Park, Ellwood, South Keys, Hunt Club, Gloucester, Uplands and Blossom Park at the Brookfield, Walkley, Hunt Club and Lester interchanges. Lester Road is an east-west Arterial Road that joins to the Airport Parkway. This road also is an important commuter route joining communities lying south of the airport to the central part of the City and downtown. Rapid growth in the communities south of Hunt Club Road, including Leitrim, Riverside South, and Greely have increased traffic volumes on the Parkway, leading to congestion during the peak commuting periods. Future development of the Airport lands, with a planned Airport expansion as well as commercial development will also put increased pressure on these two corridors.

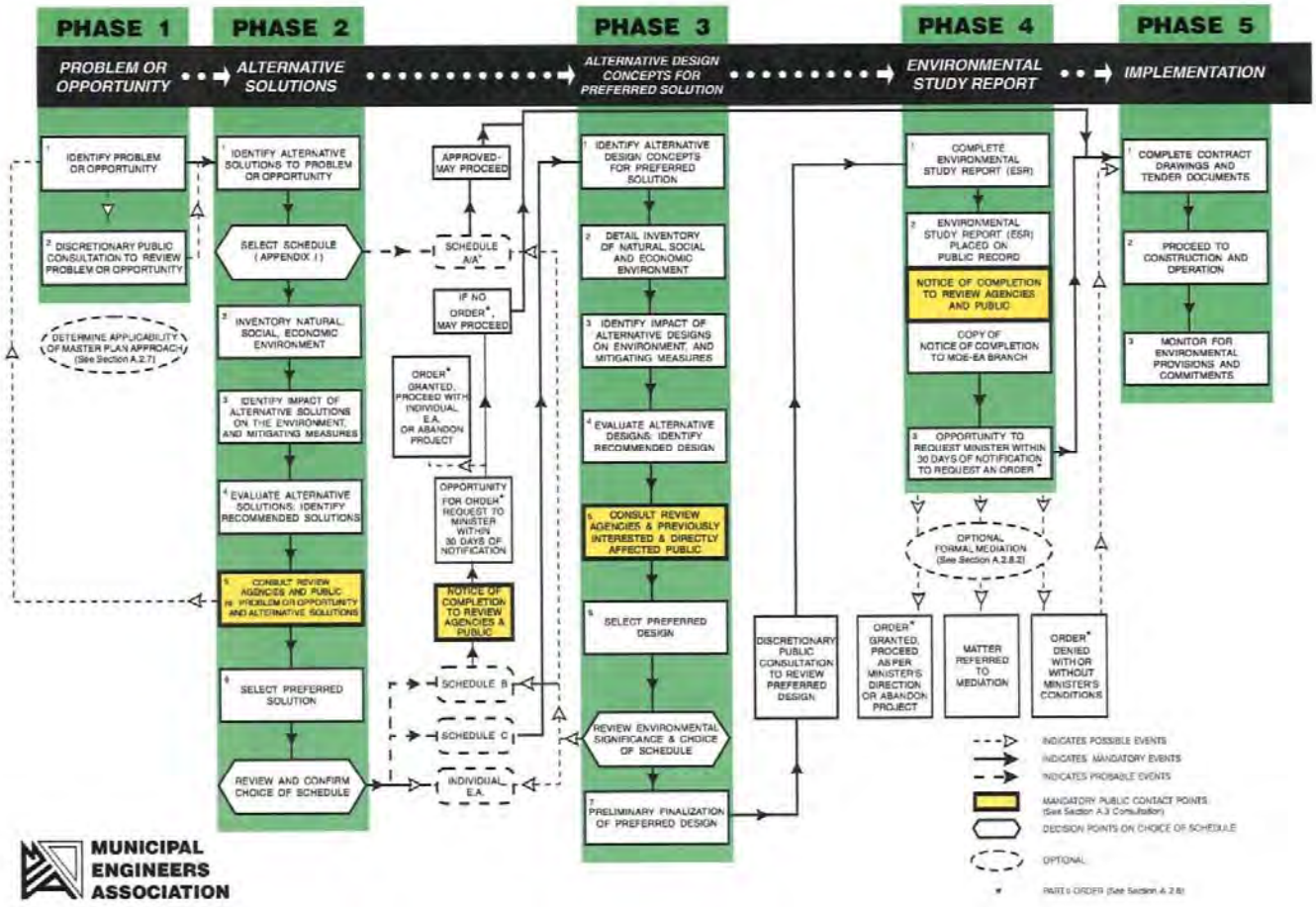
1.2 Environmental Assessment Process

This study is being carried out following the requirements of a Schedule 'C' project under the Municipal Class Environmental Assessment (Municipal Engineers Association, October 2000, as amended in 2007, 2011, & 2015), an approved process under the Ontario *Environmental Assessment Act* for municipal infrastructure projects. The EA process consists of five phases (Figure 1-2):

- Phase 1: Problem or Opportunity
- Phase 2: Alternative Solutions
- Phase 3: Alternative Designs
- Phase 4: Environmental Study Report
- Phase 5: Implementation

The study is structured so that each phase builds on the previous one and provides greater clarity and support regarding the goals of the project. It is important to note that Phases 1 and 2 were completed through the City's 2013 Transportation Master Plan (TMP) process. However, the terms of reference for this study include a re-confirmation of the project need and preferred solution for the corridor, being the widening from two to four lanes for both the Airport Parkway and Lester Road corridors as well as a new road link to Uplands Drive from the Airport Parkway.

Figure 1-2: Environmental Assessment Process



1.3 Consultation

Public Consultation is a fundamental part of the EA process. Consultation and the exchange of information was undertaken throughout this assessment using a variety of methods including meetings with consultation groups, individual stakeholders, community groups, and the general public, internet postings and newspaper advertisements. The scheduling of consultation opportunities corresponded to key project milestones. This section of the report provides an overview of the consultation processes, while more detailed accounts of the consultation activities are described throughout this report. A summary of all consultation activities and materials presented is contained in Appendix A - Consultation Record.

1.3.1 Advisory Committees

The project proceeded under the direction of the City of Ottawa and benefited from the direct involvement of three consultation groups that served an advisory representing various interests in the community:

- An Agency Consultation Group (ACG) consisting of representatives from the City of Ottawa, government agencies and other approval authorities;
- A Business Consultation Group (BCG) consisting of representatives from area businesses; and
- A Public Consultation Group (PCG) consisting of representatives from directly affected Community Associations and other interest groups.

1.3.2 Public Open Houses and Meetings

Three open houses were held at key stages during the assessment to obtain feedback from the general public on the project information being provided. Meetings followed work on confirming the problem or opportunity (needs assessment) and evaluation of alternative solutions, work on the evaluation of alternative designs, and work presenting the Recommended Plan for the corridors. The open houses were organized to allow informal viewing of display panels about the project and the examination of resource material related to the various stages of the EA and included a presentation and Question and Answer period. All displays and maps were bilingual. Study team members were present at all open houses to answer questions and explain various aspects of the study as well as work completed to-date.

1.3.3 Web Site

The City of Ottawa developed and maintained a project website with information about the proposed project and the EA process (http://ottawa.ca/en/airportparkway). The information prepared for the Open Houses was also formatted in a manner for incorporation into the City website with consideration for accessibility issues related to graphics and other printed materials.

1.3.4 First Nations Consultation

The aboriginal communities consulted as part of this study was determined in coordination between the City of Ottawa, the Ontario Ministry of Aboriginal Affairs, and Aboriginal Affairs and Northern Development Canada. Communities consulted include: Ottawa Métis Council, Algonquins of Eastern Ontario, Contact with the Algonquins of Ontario, Algonquins of Pikwàkanagàn, Kitigan Zibi Anishinabeg, and the Métis Nation of Ontario. Initial contact was sent to inform each group of the project and identify opportunities for involvement. Official notices were also sent through the study process. The Environmental Study Report (ESR) was made available for review by all of the identified communities. Consultation was achieved through email and physical letter mail correspondence with identified community representatives for this study. Correspondence that was sent/received is contained Appendix A – Consultation Record.

1.4 Report Organization

The purpose of this ESR is to document the EA process followed for the project and the conclusions reached. The report consists of the following sections:

- Introduction
- Project Need and Opportunity
- Existing Conditions
- Evaluation of Alternative Solutions
- Identification and Evaluation of Alternative Designs
- Recommended Plan and Assessment
- Implementation and Approvals
- Summary and Conclusions

The Appendices contain the technical reports and technical documentation prepared throughout the course of the study. These reports and documentation contributed to the decision making process and in the development of recommendations that led to the selection and development of the preferred design (Recommended Plan).

2.0 Project Need and Opportunity

Within the context of the Airport Parkway and Lester Road Widening EA, this analysis is intended to provide existing and projected traffic conditions along the Airport Parkway corridor, between the Macdonald-Cartier International Airport and Brookfield Road, and Lester Road between Bank Street and the Airport Parkway. The information contained herein is intended to aid in the discussion regarding the capacity requirements identified in the City's 2013 TMP and to inform a preferred solution for the subject project (i.e. Project Need and Justification).

2.1 The Planned Transportation Function of the Airport Parkway and Lester Road

The Airport Parkway is designated in the City's TMP as an arterial roadway. It is a north-south link between the OMCIA and Bronson Avenue with interchanges provided at Lester Road/Uplands Drive, Hunt Club Road, Walkley Road, Brookfield Road and Riverside Drive/Heron Road. The Airport Parkway performs multiple transportation roles within the arterial road network, as follows:

- gateway to the City, providing a convenient link for air travel passengers between the Airport, the City's downtown core and major east-west links (i.e. HWY 417, Riverside Drive, Hunt Club Road, etc.);
- major access route to/from employment land uses located at/near the Airport;
- commuter route linking Hunt Club Road, Walkley Road (partial interchange only) and Brookfield Road, serving adjacent communities south of Heron Road;
- commuter route serving the south Ottawa growth communities (i.e. Riverside South, Findlay Creek, Greely, rural areas, etc.); and
- spine cycling route.

Supplemental north-south links serving Ottawa south, within the vicinity of the Airport Parkway, include Bank Street, Albion Road, and Riverside Drive.

Lester Road is also designated in the City's TMP as an arterial roadway. It is an east-west link between the Airport Parkway and Bank Street. Given Lester Road is the first access point (in the northbound direction) to the Airport Parkway and given development is restricted along its length (being located within the Greenbelt), Lester Road is a desirable route for south Ottawa commuters to access the Airport Parkway. Beyond the Airport Parkway and Bank Street, Lester Road continues as Uplands Drive and Davidson Road, respectively. Lester Road performs multiple transportation roles within the arterial road network, as follows:

- "back door" access route for air travel passengers between the Airport, Bank Street, and areas to the east (i.e., Clarence-Rockland, Orléans, etc. via Davidson Road);
- minor access route to/from employment land uses located near the Airport;
- commuter route linking Bank Street and Albion Road to the Airport Parkway and Hunt Club Road, serving south Ottawa growth communities (i.e. Riverside South, Findlay Creek, Greely, rural areas, etc.);
- truck route linking the Airport and Uplands Drive to Bank Street; and
- spine cycling route.

In addition, the Airport Parkway is designated as a Scenic Entry Route in the City of Ottawa Official Plan (OP). It is also a similar designation as a Capital Arrival in the National Capital Commission's Plan for Canada's Capital (1999). These designations carry with them expectations for an enhanced design treatment and visual environment.

Figure 2-1 illustrates these transportation links within the context of the City's existing and planned Arterial Road Network. Figure 2-2 illustrates the link within the context of the existing and planned urban growth areas, including the OMCIA.

Figure 2-1: City of Ottawa Arterial Road Network (TMP, 2013)

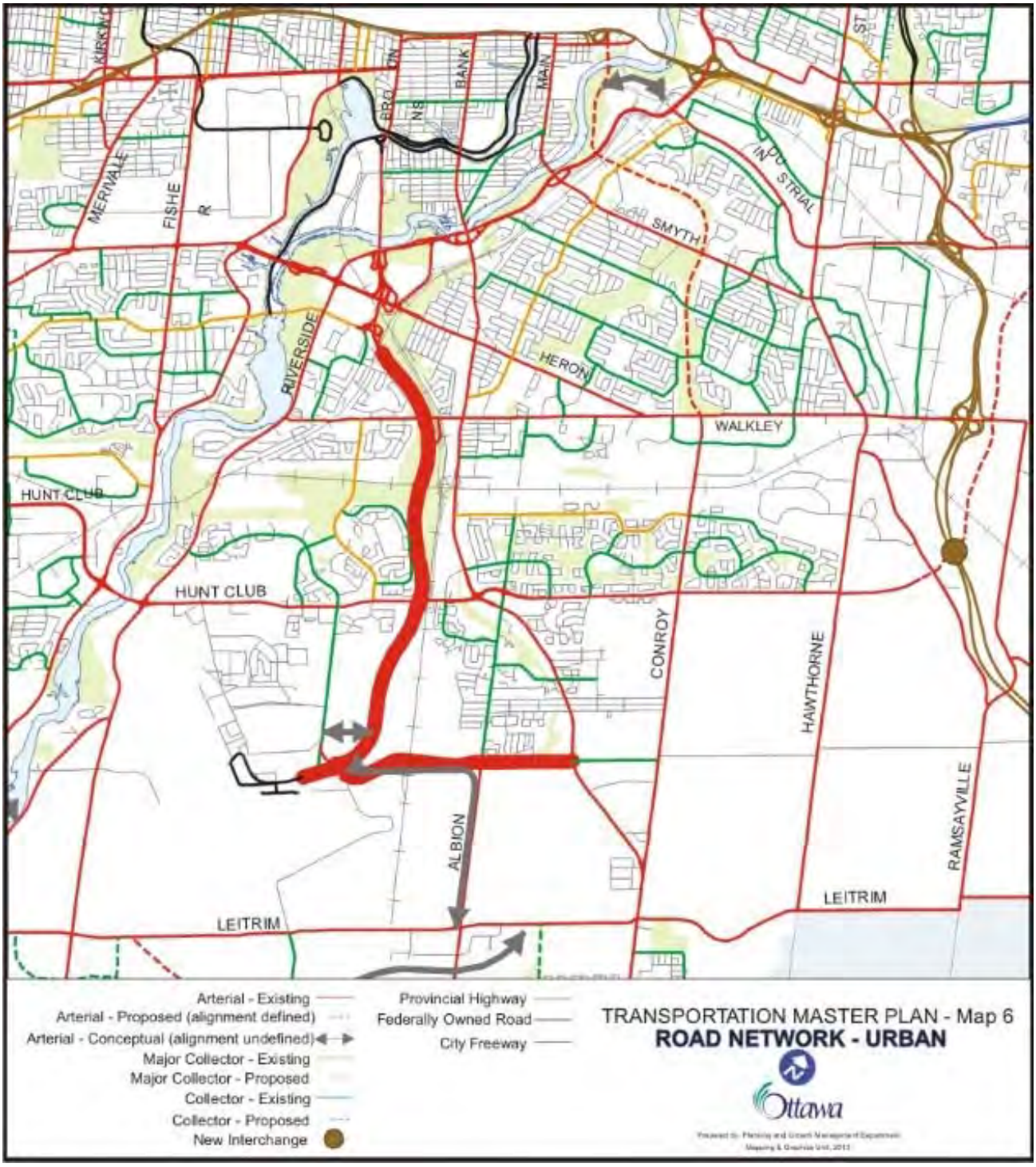
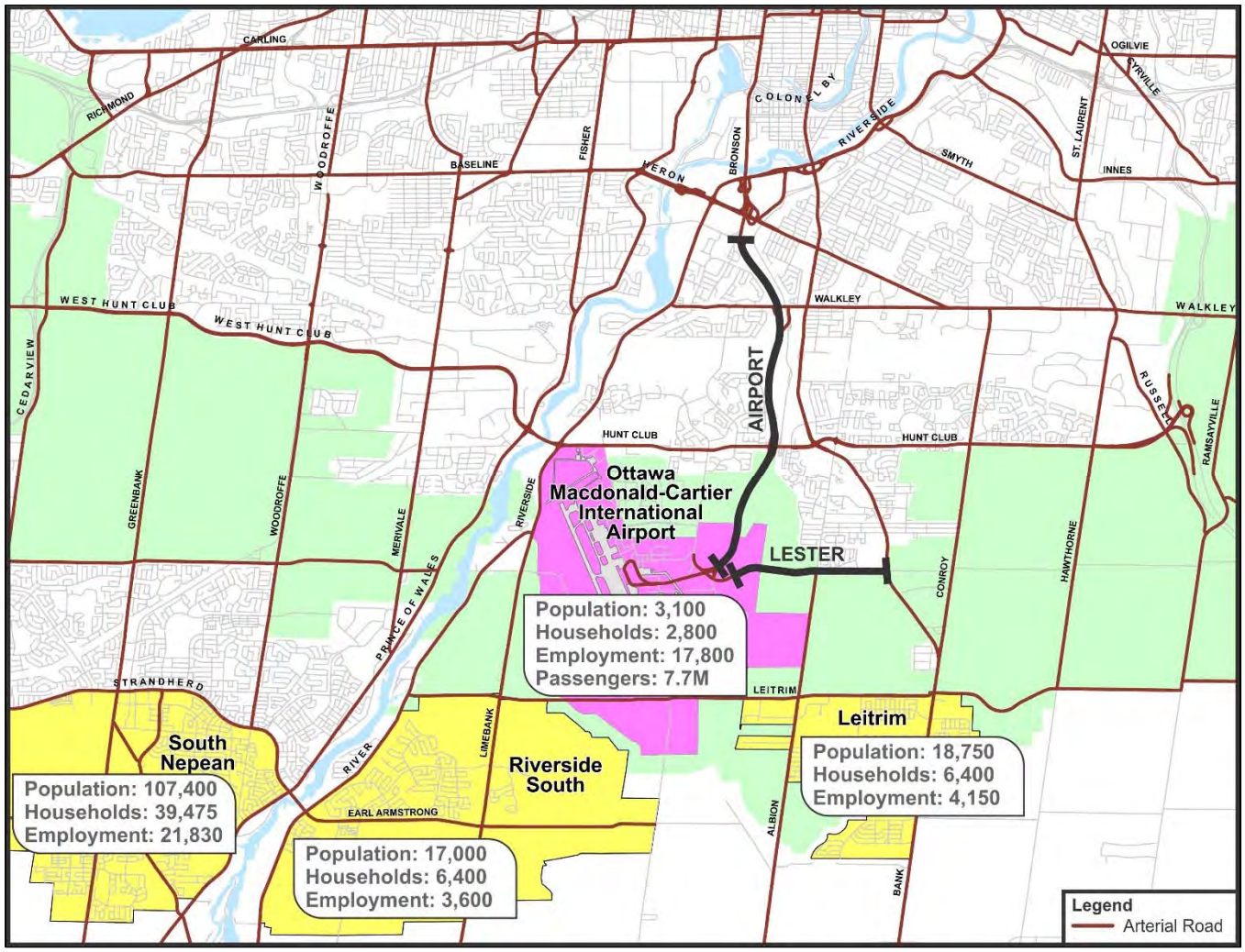


Figure 2-2: Urban Growth Forecast 2011-2031, City of Ottawa, OMCIAA



2.2 Existing Transportation Conditions

2.2.1 Traffic Volumes

The City of Ottawa provided their most recent weekday turning movement counts for the following study area intersections:

- Bronson/Brewer;
- Bronson/Riverside East;
- Bronson/Heron;
- Brookfield/Flannery;
- Airport Pkwy/Walkley East;
- Airport Pkwy/Walkley West;
- Airport Pkwy/Hunt Club;
- Uplands/Hunt Club;
- Uplands/EY Centre; and
- Lester/Bank.

Peak hour turning movement counts were collected by Parsons at the following study area intersections to supplement the data available through the City of Ottawa:

- Uplands/Airport SB Off Ramp;
- Airport Pkwy/Alert/Lester;
- Lester/Albion; and
- Airport Parkway South of Lester.

Noticeably absent from the available traffic data are multiple count stations on the grade-separated Airport Parkway itself. The City of Ottawa typically monitors turning movement data at signalized intersections only.

Current peak hour traffic volumes are illustrated in Figure 2-3. Peak hour directional volumes on the Airport Parkway range between less than 400 veh/h south of Lester to approximately 1,800 veh/h between Walkley Road and Hunt Club Road.

The highest observed Average Annual Daily Traffic (AADT), illustrated in Figure 2-4, is noted as approximately 35,500 two-way vehicles along the Airport Parkway (between Walkley Road and Hunt Club Road). AADT volumes on the Airport Parkway are lower by approximately one third between Hunt Club and Lester, and by one half south of Lester Road. On Lester Road, the highest observed AADT is 14,200 two-way vehicles (between Airport Parkway and Albion Road).

Classification and occupancy data for Screenline 13 (CNR East) and Screenline 19 (Rideau River), obtained from the City of Ottawa, are also included in Figures 2-3 and 2-4 for those stations along the Airport Parkway. As noted previously, traffic count data on the Airport Parkway itself north of Walkley Road, south of Hunt Club Road, and south of Lester Road are not readily available, and these volumes were derived using the Screenline (SL) 13 count, the Airport Parkway count south of the Uplands Drive southbound on-ramp, and peak hour counts at on/off ramps along the Airport Parkway. These derived counts are included in Figures 2-3 and 2-4 and are identified by grey “clouds”.

The peak hour directional volumes with respect to the AADT are generally considered to be approximately 10% of the AADT according to an industry standard rule-of-thumb. This relationship was found to be valid for the existing volumes within the study area with the notable exception of the volumes along Lester Road between the Airport Parkway and Albion Road. At this location the morning and afternoon traffic volumes combined represent approximately 20% of the AADT.

2.2.1.1 *Ernst & Young Centre*

The existing peak hour traffic volumes outlined in Figures 2-3 and 2-4 do not incorporate the traffic volumes associated with an event at the Ernst & Young Centre (EY Centre), which is a 220,000 ft^2 trade/consumer show facility located at 4899 Uplands Drive. There are approximately 1,800 parking spaces on-site.

Typical parking lot utilization data were obtained from the EY Centre for a wide range of events ranging from small, medium and the largest events such as Comicon and the Home & Garden Show. The parking lot data reveals that traffic to/from an event at the EY Centre during the weekday morning and afternoon commuter peak hours is generally less than traffic to/from the EY Centre during a weekend event. Typical hourly volumes associated with events at the EY Centre are summarized in Table 2-1.

Figure 2-3: Existing Weekday Morning and Afternoon Peak Hour Traffic Volumes

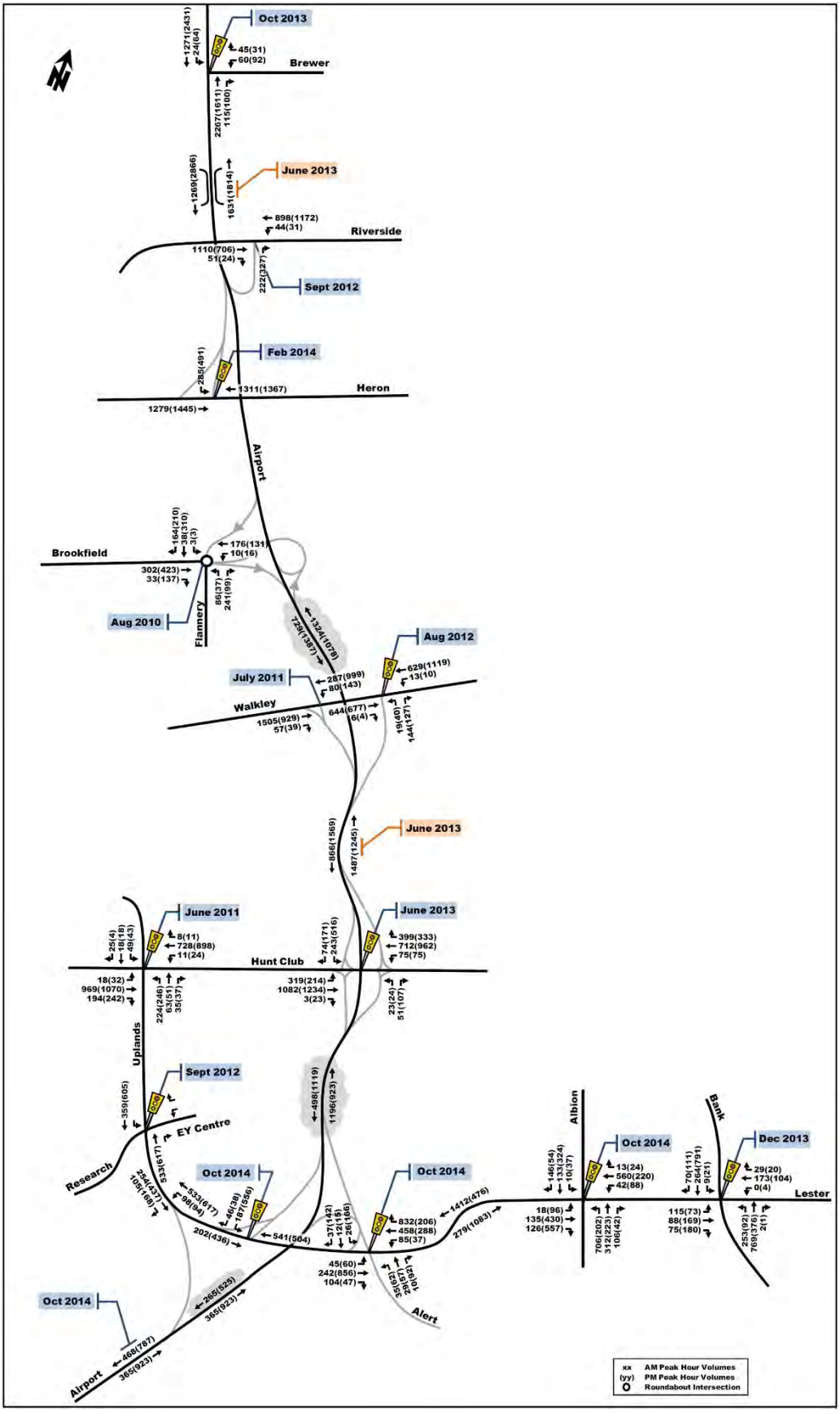


Figure 2-4 Existing Average Annual Daily Traffic Volumes:

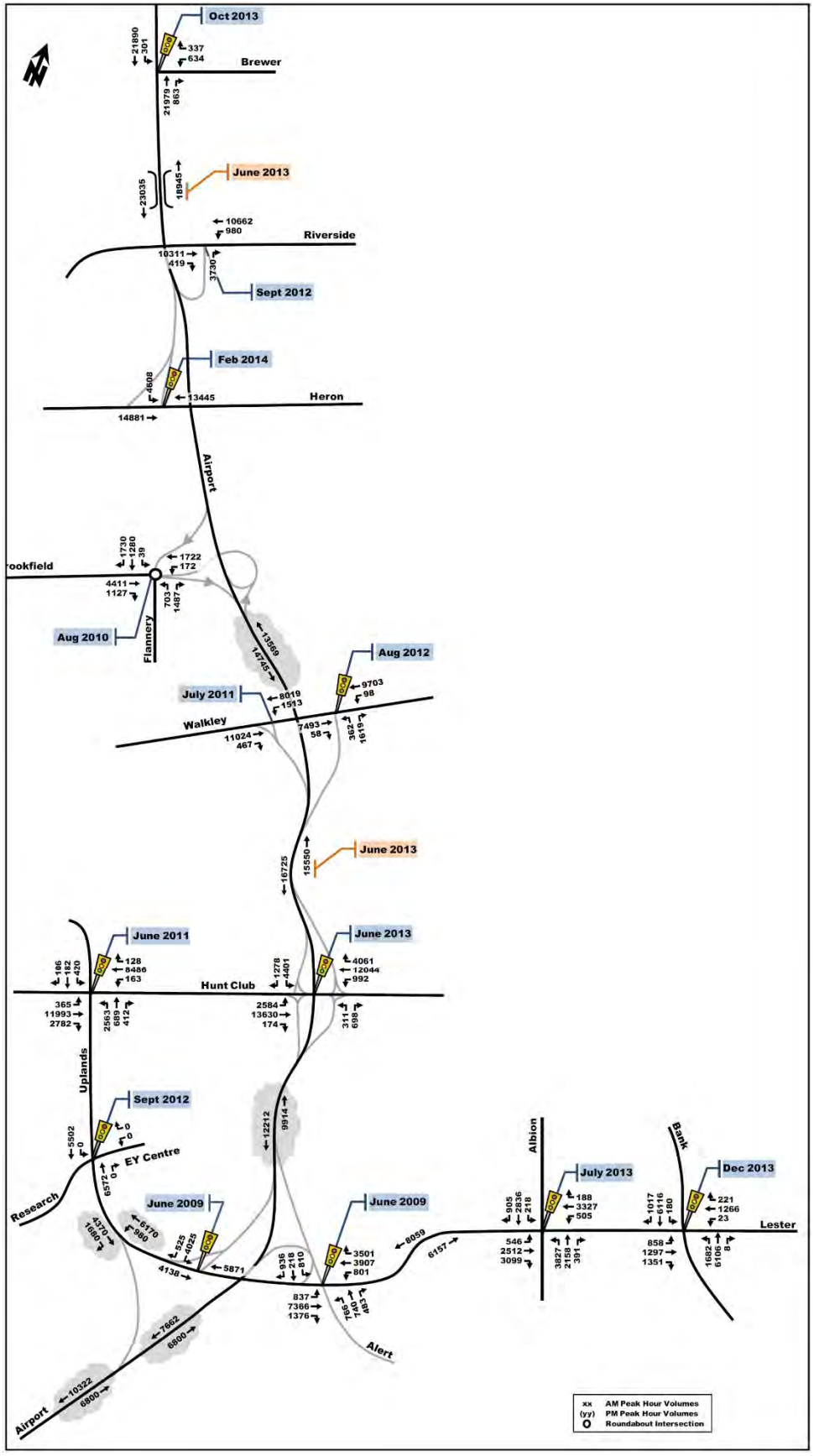


Table 2-1: Ernst & Young Centre Event Traffic Volumes

Time	Small Event[1] (veh/h)		Medium Event[2] (veh/h)		Large Event[3] (veh/h)	
	IN	OUT	IN	OUT	IN	OUT
Weekday AM Peak Hour	60	30	20	20	300	60
Weekday PM Peak Hour	30	60	120	120	180	300
Weekend Peak Hour	200	200	350	350	600	600
1 Young Presidents, Law Exams, Outdoor Adventure; 2 Zoomer/Train Expo, Home Design; 3 Sanko Toy/Shoe Sale/Pet Expo, Comicon, Home & Garden						

As shown in Table 2-1, approximately 1,200 veh/h can be expected to travel to/from the EY Centre during a large event on the weekend in comparison to approximately 500 veh/h travelling to/from an event at the EY Centre during the weekday afternoon peak hour.

EY Centre event traffic has been known to cause southbound queueing and back-ups along the Airport Parkway and Uplands Drive during some large events. This congestion is a result of a large volume of vehicles accessing the controlled parking lot area over a short period of time, and not considered an issue with the available road capacity per se on the Airport Parkway. For the purposes of this analysis, the weekday peak hour existing traffic volumes combined with the event traffic during the weekday peak hours represents the 'worst-case' scenario.

2.2.1.2 *Transit Operations*

Transit service along Airport Parkway is currently provided south of Hunt Club Road by OC Transpo Routes #97, 99, 147, and 204. North of Hunt Club Road, buses travel along the Transitway, parallel to the Airport Parkway. Regular Routes #97, 98, 99, and 147 provide frequent all-day service. Rural Route #204 provides Thursday morning and afternoon peak hour service only (free service).

Bus stops for these routes are located at the following locations within the study area:

- Airport/Uplands
- Uplands/Research
- Uplands/Alert
- Lester/Uplands
- Lester/Albion
- Hilton Gardens Inn (along Airport Parkway)
- Ottawa International Airport
- Transitway/Hunt Club

During the weekday peak hours, an estimated 10 buses travel within the study area along the Airport Parkway and/or Lester Road.

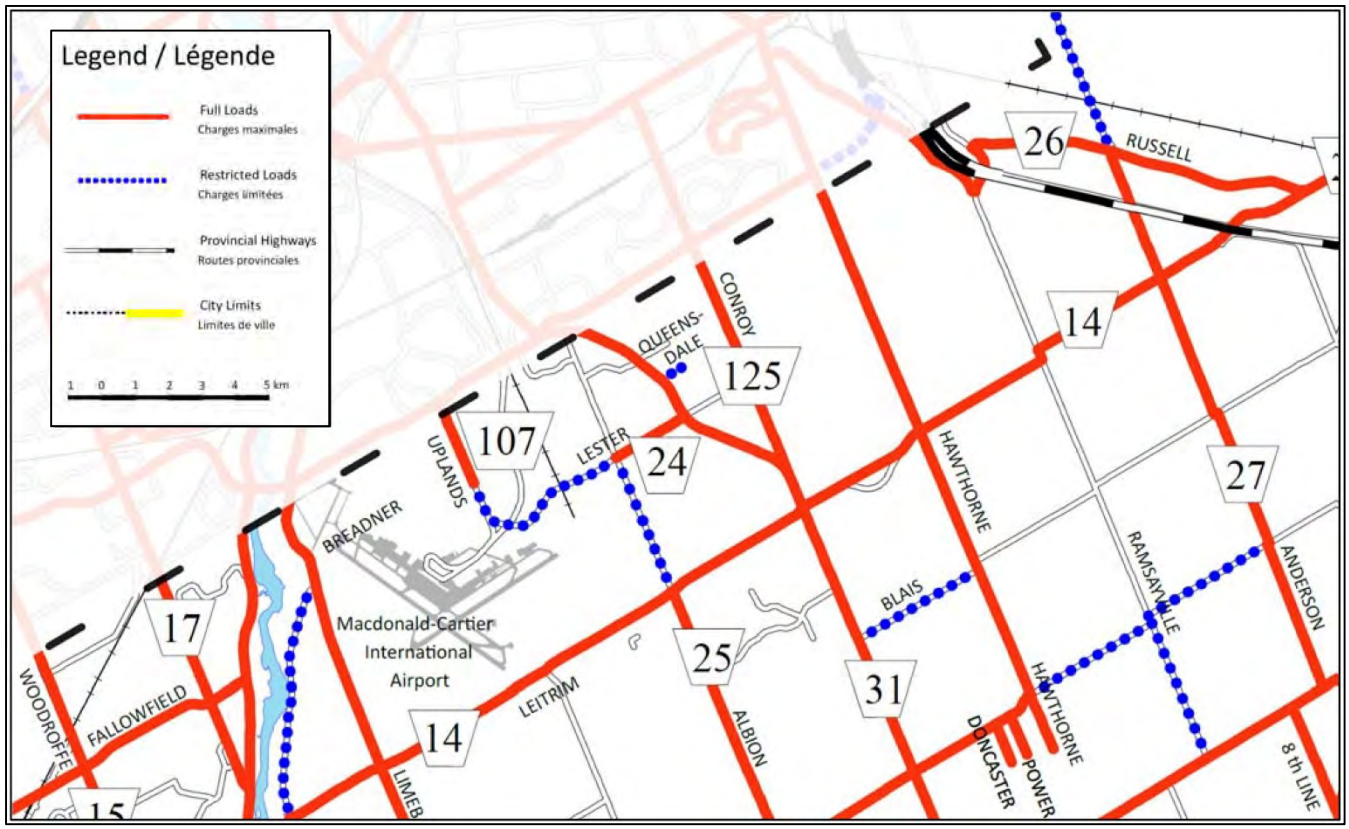
Regarding future plans for the study area, the 2013 TMP identifies the Airport Parkway south of Hunt Club Road as a Transit Priority corridor (bus/HOV lanes), and the LRT is expected to extend south past Leitrim Road parallel to the Airport Parkway with stations at Hunt Club Road and Leitrim Road.

2.2.1.3 *Truck Traffic*

Figure 2-5 is the City's Rural Truck Route Map, which indicates that the Airport Parkway does not form part of the designated truck route. There are numerous designated truck corridors in the vicinity, however, including Albion Road, Lester Road and Uplands Drive, Hunt Club Road, Leitrim Road, Bank Street, etc.

As truck traffic is prohibited along the Airport Parkway, the amount of truck traffic is assumed to be negligible. The Screenline 13 data confirms that approximately 1% of traffic is categorized as 'heavy trucks'.

Figure 2-5: City of Ottawa Rural Truck Route (excerpt only)



2.3 Travel Patterns

Based on the existing traffic volumes, Select Link analyses from the TRANS regional model, and our knowledge of the surrounding area, an initial assessment was completed of the origin-destination travel patterns of vehicles currently using the Airport Parkway and Lester Road.

Particular attention was given to conditions in the vicinity of the Airport (to help understand the nature of the road users on this part of the network) and north of the Study Area on Bronson Avenue (to help understand the overall network connectivity role of the Corridor and potential downstream impacts).

It is important to recognize that a comprehensive assessment of the origin-destination patterns throughout the corridor would require an extensive data collection effort to track individual vehicle “on” and “off” movements throughout the corridor, and such data are currently not available.

2.3.1 Near the Airport

The nature of the road layout in the vicinity of the Airport enables the existing intersection turning movement counts to be used as the basis to estimate the origin-destination patterns in the area. These estimates are illustrated in the following Figures 6 to 11. Each figure represents a directional link volume as 100% (in red) and the distribution of that volume throughout the road network as a percentage. It is noteworthy that these percentages do not include event traffic to/from the EY Centre.

This series of figures provide an indication of the relative importance of the Airport Parkway and Lester Road in serving the commuter versus Airport access role during the peak hours. In some cases, the role is predominantly a commuter one, and in other cases the role is more balanced between commuter and Airport access. Note that the percentages would be influenced should there be an event at the EY Centre layered into the analysis.

Figure 2-6: Destination of Vehicles along Airport Parkway Southbound - North of Lester Road

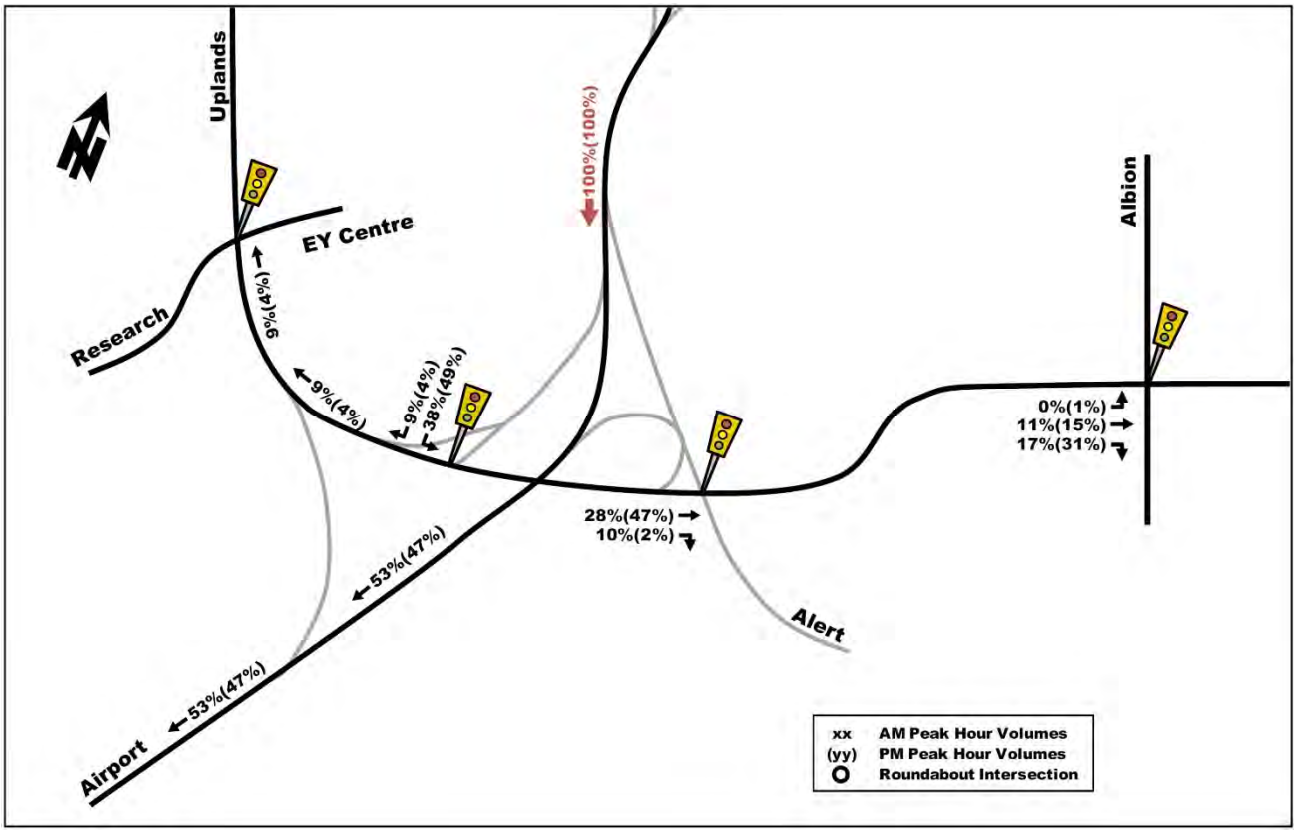


Figure 2-7: Origin of Vehicles along Airport Parkway Northbound – North of Lester Road

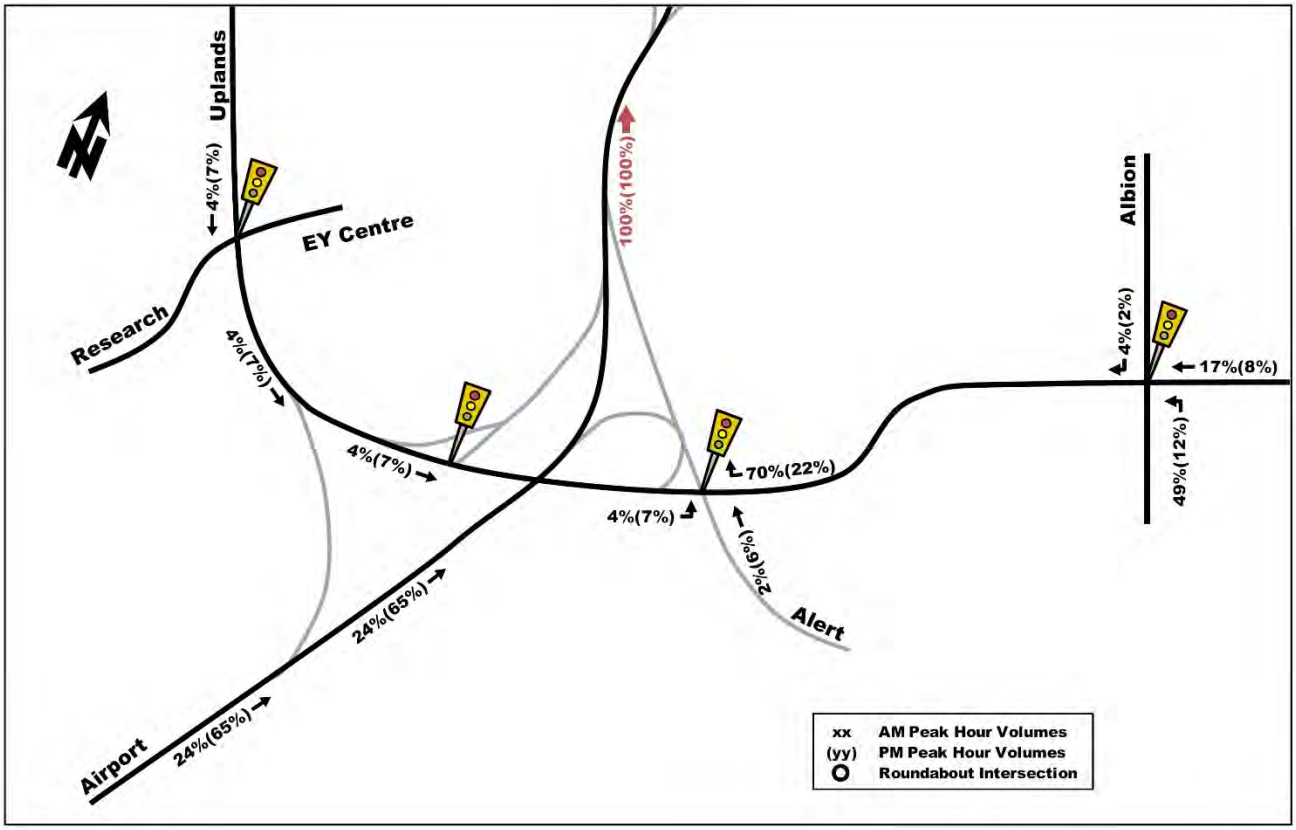


Figure 2-8: Origin of Vehicles along Airport Parkway Southbound – South of Lester Road

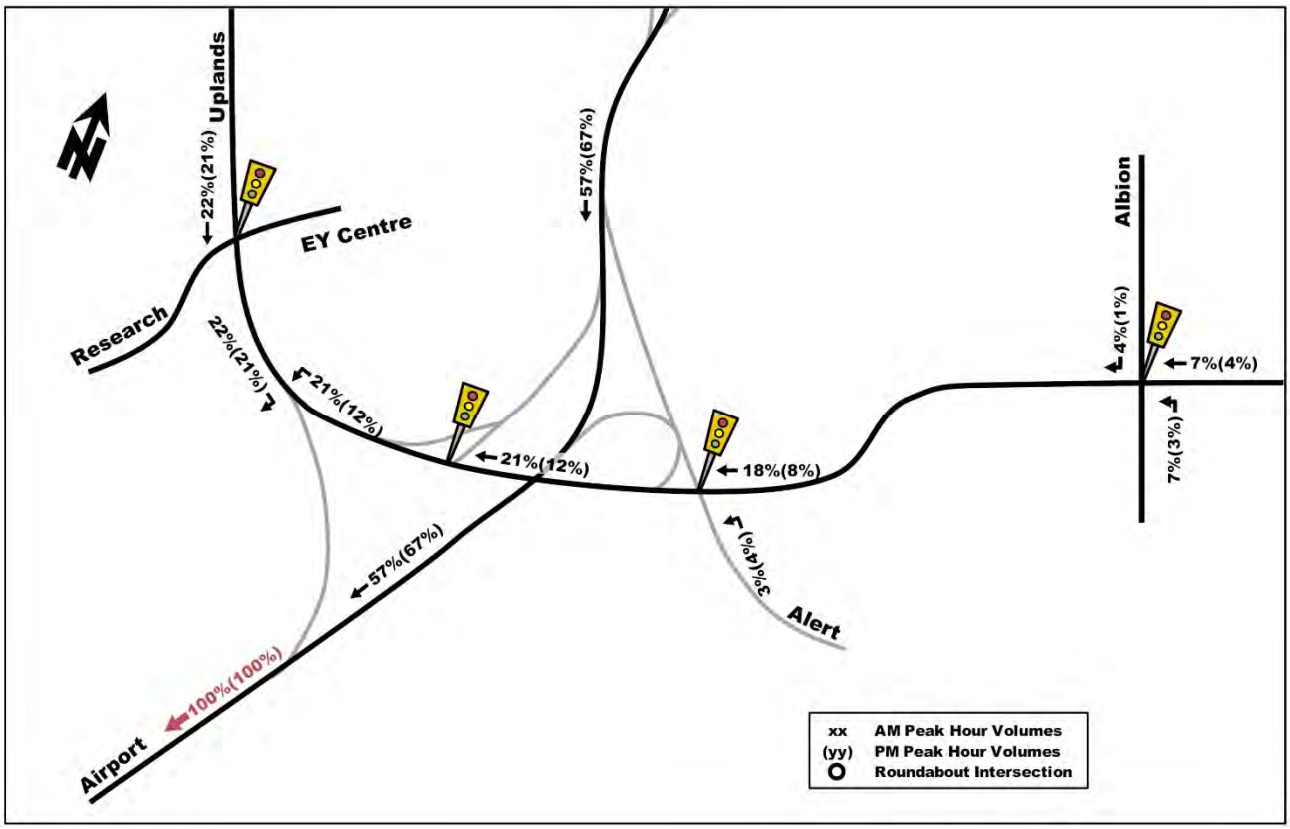


Figure 2-9: Destination of Vehicles along Airport Parkway Northbound – South of Lester Road

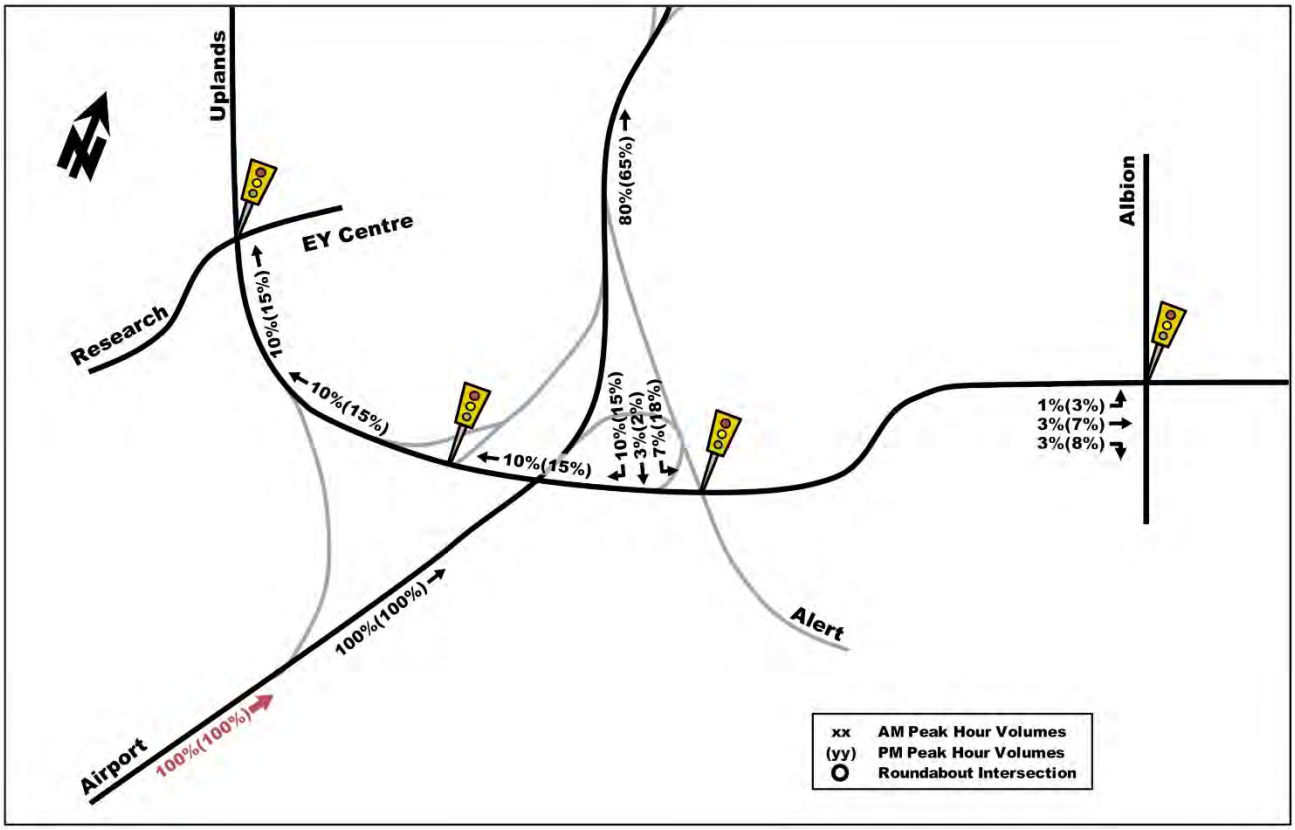


Figure 2-10: Origin/Destination of Vehicles along Lester Road Westbound – East of Albion Road

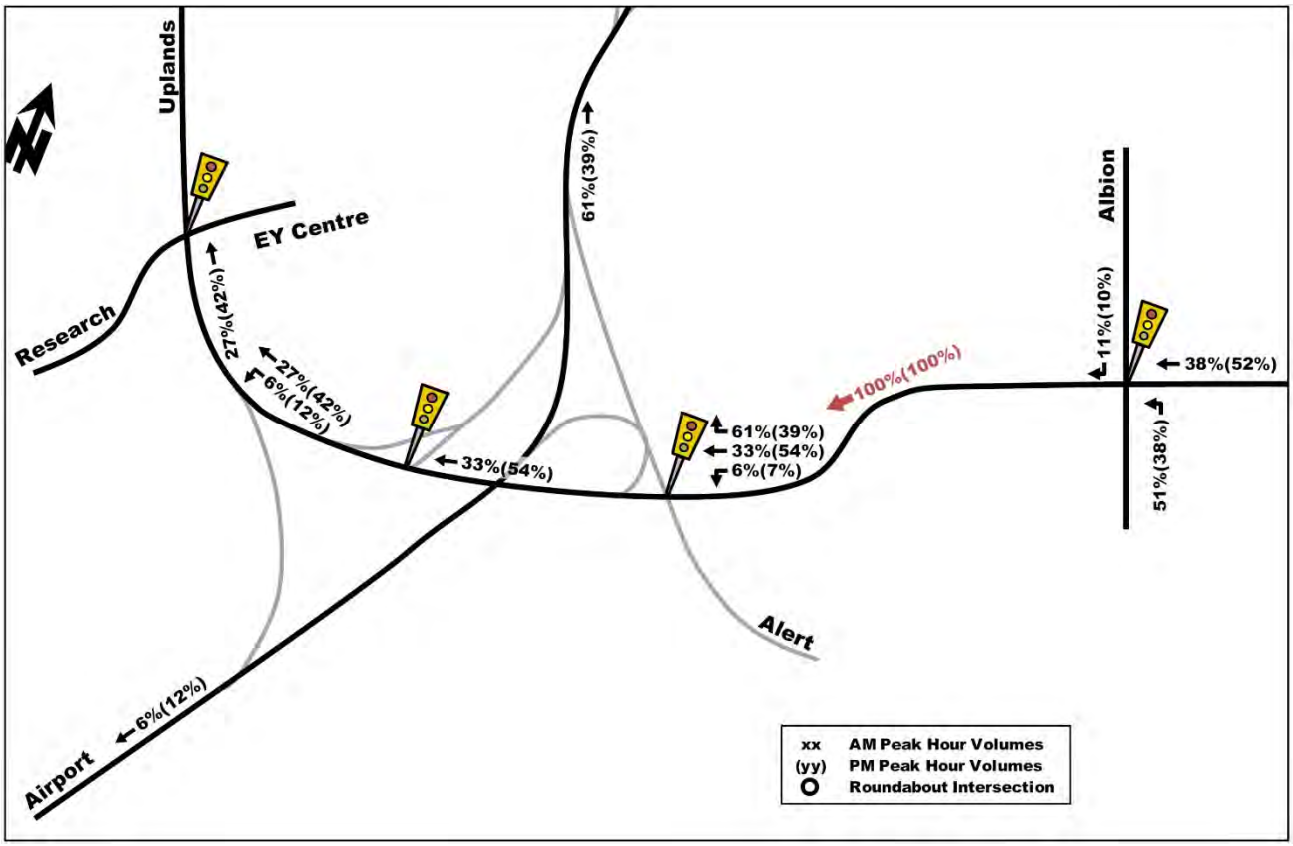
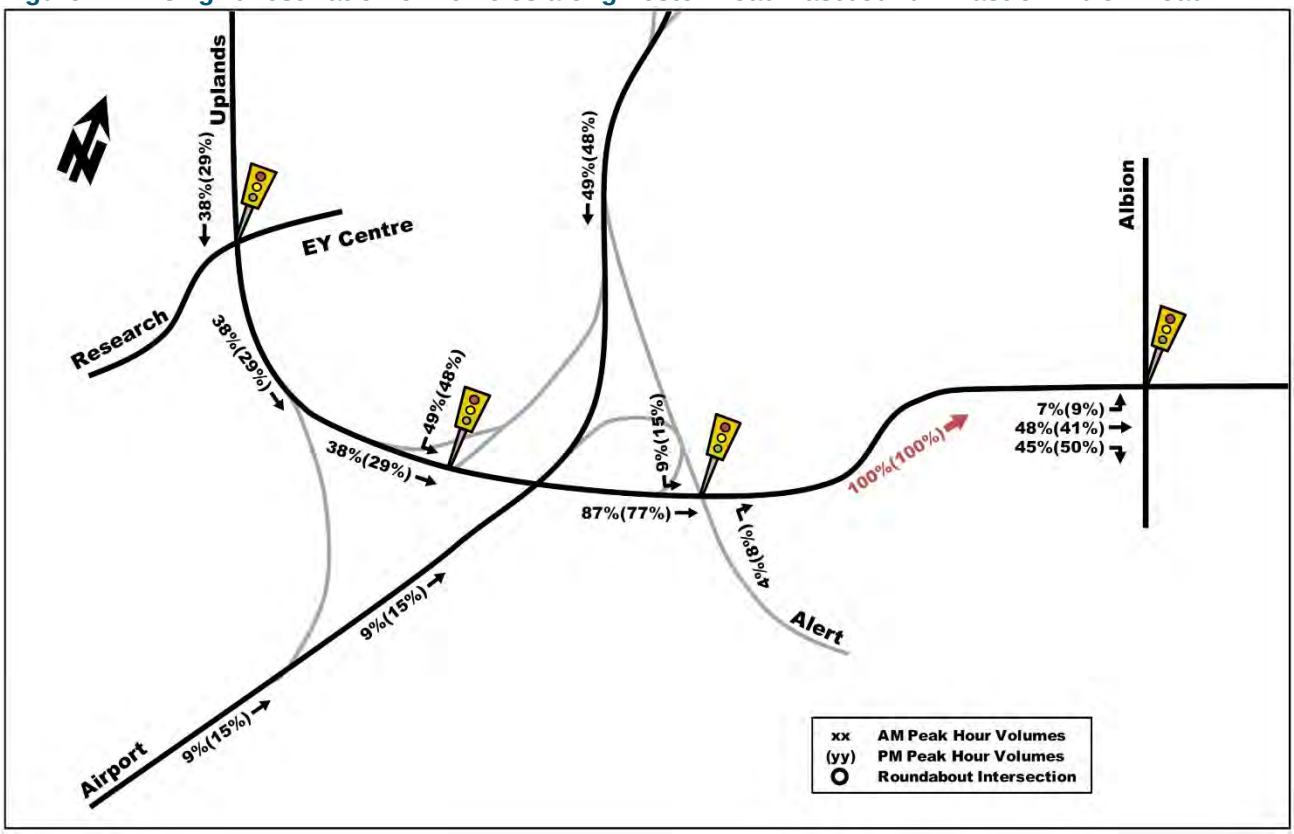


Figure 2-11: Origin/Destination of Vehicles along Lester Road Eastbound – East of Albion Road



2.3.2 Downstream (Bronson Avenue)

Although outside of the formal study area, traffic conditions on Bronson Avenue (north of the Airport Parkway) is an important consideration as some traffic travelling on the Airport Parkway will be destined to, or originate from, Bronson Avenue.

Bronson Avenue south of Highway 417 has notable intersecting roads as potential traffic sources/sinks, including: Heron Road, Riverside Drive, Sunnyside Avenue (and Carleton U), Colonel By Drive and Carling Avenue. Figure 2-12 summarizes the existing northbound traffic patterns within the Airport Parkway-Bronson Corridor during the AM peak hour. The volumes in some instances were estimated based on existing intersection turning movement obtained from other studies/documents (as the City's inventory of traffic counts in the area is not comprehensive). These data suggest that the amount of exiting traffic (between Walkley and south of Carling) to area employment/institutional nodes (i.e., Carleton U, Confederation Heights, etc.) and intersecting Arterial, Collector and Driveway routes is roughly equivalent to the amount of entering traffic. This suggests that the majority of traffic that originates south from the Airport and growth communities is not destined to Downtown, and reinforces the network connectivity role of the Corridor.

As shown, Bronson Avenue approaching Carling Avenue is currently exhibiting traffic volumes of approximately 1,800 veh/h, which is consistent with the operational capacity of this urban arterial road segment. Note that once the capacity of a road corridor is reached, the expectation is that travelers will contemplate changing travel modes, completing the trip at another time (i.e., peak spreading), or diverting to an alternative route with a more competitive travel time.

As documented in the City's TMP (see Figure 2-13 below), vehicle traffic to/from Ottawa's downtown areas has been diminishing in recent years due to various reasons including: no new road capacity through/to the downtown areas is being provided; investments in rapid transit have been successful; and employment, retail, and service destinations are being more and more relocated/distributed across the City over time (not focussed downtown). This trend is expected to continue throughout the planning horizon (2031) and is an assumption made in the context of the environmental assessment for the widening of the Airport Parkway. In this north-south corridor, of those travellers originating at the airport area and in the growth areas south of the airport and destined for the downtown area, a relatively lower percentage is anticipated to be driving to the downtown area in the future compared to those using rapid transit. This is because the proposed rail rapid transit is planned to be implemented in this corridor linking Riverside South directly to the downtown during the planning horizon. Travel time from the south growth areas to the downtown area will be shorter using rapid transit, likely less expensive and more stress free, which are attractive to commuters.

Figure 2-12: Northbound Traffic Patterns within the Airport Parkway-Bronson Corridor (AM Peak)

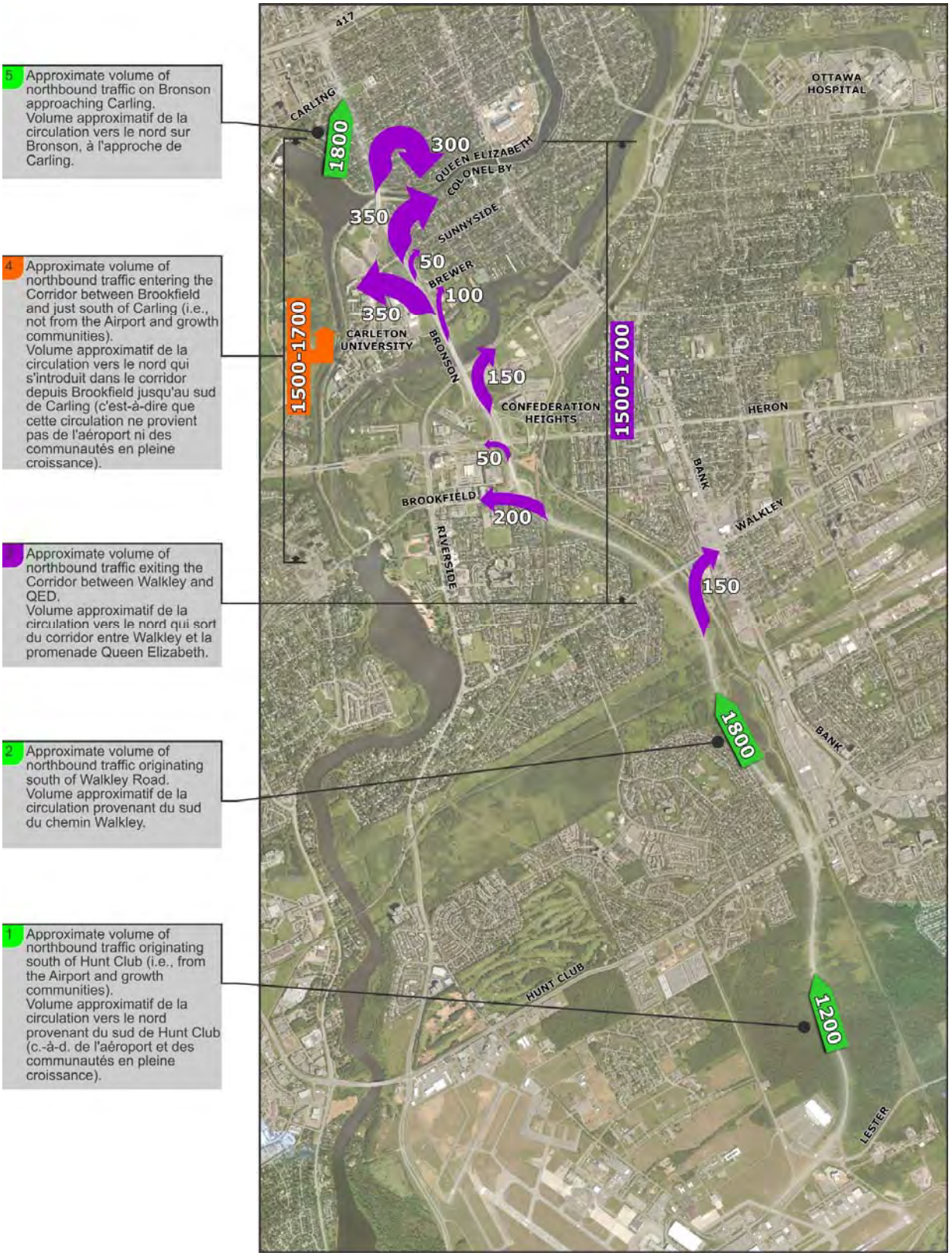
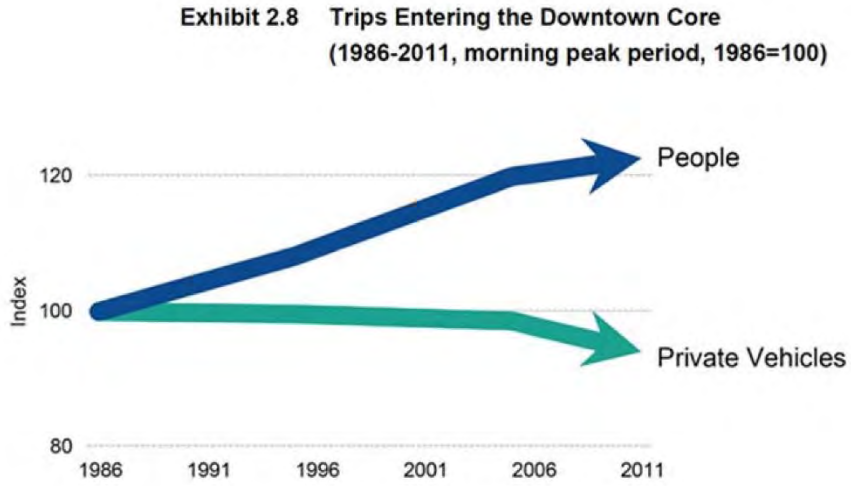


Figure 2-13: Historical Trend of Trips Entering Ottawa's Downtown Core



Source: City of Ottawa TMP 2013

2.4 Road Safety Assessment

2.4.1 Travel Speeds

Speed survey data gathered by the City for the Airport Parkway and Lester Road is summarized in the following Figures 2-14 and 2-15, respectively. The posted speed limit is 80 km/h along the entire length of the Airport Parkway, from the OMCIA to Heron Road. The average compliance level is approximately 38% with 85th percentile travel speeds of approximately 13 km/h +/- 2 km/h greater than the posted speed limit.

The posted speed limit along Lester Road is 80 km/h from the National Research Council driveway (east of the Airport Parkway) to Bank Street (where the 80 km/h speed limit continues along Davidson Road). The average compliance level is approximately 55% with 85th percentile travel speeds of approximately 10 km/h +/- 2 km/h greater than the posted speed limit.

Based on the available data, there does not appear to be any significant safety issues with respect to observed travel speeds. Typically, concerns over travel speeds are raised when the 85th percentile speed is 15 km/h +/- 2 km/h greater than the posted speed limit.

Figure 2-14: Speed Survey along the Airport Parkway

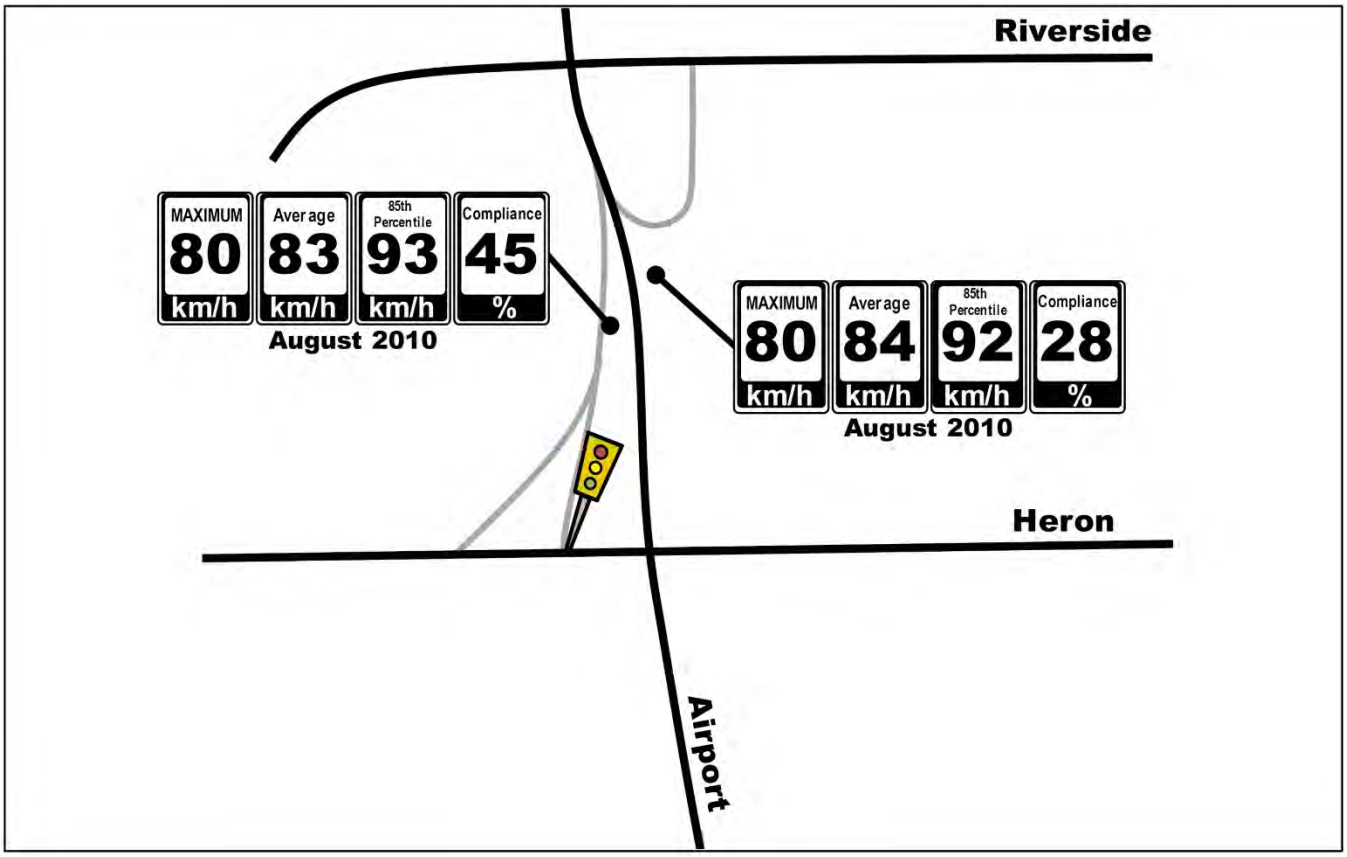
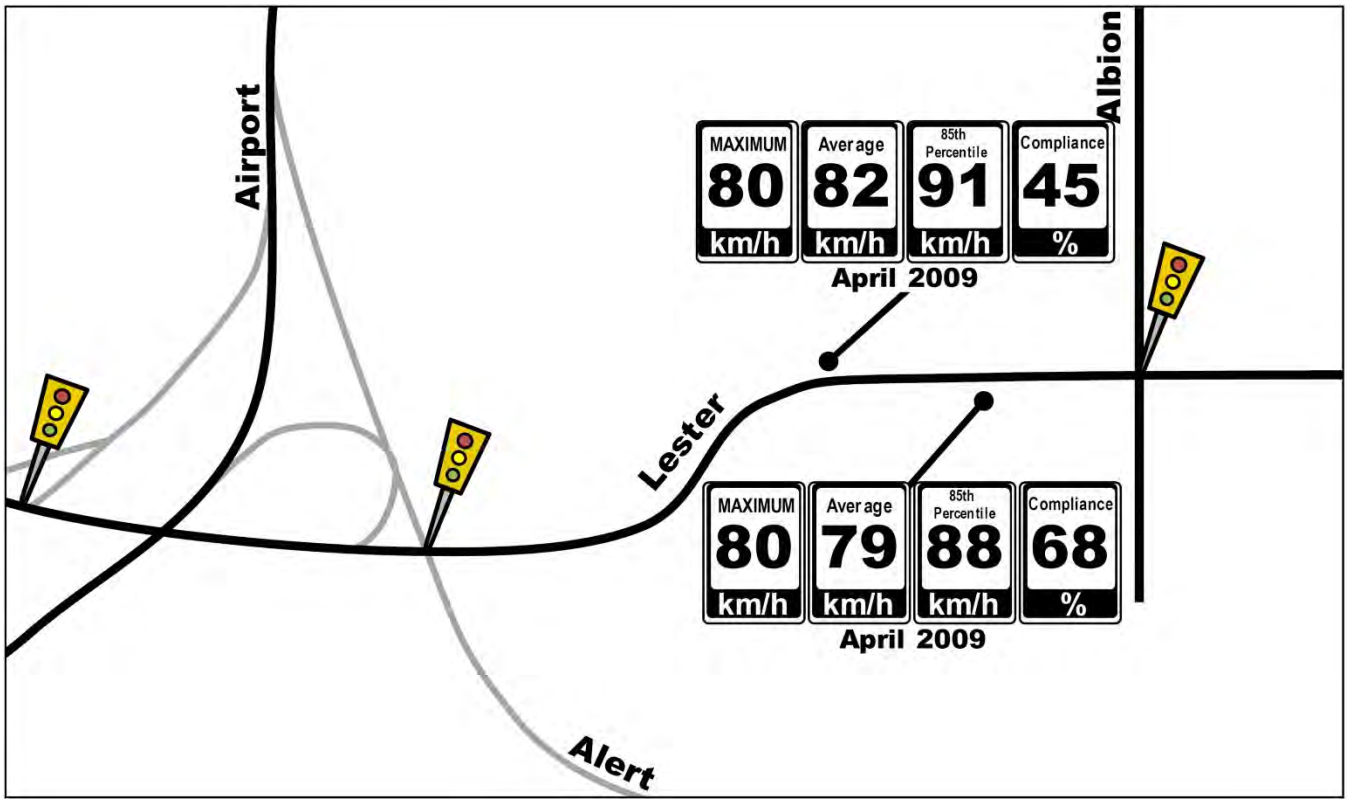


Figure 2-15: Speed Survey along Lester Road



2.4.2 Existing Queue Observations

Noticeable queueing/back-ups currently occur along the Airport Parkway at the following times and locations:

- During the morning peak hour:
  - queues develop northbound along the Airport Parkway approaching Hunt Club Road as a result of heavy Hunt Club Road on-ramp traffic (400 veh/h from the east and 300 veh/h from the west) merging with high northbound through volumes along the Parkway (1,200 veh/h);
- During the afternoon peak hour:
  - southbound queues develop along the Airport Parkway south of the Brookfield on/off ramps as the parkway is narrowed from 4 lanes to 2 lanes (1,700 veh/h);
  - the congestion typically continues through to Hunt Club Road where a high volume of vehicles exit the Airport Parkway (700 veh/h); and
- During large events at the EY Centre (i.e. Comicon), queuing can occur in the vicinity of the EY Centre. Operational issues are considered unrelated to capacity along Lester Road/Uplands Drive, rather constraints at the parking lot of the EY Centre.

2.4.3 Collision History

Collision history for the Airport Parkway from Brookfield Road to Uplands Drive and for Lester Road from the Airport Parkway to Bank Street (years 2011 to 2013, inclusive) was obtained from the City. A total of 184 and 78 collisions were reported along the Airport Parkway and Lester Road, respectively. Most collisions (76%) involved property damage only, indicating low impact speeds and 24% were reported as “non-fatal”. The remaining 1% was identified as “non-reportable”, indicating the total damage to a vehicle was less than $1,000.

The primary causes of collisions cited by police along the Airport Parkway include rear-end (37%), single vehicle (18%), sideswipe (17%) and turning movement (13%) type collisions. Along Lester Road, the primary causes of collisions cited by police include single vehicle (27%), rear-end (23%), angle (21%) and turning movement (18%) type collisions.

At notable intersections or mid-block sections of roadway (i.e. where more than 10 collisions were reported) within the study area, a standard rate of Collisions/ MEV (Collisions per Million Entering Vehicles) was calculated, which are as follows:

- 0.65/MEV at the Brookfield/Flannery intersection;
- 0.43/MEV at the Walkley/Airport Pkwy E intersection;
- 1.07/MEV at the Hunt Club/Airport Pkwy intersection;
- 0.50/MEV at the Uplands/Airport Pkwy W intersection;
- 0.76/MEV at the Lester/Airport Pkwy E intersection;
- 0.76/MEV at the Lester/Albion intersection;
- 0.64/MEV at the Lester/Bank intersection;
- 0.87/MEV along Airport Parkway from Brookfield Road to Walkley Road;
- 0.74/MEV along Airport Parkway from Walkley Road to Hunt Club Road;
- 1.54/MEV along Airport Parkway from Hunt Club Road to Lester Road;
- 1.48/MEV along Lester Road from Airport Parkway to Albion Road; and
- 0.77/MEV along Lester Road from Albion Road to Bank Street.

In previous consultation with the City's Traffic, Safety and Mobility Unit of the Traffic Management and Operational Support Branch, an intersection or mid-block section of roadway exhibiting a standard Collisions/MEV approaching or exceeding 2.0 is considered to be problematic and will require further investigation. On this basis alone, there are no specific intersections or segments of roadway that should be of particular concern.

Of the total collisions reported within the study area in the past three years:

- There were no fatal accidents;
- 3 accidents along the Airport Parkway and 2 accidents along Lester Road involved cyclists;
- 1 accident involved a pedestrian, which occurred at the Walkley/Airport Pkwy E intersection;
- A total of 8 accidents along the Airport Parkway and 1 accident along Lester Road involved animals/wildlife; and
- A total of 25 accidents along the Airport Parkway and 1 accident along Lester Road involved vehicles making a U-turn.

The high number of accidents related to U-turns (25 of 184, or 14%) is notable, and may provide an indication that a suitable median treatment is required. It is not clear for the reason for the U-turn manoeuvers (i.e., avoid congestion, access off-ramps, etc.), however, the majority of accidents involving U-turns occurred in the northbound direction near the Hunt-Club interchange (9 just north of Hunt Club Road and 9 south of Hunt Club Road). This indicates that drivers may be electing to U-turn to avoid traffic congestion on the Airport Parkway in the vicinity of Hunt Club Road. The remaining 7 collisions involving U-turns occurred in the vicinity of the Lester Road interchange.

The source collision data as provided by the City and related analysis is provided in the full report in Appendix B - Supporting Reports.

2.5 In-Service Road Safety Review

In 2006, the Airport Parkway was identified by the City of Ottawa as having a number of ongoing safety and operational concerns relating to its unique design and the growing demands placed on this roadway. This prompted the City to undertake an In-Service Road Safety Review of the Airport Parkway between Dunbar Bridge and Ottawa International Airport. The In-Service Road Safety Review (ISRSR) was completed in May 2007.

Some of the recommendations identified in the ISRSR Report were included in the City of Ottawa TMP, including the subject widening of the Airport Parkway between Brookfield and the Airport. Short-term recommendations (within 1-year) included: rationalization of directional and warning signage; sight line improvements through removal of vegetation; conduct public awareness campaign; implement fully fenced right-of-way between Brookfield and Hunt Club; elimination of edge drop offs; and increase speed change lanes and tapers to minimum standards. The over-arching medium-term recommendation (within 5-years) was to widen the Airport Parkway between Brookfield and Hunt Club to a four-lane divided cross section, which involved operational improvements such as extending the northbound through lane from Hunt Club to Brookfield, carrying two southbound lanes from Brookfield to Hunt Club. Other recommendations included provision of a paved shoulder along the Airport Parkway between Uplands and Hunt Club, an alternative design for cyclists, and an assessment of allowing truck activity. The list of long-term recommendations (beyond 5-years) included reconstruction of the Walkley interchange (to allow for a 28m clearance), and full movement of the Walkley Road interchange.

A summary memo indicating additional detail on the foregoing and providing the status of the various recommendations is also included within the full report in Appendix B – Supporting Reports.

2.6 Screenline Operations

The following Figure 2-16 depicts the existing relevant study area screenlines where the City currently collects annual classification and occupancy data.

As shown in Figure 2-16, the relevant screenlines intersecting the Airport Parkway are:

- SL 13 – CNR East with stations at Riverside Drive, Airport Parkway, Bank Street, Conroy Road, Hawthorne Road, and McCarthy Road; and
- SL 19 – Rideau River with stations at Billings Bridge (Bank Street), George Dunbar Bridge (Bronson Avenue), and George McIlwraith Bridge (Smyth Road).

There are no screenlines that intersect Lester Road.

The 2013 Screenline count data was obtained from the City and is included in the full report in Appendix B - Supporting Reports. The existing performance of the relevant study area screenlines depicted in Figure 2-16, is summarized below in Table 2-2.

Figure 2-16: Existing Study Area Screenlines

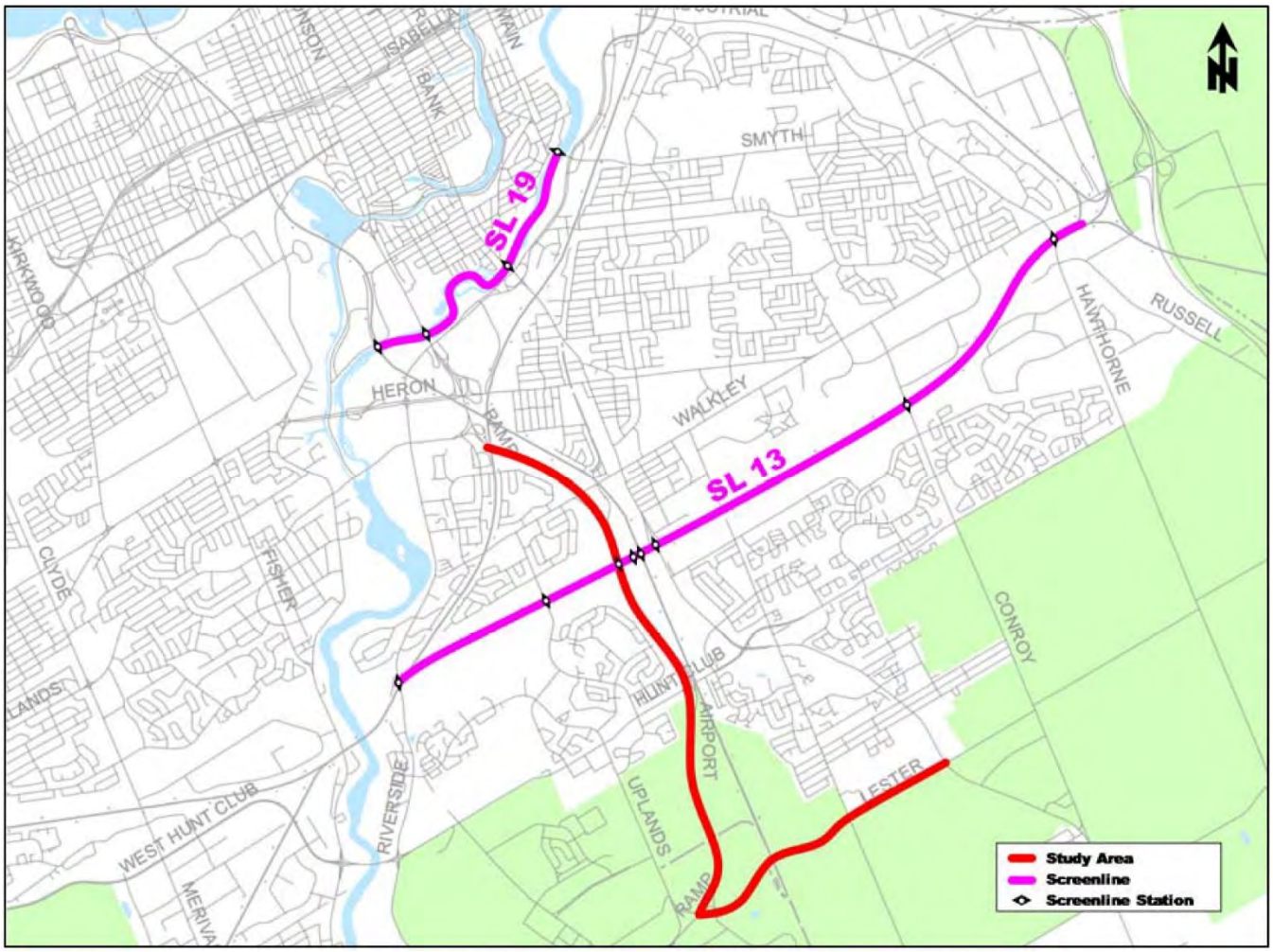


Table 2-2: Existing Screenline Performance

Screenline	Peak Directional Demand[1] (PCU)[2]		Directional Capacity[3] (PCU)	volume-to-capacity (v/c)	
	AM Peak	PM Peak		AM Peak	PM Peak
CNR East (SL #13)	8,472	10,405	10,400	0.81	1.00
Rideau River (SL#19)	3,852	4,875	5,670	0.68	0.86

1. 2013 volumes obtained from the City of Ottawa
2. PCU (Passenger Car Units) were assumed to be the sum of autos and 2 x heavy vehicles
3. Directional capacities were obtained from the City's 2008 Transportation Master Plan – Road Infrastructure Needs Study

As shown in Table 2-2, SL 13 is currently operating at capacity (v/c = 1.00) and SL 19 is operating at an acceptable Level of Service LoS 'D' (v/c = 0.86) during the afternoon peak hour. It can be seen that there is limited available spare capacity across these two screenlines.

Based on the CNR East Screenline 12-hour analysis, the classification and occupancy of vehicles travelling along the Airport Parkway is summarized in Table 2-3. The composition of traffic is noted to be predominantly passenger vehicles (85%) and taxis (10%), with very small contributions from any other

vehicle classifications including trucks and buses. The occupancy rate of the passenger vehicles is noted to average less than 1.10, which implies 9 of 10 vehicles are single occupant.

Table 2-3: Classification and Occupancy for Airport Parkway Station along SL 13 (12-hour)

Vehicle Type	Direction	Number	Percent of Total Vehicles	Occupancy	Occupancy Rate
Passenger Veh	Inbound	10,197	85%	11,129	1.09
	Outbound	10,793		11,781	
Taxis	Inbound	1,172	10%	1,513	1.25
	Outbound	1,452		1,768	
Light Trucks	Inbound	317	2%	347	1.09
	Outbound	315		344	
Heavy Trucks	Inbound	64	1%	73	1.10
	Outbound	87		94	
Buses	Inbound	44	1%	330	7.20
	Outbound	50		347	
Other	Inbound	79	1%	79	1.00
	Outbound	70		70	
Total Vehicles	Inbound	11,873	100%	13,471	1.13
	Outbound	12,767		14,404	
Cyclists	Inbound	49	-	52	-
	Outbound	75		79	
Pedestrians	Inbound	1	-	-	-
	Outbound	22		-	

2.7 Intersection/Interchange Operations

The following Table 2-4 provides a summary of existing traffic operations at study area intersections, based on the SYNCHRO (V8) traffic analysis software. Signalized study area intersections were assessed in terms of the volume-to-capacity (v/c) ratio and the corresponding Level of Service (LoS) for 'critical movements'. Signalized intersections were also assessed 'as a whole' based on a weighted v/c ratio and corresponding LoS. With respect to the Brookfield/Airport Parkway/Flannery roundabout, it was assessed in terms of delay and the corresponding LoS using the SIDRA capacity analysis software. The SYNCHRO and SIDRA model output of existing conditions is provided within the full report in Appendix B - Supporting Reports.

As shown in Figure 2-3, the existing traffic count at the Brookfield/Airport Parkway/Flannery intersection, as provided by the City of Ottawa, assumes a four-legged intersection. For the purposes of this assessment, this intersection was analyzed as a five-legged roundabout intersection, in which the volumes destined to the Airport Parkway were distributed 60% northbound/ 40% southbound during the morning peak hour and 40% northbound/60% southbound during the afternoon peak hour.

Table 2-4: Existing Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'as a whole'		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Bronson/Brewer	C(B)	0.74(0.69)	NBT(SBT)	14.5(11.5)	C(B)	0.72(0.68)
Brookfield/Flannery	A(B)	0.37(0.58)	NBR(SBT)	6.5(10.0)	A(A)	-
Airport Parkway/Walkley	A(A)	0.51(0.50)	NBR(WBT)	6.8(8.9)	A(A)	0.31(0.48)
Airport Parkway/Hunt Club	D(D)	0.84(0.88)	WBT(EBL)	32.4(36.7)	C(D)	0.79(0.85)
Uplands/Airport	A(B)	0.48(0.66)	WBT(SBL)	9.4(14.1)	A(A)	0.45(0.59)
Albion/Lester	F(D)	1.20(0.84)	NBL(SBT)	73.6(30.2)	F(C)	1.07(0.75)
Bank/Lester/Davidson	B(D)	0.61(0.81)	WBT(EBT)	13.6(15.7)	A(A)	0.40(0.52)
Alert/Airport/Uplands	B(B)	0.64(0.62)	WBR(SBL)	5.9(11.6)	A(A)	0.60(0.48)

Notes:
- Analysis of signalized intersections assumes a Peak Hour Factor (PHF) of 0.95 and a saturation flow rate of 1800 veh/h/lane.
- Brookfield/Flannery Roundabout intersection 'as a whole' analysis is based on delay.

As shown in Table 2-4, study area intersections 'as a whole' are currently operating at an acceptable LoS 'D' or better during both peak hours, with the exception of the Albion/Lester intersection during the morning peak hour, which is failing (LoS 'F'). Similarly, the 'critical movements' at study area intersection are currently operating at an acceptable LoS 'D' or better during both peak hours, with the exception of the northbound left-turn movement at the Albion/Lester intersection.

Between 2004 and 2007 a northbound through movement restriction was in place at the Albion/Lester intersection to restrict traffic from travelling through the Blossom Park Community (located north of Lester Road). Traffic data at this location was collected in 2014, which is long after the northbound through movement restriction was lifted.

2.8 Transportation Policies and Guidelines

The following sections summarize the transportation policies direction of the federal and municipal planning authorities including the National Capital Commission (NCC) and the City of Ottawa.

2.8.1 Federal Land Use Policy (National Capital Commission)

Planning in the study area is guided by three (3) federal land use policies issued by the National Capital Commission: the Plan for Canada's Capital, 1999, the Greenbelt Master Plan, 2013, and Joint Study to Assess Cumulative Effects of Transportation Infrastructure on the National Capital Greenbelt, 2012.

2.8.1.1 *NCC Plan for Canada's Capital (1999)*

The Plan for Canada's Capital (PCC) is the federal government's overarching statement on the planning and development of the National Capital Region. The Airport Parkway is designated in the PCC as a Capital Arrival and Scenic Entry Route. A Capital Arrival is a major route to and from the Capital and in this case the OMCIA. A Scenic Entry Route is a complementary route, usually in a built-up area, that offers scenic and/or alternative access route to the City's centre. While now owned by the City, the arrival role of the Parkway shall be maintained based on the following design considerations:

- Provision of high quality signage, protection of scenic views and natural elements and the enhancement of landscape quality and sensitive lightning should be employed on Capital Arrivals on and adjacent to federal lands;
- Collaboration with other jurisdictions to enhance the visitor's "Capital experience" at high-profile and high-volume arrivals, including the Airport, should be undertaken; and
- Consistent and high-quality design standards should be employed at Capital Arrivals.

2.8.1.2 *NCC Greenbelt Master Plan (2013)*

The Greenbelt Master Plan is one of several coordinating policy and development documents prepared by the NCC to guide both planning and the use of Federal Lands within the Greenbelt. One of the goals outlined in the Master Plan with respect to sustainable transportation and infrastructure involves ensuring that "environmental best management practices are applied in the design, operation and maintenance of existing infrastructure." Furthermore, the Plan highlights that new infrastructure within the Greenbelt should not be permitted "unless there is demonstration that there are no alternatives outside of the Greenbelt and no net loss will result to ecological or overall Greenbelt integrity."

The NCC emphasizes that preference will be given to sustainable, safe, and active transportation infrastructure that are in line with the vision, roles, and goals of the Greenbelt. Proponents of transportation structures should work closely with the NCC to ensure that arrivals to the Greenbelt provide both a symbolic and a distinctive sense of place. Moreover, the continuity of recreational pathways and natural links should be maintained or enhanced within the planning, design, and function of transportation infrastructure.

2.8.1.3 *Joint Study to Assess Cumulative Effects of Transportation Infrastructure on the National Capital Greenbelt (2012)*

The NCC and the City jointly undertook a study to assess the cumulative effects of transportation infrastructure on the Greenbelt. The study developed and implemented a cumulative effects framework and made recommendations for the study of future transportation projects.

Both the widening of the Airport Parkway and Lester Road are identified as projects to be included or allowed to proceed to implementation as part of the Greenbelt Master Plan and the City's Transportation Master Plan. The Airport Parkway was to be included on the basis that the "design would be subject to standard design, review and review processes and mitigation determined necessary by the Environmental Assessment Process". Lester Road was to be included subject to "measures that minimize, compensate or offset contributions to cumulative effects on the Greenbelt, with the possibility of designation to "Not Include" in cases where specific mitigative measures cannot be implemented satisfactorily".

2.8.2 Municipal Planning Documents

Guidance for transportation planning in the City of Ottawa is provided in the City of Ottawa Official Plan (2013) and the Transportation Master Plan (2013) as well as the Cycling and Pedestrian Plans (2013).

2.8.2.1 *City of Ottawa Official Plan (2013)*

The City Official Plan provides a vision for the future growth of the City and policy framework to guide its physical development within the planning horizon (to 2031). The Airport Parkway and Lester Road fall under a number of transportation related designations as noted in Table 2-5.

Table 2-5: Planning Designations for the Airport Parkway and Lester Road

Schedule	Designation	Location of Overlap or Intersection with Airport Parkway	Location of Overlap or Intersection with Lester Road
C – Primary Urban Cycling Network	On-road cycling routes	Along entirety of Parkway	Along entirety of Lester Road
	Off-road cycling route / multi-use pathways	Intersects with Parkway at east-west rail corridor	Intersects with Lester Road at north-south rail corridor
E – Urban Road Network	Existing Arterial	Along entirety of Parkway	Along entirety of Lester Road
I – Multi-Use Pathways and Scenic-Entry Routes (Urban)	Scenic Entry Route	Along entirety of Parkway	n/a
	Off-Road Multi-Use Pathway (Community Route)	Along entirety of Parkway	Intersects with Lester Road at Airport Parkway, north-south rail corridor and Sawmill Creek
	Off-Road Multi-Use Pathway (City-wide Route)	Intersects with Airport Parkway at east-west rail corridor	Intersects with Lester Road at north-south rail corridor

As described in Annex 1 of the Official Plan: Road Classification and Right-of-Way Protection, the Official Plan describes Arterial Roads as *"the major roads in the City that carry the largest traffic volumes over the longest distances"*. Vehicular access to adjacent properties is to be controlled and provide a high degree of connectivity between land uses and places along and across the route. The OP notes that for roadways such as the Airport Parkway, the City may apply different design standards with regard to access and setbacks to development.

Scenic Entry Routes are networks that link major tourist, recreation, heritage, and natural environment destinations in and beyond Ottawa. This system is under the jurisdiction of the federal plus provincial and municipal governments. Multi-Use Pathways provide a primarily off-road network for pedestrians and cyclists in green and open space corridors. The pathways are part of a green space network and provide connections among communities and major tourism, cultural heritage and green space features. Many pathways are owned and maintained by the NCC.

The OP identifies a right-of-way (ROW) protection policy width for the Airport Parkway as "ECP" (Existing Corridor Protection). Therefore, any adjacent lands necessary for road widenings to accommodate additional travel lanes (e.g. vehicle, bus, bike, etc.), medians and/or sidewalks will have to be acquired in consultation with the NCC. With regard to Lester Road, the OP identifies a ROW protection policy width of 37.5 m (between Albion Road and Bank Street) and "G" (between Uplands Drive and Albion Road). A "G" ROW width to be protected is similar to the previously mentioned "ECP" protection policy, in that the ROW width to be protected is determined by the acquisition of adjacent lands necessary to accommodate roadway/infrastructure requirements in consultation with the NCC. As noted in the OP, in areas where the Greenbelt is only on one side (ie. between Albion and Bank), a 5.0m widening should be requested along the Greenbelt side to accommodate a rural cross-section.

2.8.3 Transportation Master Plan

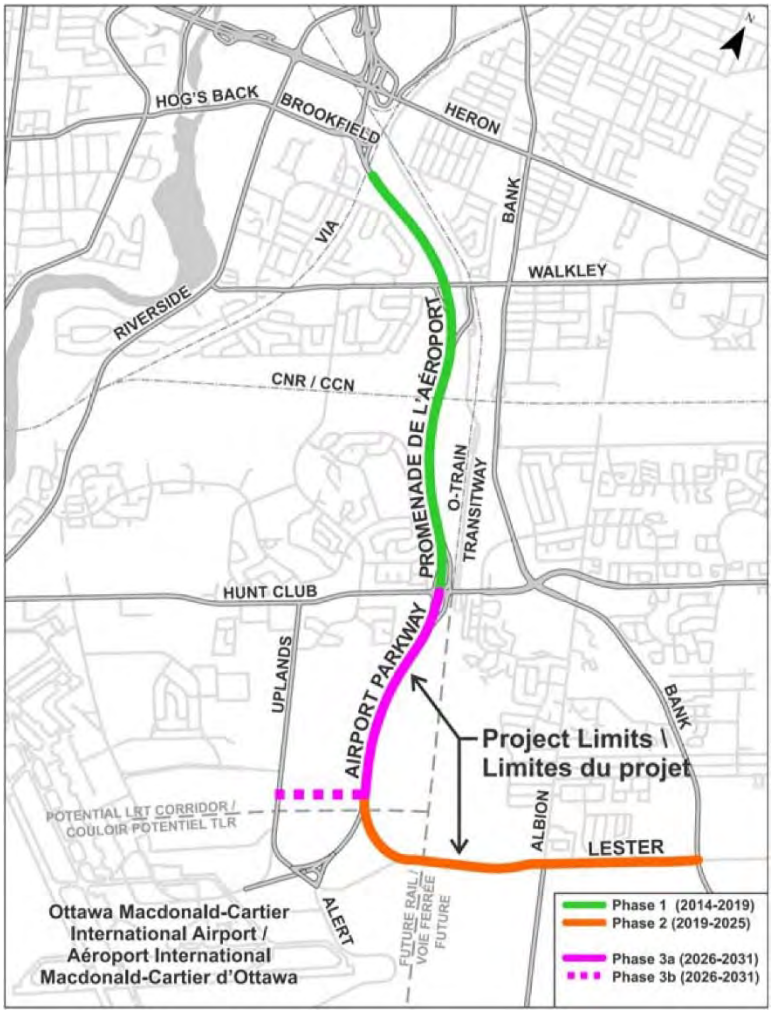
The subject Airport Parkway (between Brookfield Road and Hunt Club Road), Lester Road (between the Airport Parkway and Bank Street) and the Airport Parkway (between Hunt Club Road and Lester Road), are identified for widening in the City's TMP as Phase 1 (2014-2019), Phase 2 (2020 - 2025) and Phase 3 (2026 - 2031) affordable City projects, respectively.

The project rationale and relevant details identified in the TMP include:

- Airport Parkway (between Brookfield Road and Hunt Club Road) - *Phase 1 project*; widen undivided two-lane rural arterial to a divided four-lane rural arterial; accommodates increasing traffic volume and improves access to and from the Airport;
- Lester Road (between the Airport Parkway and Bank Street) - *Phase 2 project;* widen undivided two-lane rural arterial to an undivided four-lane rural arterial; accommodates growth in Riverside South and Leitrim and diverts traffic from Albion Road away from Blossom Park;
- Airport Parkway (between Hunt Club Road and re-aligned Airport Parkway) - *Phase 3 project;* widen undivided two-lane rural arterial to a divided four-lane rural arterial; accommodates growth in Riverside South and Leitrim and improves access to the Airport;
- Airport Parkway (former Airport Parkway to Uplands Drive) - *Phase 3 project*; new divided four-lane rural road; accommodates growth in Riverside South and Leitrim and improves access to the Airport.

The project phasing as identified in the current TMP for the Airport Parkway and Lester Road projects are illustrated in Figure 2-17.

Figure 2-17: Project Phasing



Other planned area roadway improvements identified as affordable City projects in the TMP include:

- Bank Street widening from Leitrim Road to Blais Road - *Phase 2 project; and*
- Bank Street widening from Blais Road to Rideau Road - *Phase 3 project.*

It is noteworthy that bus/high occupancy vehicle (HOV) lanes are proposed for the Airport Parkway (between Hunt Club Road and the OMCIA) as part of the affordable rapid transit/transit priority network (TMP Table A2). It is envisioned that with the planned widening to four lanes, and in lieu of rapid transit serving the Airport, the outside lanes will be used for transit, taxis and HOV's (during peak periods according to TMP Exhibit 6.2).

These planned transportation network improvements (depicted in Figure 2-18) will provide additional north-south capacity, which will be necessary to accommodate the south Ottawa growth areas (i.e., Riverside South, Findlay Creek, Greely, etc.).

Other planned area roadway/capacity improvements identified in the City ultimate road network concept (beyond 2031) include:

- Hunt Club Road widening;
- Albion Road widening; and
- New east-west arterial, south of Leitrim Road.

Figure 2-19 depicts the City's ultimate road network concept plan in the vicinity of the Airport Parkway.

Figure 2-18: Transportation Master Plan – 2031 Affordable Road Network

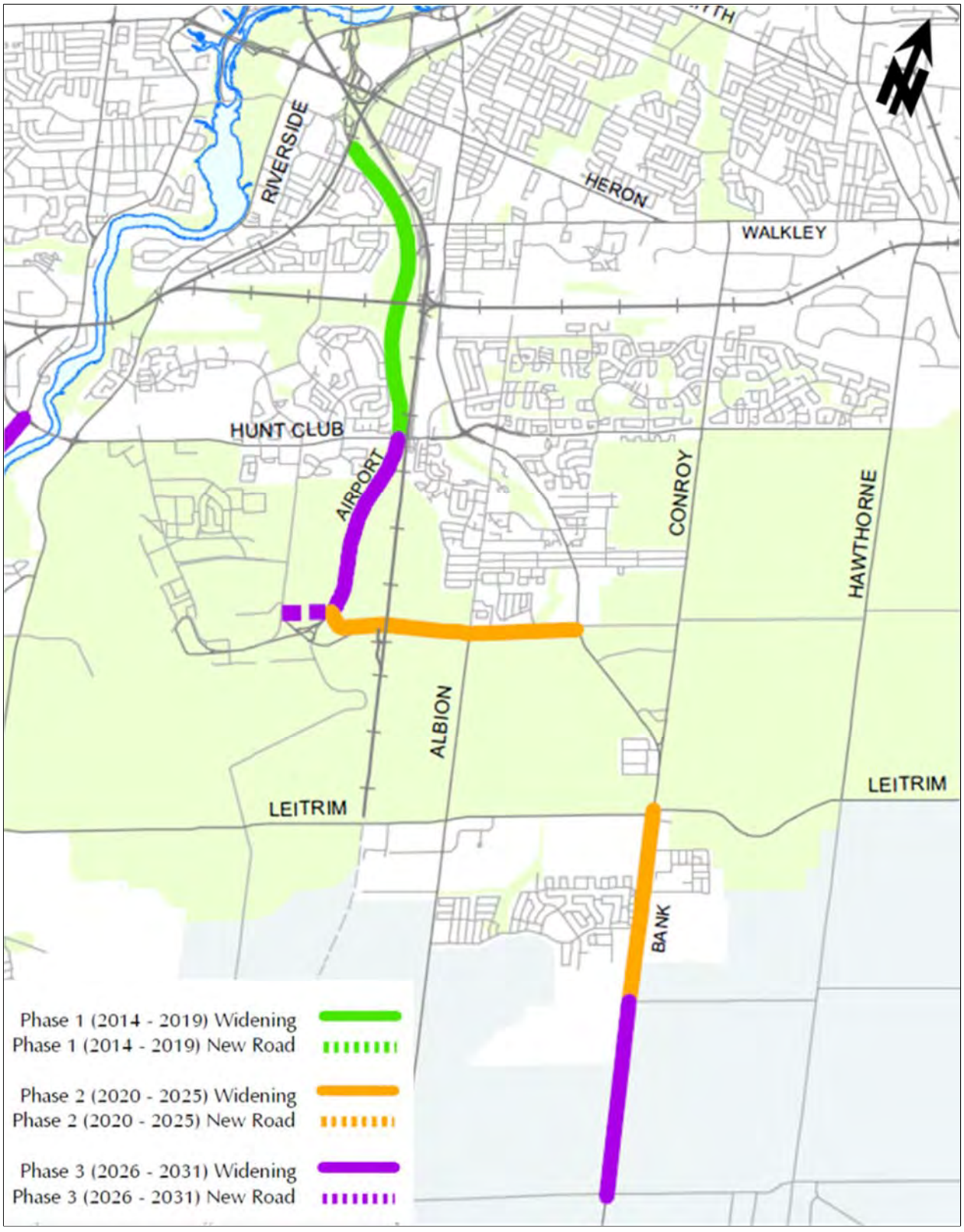
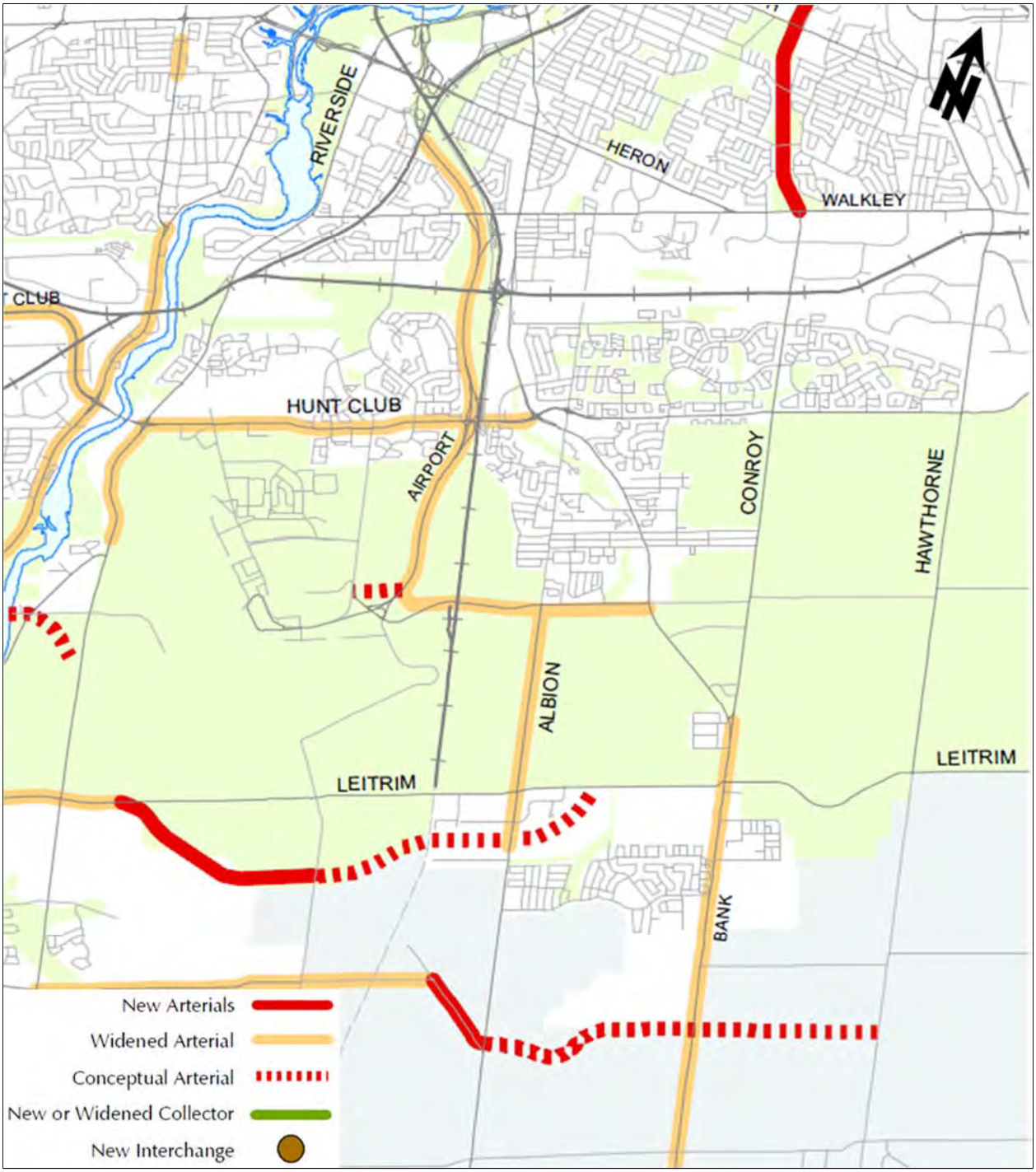


Figure 2-19: Transportation Master Plan – 2031 Ultimate Road Network

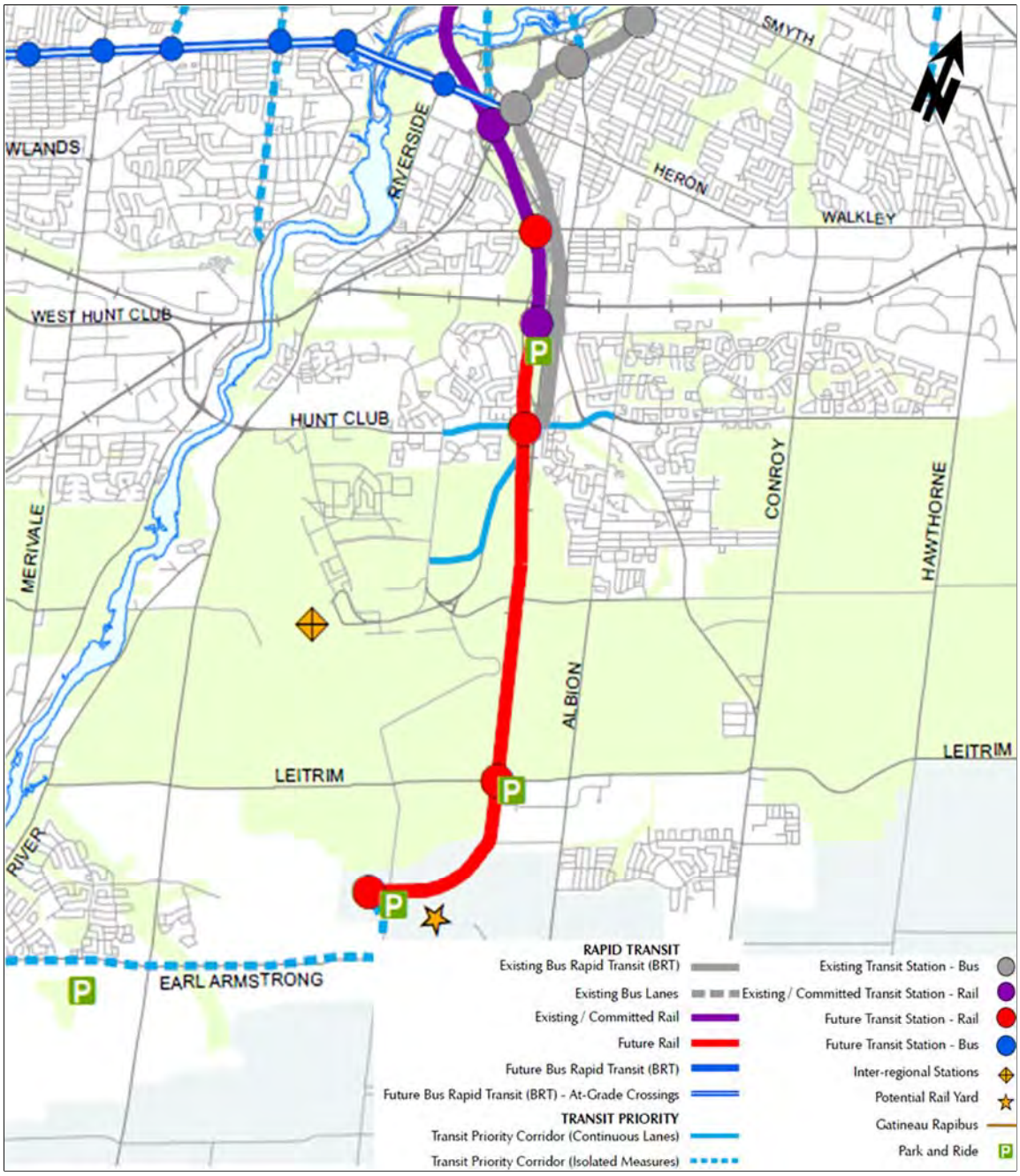


With regard to planned area transit improvements, the affordable rapid transit/transit priority network concept depicted in the City's TMP includes:

- An extension of the existing O-Train corridor to Riverside South, with stations at Hunt Club Road/Airport Parkway, Leitrim Road and just north of Earl Armstrong Road;
- Transit priority along the Airport Parkway south of Hunt Club Road to the Airport (peak period bus/high occupancy vehicle (HOV) lanes as part of the widening to 4 lanes, with the outside lanes used of transit, taxis and HOV's); and
- Transit priority along Hunt Club Road between Uplands Drive and Albion Road.

Figure 2-20 depicts the City's affordable rapid transit/transit priority network concept plan.

Figure 2-20: Transportation Master Plan - 2031 Affordable Rapid Transit & Transit Priority Network

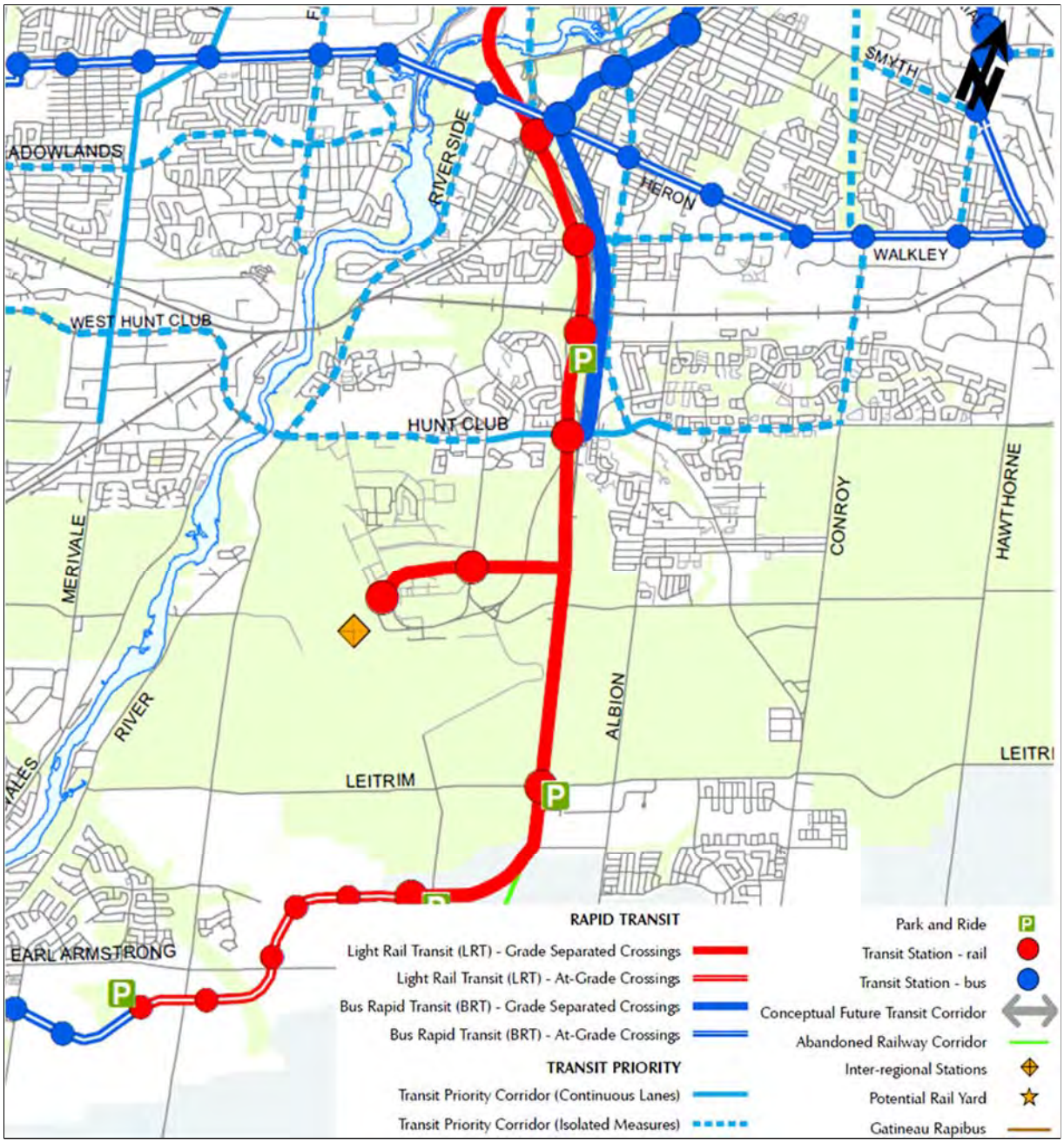


Other planned area transit improvements identified in the City ultimate network concept (beyond 2031) include:

- Transit priority along Hunt Club Road between Woodroffe Avenue and Conroy Road;
- LRT extension, including two new stations serving the Macdonald-Cartier International Airport and the EY Convention Centre; and
- LRT extension south, towards the Riverside South Community.

Figure 2-21 depicts the City's ultimate rapid transit/transit priority concept plan.

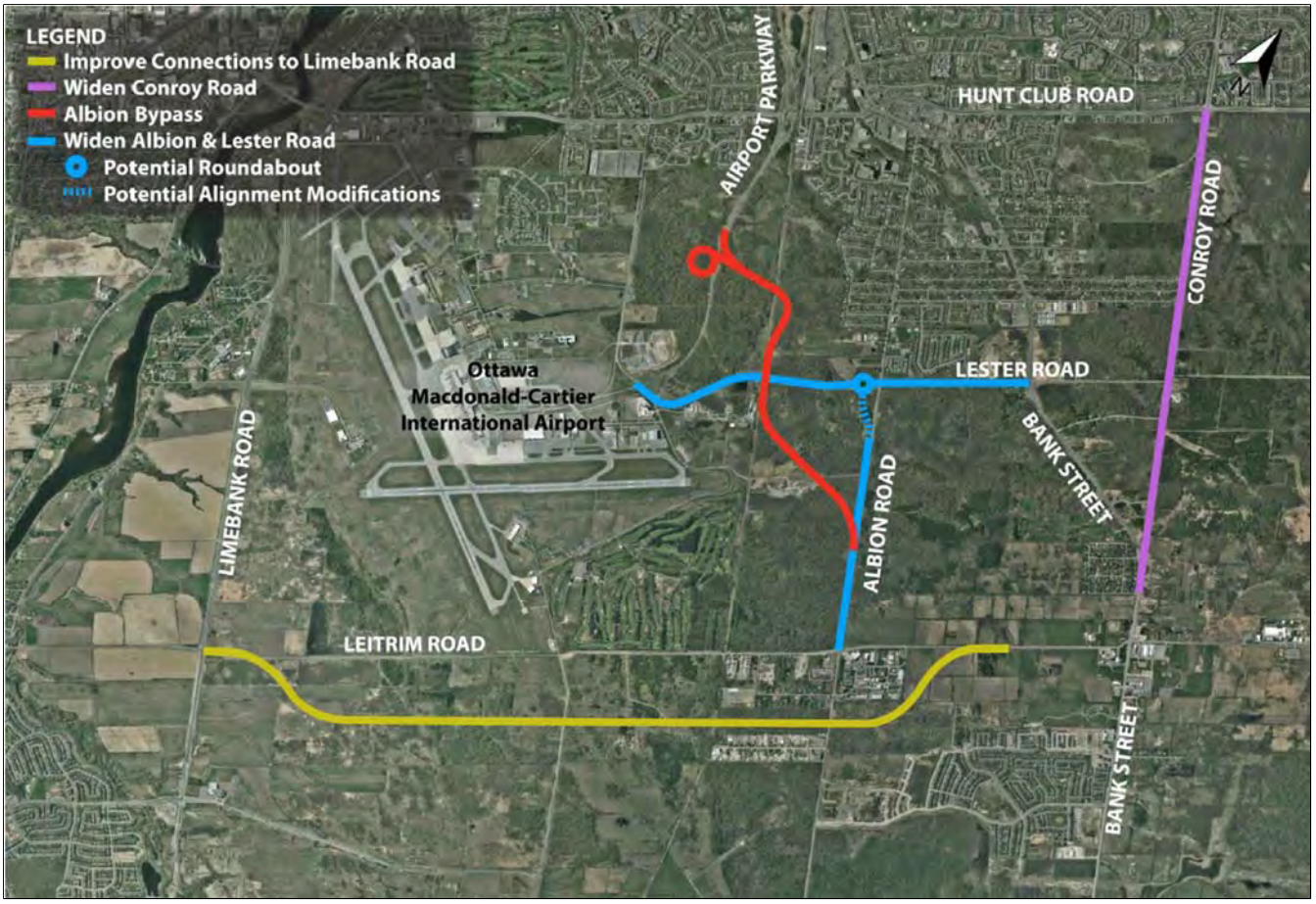
Figure 2-21: Transportation Master Plan – 2031 Ultimate Rapid Transit & Transit Priority Network



2.8.3.1 *South Urban Community*

According to the Road Network Development Report (by IBI Group - September 2013) prepared in support of the TMP, given the recommended 2008 TMP road network changes and the projected increase growth in the South Urban Community, Albion Road and Lester Road are projected to operate above capacity by 2031. These two roads represent the most direct access to the Airport Parkway and the forecasted congestions along these routes would "limit the usefulness of downstream capacity increases to the Airport Parkway." As such, five road improvement options were analysed within the IBI Report and are illustrated in Figure 2-22.

Figure 2-22: Road Network Development Report - Alternative South Urban Road Improvements



According to the findings outlined in the Road Network Development Report, the most cost-effective solution that solved the forecasted capacity issues was the widening of Lester Road between the Airport Parkway and Bank Street (noted in blue, including a potential roundabout at Albion/Lester). This recommendation is included in the 2013 TMP update as shown herein in Figures 2-18 and 2-19. The Albion Road Bypass (noted in red) was not recommended as a solution in the Road Network Development Report as it represents considerable cost and potential environmental concerns, however, it is noted as being a beneficial solution to the transportation network.

As part of the recommended widening of Lester Road, a roundabout was identified at a re-aligned Lester/Albion intersection. It is understood that the rationale for the easterly realignment of Albion Road was to minimize the potential for north-south "cut-through" traffic impacting the Blossom Park Community, although it is uncertain how the north leg of Albion Road would accommodated as part of this roundabout

concept. Roundabout control at this intersection could potentially be accommodated, however, more analysis is required to assess the impact of the heavy northbound left-turn volume during the morning peak hour.

2.8.4 Cycling and Pedestrian Plan

The 2013 Ottawa Cycling Plan identifies Lester Road and the Airport Parkway as ultimate spine routes and a future multi-use pathway is identified along the west side of the Airport Parkway between Uplands Drive and Hunt Club Road. The Airport Parkway provides access to/from a number of City-wide cycling routes (e.g. a number of multi-use pathways, Hunt Club Road, Walkley Road, Riverside Drive, Heron Road, etc.). Currently, existing area cycling facilities include paved shoulders along the Airport Parkway, a multi-use pathway system along the east side of the Airport Parkway between Walkley Road and Hunt Club Road, and on-road bike lanes, east of the Airport Parkway.

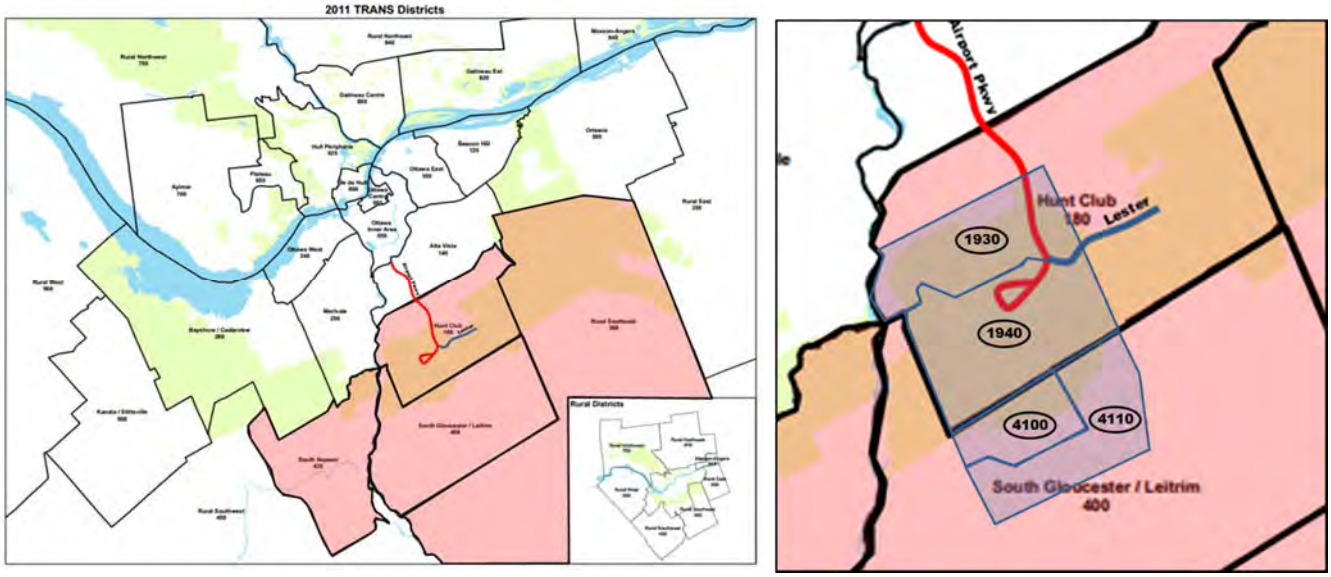
Connecting pedestrians and cyclists between the off-road pathway and the west side of the Airport Parkway, a pedestrian/cyclist bridge was completed in November 2014 across the Airport Parkway just north of Hunt Club Road.

2.9 Projected Transportation Conditions

2.9.1 TMP Land Use Assumptions

Population, household and employment data are used as the basis for the travel demand within the TRANS regional model, which helps to inform the infrastructure requirements identified in the TMP. The demographic data assumptions assumed as part of the TMP are summarized in Table 2- 6 for the major Districts in close proximity to the Airport Parkway and Lester Road, including Hunt Club, South Gloucester/Leitrim, Rural Southeast, and South Nepean. These are shown in Figure 2-23.

Figure 2-23: TRANS Model Traffic Districts/Zones



As shown in Table 2-6, there are notable increases in population/households by year 2031 within the South Gloucester/Leitrim District, as well as significant increases in employment by 2031 within the Hunt Club and South Gloucester/Leitrim Districts. Note that the “Airport Lands” span these two Districts, and the Airport Parkway and Lester Road are integral components of the transportation network serving them. There is also

considerable growth in population/households and employment within the South Nepean District, which is located adjacent to the Airports Lands but west of the Rideau River. Travel to/from this District is considered to have increased relevance to the travel demand on the Airport Parkway with the recent opening of the Strandherd-Armstrong Bridge.

Table 2-6: TRANS Model Land Use Assumptions (Districts)

Characteristic	Traffic District	Time Horizon		Difference
		2011	2031	
Total Population	Hunt Club	54,104	56,291	2,187
	South Gloucester / Leitrim	17,601	37,784	20,182
	Rural Southeast	28,843	31,488	4,644
	South Nepean	72,748	108,443	35,695
Total Households	Hunt Club	21,136	21,736	600
	South Gloucester / Leitrim	6,236	13,547	7,311
	Rural Southeast	9,316	11,541	2,225
	South Nepean	26,263	39,871	13,608
Total Employment	Hunt Club	22,273	24,969	2,696
	South Gloucester / Leitrim	7,340	10,360	3,020
	Rural Southeast	5,242	4,827	-415
	South Nepean	11,946	22,280	10,334

A more detailed review of the assumed demographic data set was completed for the lands immediately adjacent to the south of the Airport Parkway, namely Traffic Zones 1930, 1940, 4100 and 4110 as shown in Figure 2-23 (blow-up). These lands are considered to form the Airport Employment Lands. The TRANS model analysis for the Airport Lands assumes the projected land use assumptions outlined in Table 2-7 for the year 2031.

Table 2-7: TRANS Model Land Use Assumptions (Airport Employment Lands)

Characteristic	Traffic Zone	Time Horizon		Difference
		2011	2031	
Total Population	1930	4,055	4,373	318
	1940	0	0	-
	4100	0	0	-
	4110	0	3,118	3,118
TOTAL		4,055	7,491	3,436
Total Households	1930	1,731	1,731	-
	1940	0	0	-
	4100	0	0	-
	4110	0	1,047	1,047
TOTAL		1,731	2,778	1,047
Total Employment	1930	3,066	5,416	2,350
	1940	5,153	3,462	-1,691
	4100	120	1,639	1,519
	4110	3	651	648
TOTAL		8,342	11,168	2,826

It can be seen in Table 2-7 that the population immediately west/south of the Airport Parkway is projected to increase by approximately 3,500 persons, the amount of employment is projected to increase by approximately 2,800 jobs, and the housing units are projected to increase by approximately 1,000 units.

However, the 2031 TRANS model employment projections from Table 2-7 are noted as considerably less than the employment projections outlined in the OMCIAA Master Servicing and Transportation Strategy Report (Delcan, a Parsons Company, 2011) for the same area. Within the report a "development test scenario" was developed (included with full report in Appendix B - Supporting Reports) which forecasts a total of 17,765 jobs within the Airport lands by 2031. This yields a net increase of 9,423 jobs by 2031. Traffic generated by these additional jobs is outlined in Section 2.2 and included in the analysis herein.

2.9.2 TRANS Model Projections

The TRANS Model is a regional travel demand forecasting model maintained by the City of Ottawa to reflect existing trip patterns and travel choices, and to simulate the effects of future scenarios featuring varying growth, alternative transportation facilities, services and policies. The model is currently calibrated to the AM peak hour only. It is important to note that regional models are typically calibrated to the screenline level, and therefore using the model to simulate volumes on individual links (or individual turning movements) must be done so understanding the model's limitations/constraints. Relative changes in forecasted volumes can be used as a good indicator of general trends, however.

The baseline (year 2011) and future (year 2031) traffic projections for the Airport Parkway (between Walkley Road and Lester Road) and Lester Road (between Airport Parkway and Bank Street), according to the TRANS model, are summarized in Table 2-8. These projections are based on the land use assumptions outlined in the previous section, and reflect the Affordable Transportation Network identified in the TMP (see Figures 2-18 and 2-19).

Table 2-8: TRANS Model Projections (AM Peak Hour)

Road	Link	2011		2031		Percent Increase (Per Annum)	
		NB	SB	NB	SB	NB	SB
Airport	Walkley - Hunt Club	1115	716	1307	715	0.80%	-
	Hunt Club - Lester	548	382	704	346	1.26%	-
		WB	EB	WB	EB	WB	EB
Lester	Airport - Albion	871	319	1277	315	1.93%	-
	Albion - Bank	440	379	682	179	2.22%	-

As shown in Table 2-8, traffic volumes along the Airport Parkway and Lester Road are projected to increase by approximately 1% to 2% per annum by 2031 in the peak direction (northbound/westbound). Volumes in the counter peak direction (southbound/eastbound) are projected to remain stagnant or decrease by 2031 according to the TRANS model projections. The projected volume increases on the Airport Parkway and Lester Road are considered to be very modest given the extent of forecasted development, and are assumed to be a reflection of the increased transit modal share resulting from the extension of the O-Train southerly prior to 2031.[1]

[1] At the CNR East Screenline, the projected 2031 transit modal share in the AM peak is just over 30% (an increase from the existing of approximately 25%). At the Leitrim Screenline, the projected 2031 transit modal share in the AM peak of just over 20% (an increase from the existing of less than 10%).

It is also important to note that the 2031 TRANS model projected traffic volumes along the Airport Parkway and Lester Road are less than the existing volumes outlined in Figure 2-3. As such, for the purpose of this analysis, the existing volumes along these roadways were increased by 1% per annum in the peak direction (northbound in the morning and southbound in the afternoon) for the year 2031. This traffic volume growth represents the TRANS model projected increases for 2031 based on the existing traffic counts.

2.9.2.1 *Refinement of the TRANS Model Projections*

As mentioned previously, according to the OMCIAA Master Servicing and Transportation Strategy Report approximately 17,765 jobs are projected for the Airport Lands by 2031. According to the Transportation Strategy Report, this increase in employment (approximately 9,423 additional jobs) will generate approximately 1,175 veh/h along the Airport Parkway and 350 veh/h along Lester Road during the afternoon peak hour. It is important to note that approximately 2,800 of these additional jobs are already accounted for in the TRANS model projections. As such, traffic projections for the additional 6,600 jobs, not included in the TRANS model, were calculated based on the projections from the Transportation Strategy Report to be approximately 660 and 200 veh/h along the Airport Parkway and Lester Road, respectively, during the afternoon peak hour. These vehicle projections assume a 35% to 50% non-auto modal share as outlined in the OMCIAA Transportation Strategy Report (2011), which is considered generally consistent with the targets identified in the 2013 TMP Update.

The projected increase in traffic volumes within the study area generated by increased population and employment are illustrated as Figure 2-24. These volumes represent an approximate 1% annual growth rate through 2031 consistent with the TRANS model forecasts, as well as the projected traffic volumes associated with the additional anticipated employment outlined in the OMCIAA Transportation Strategy Report.

It is also important to recognize that the TRANS model data does not account for trips to/from the Airport related to air travel. According to the Airport Traffic Forecast and Demand–Capacity Assessment (SNC Lavalin, 2014), passengers forecasts to/from the Ottawa Airport are projected to increase by approximately 2.9% per annum on average through to year 2030. The existing traffic volumes travelling to/from the Airport are estimated to be approximately 250 to 300 veh/h and 625 to 700 veh/h during the morning and afternoon peak hours respectively. At a rate of 2.9% per annum until 2031, the projected traffic volumes travelling to/from the Airport are expected to increase by approximately 150 to 200 veh/h and 375 to 425 veh/h during the morning and afternoon peak hours, respectively. This derivation assumes negligible change to the existing transit modal share to/from the Airport related to passenger travel of approximately 5%. This projected increase in traffic volume is illustrated in Figure 2-25. Should LRT be extended into the Airport Lands sooner than assumed within the TMP (currently forms part of the Ultimate RTTP Network, but not the Affordable), the transit modal share related to passenger activity to/from the Airport would be expected to increase).

The total 2031 projected volumes within the study area were derived by superimposing projected traffic volumes increases (Figures 2-24 and 2-25) onto existing traffic volumes (Figure 2-3). Total projected volumes are illustrated as Figure 2-26.

Figure 2-24: Projected Increase in Traffic Volumes Related to Development

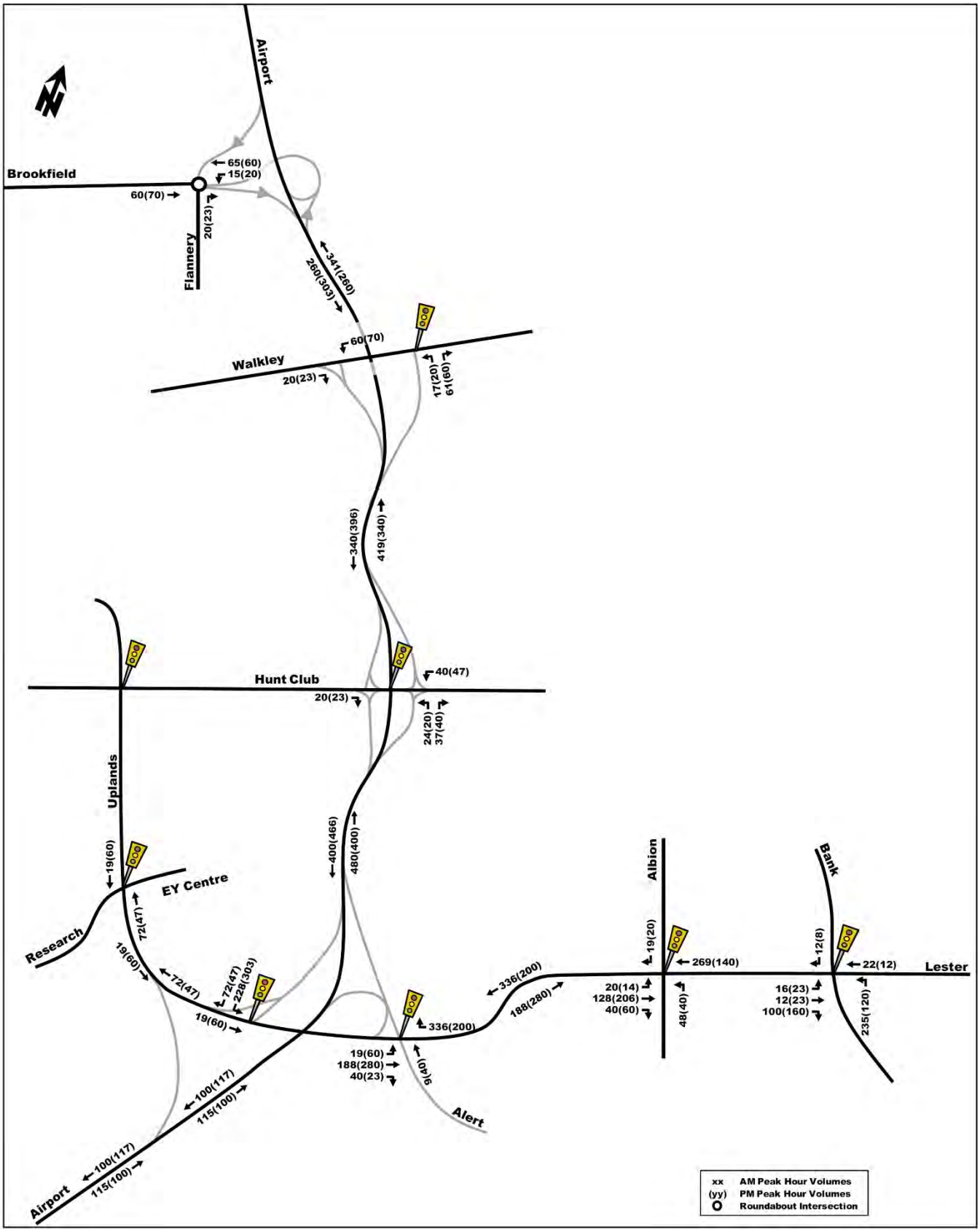


Figure 2-25: 2031 Projected Increase in Traffic Volumes Related to Growth in Airport Passengers

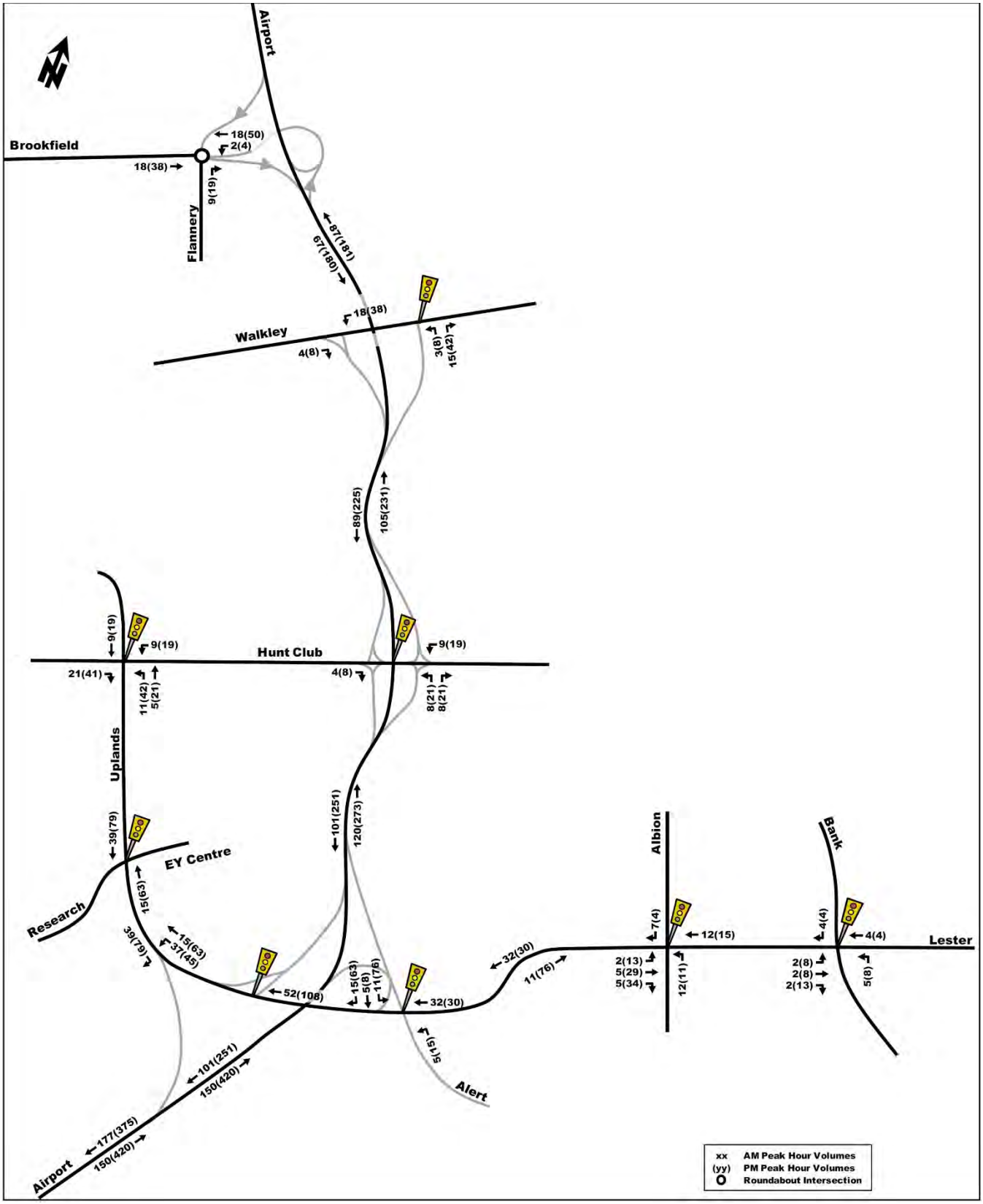
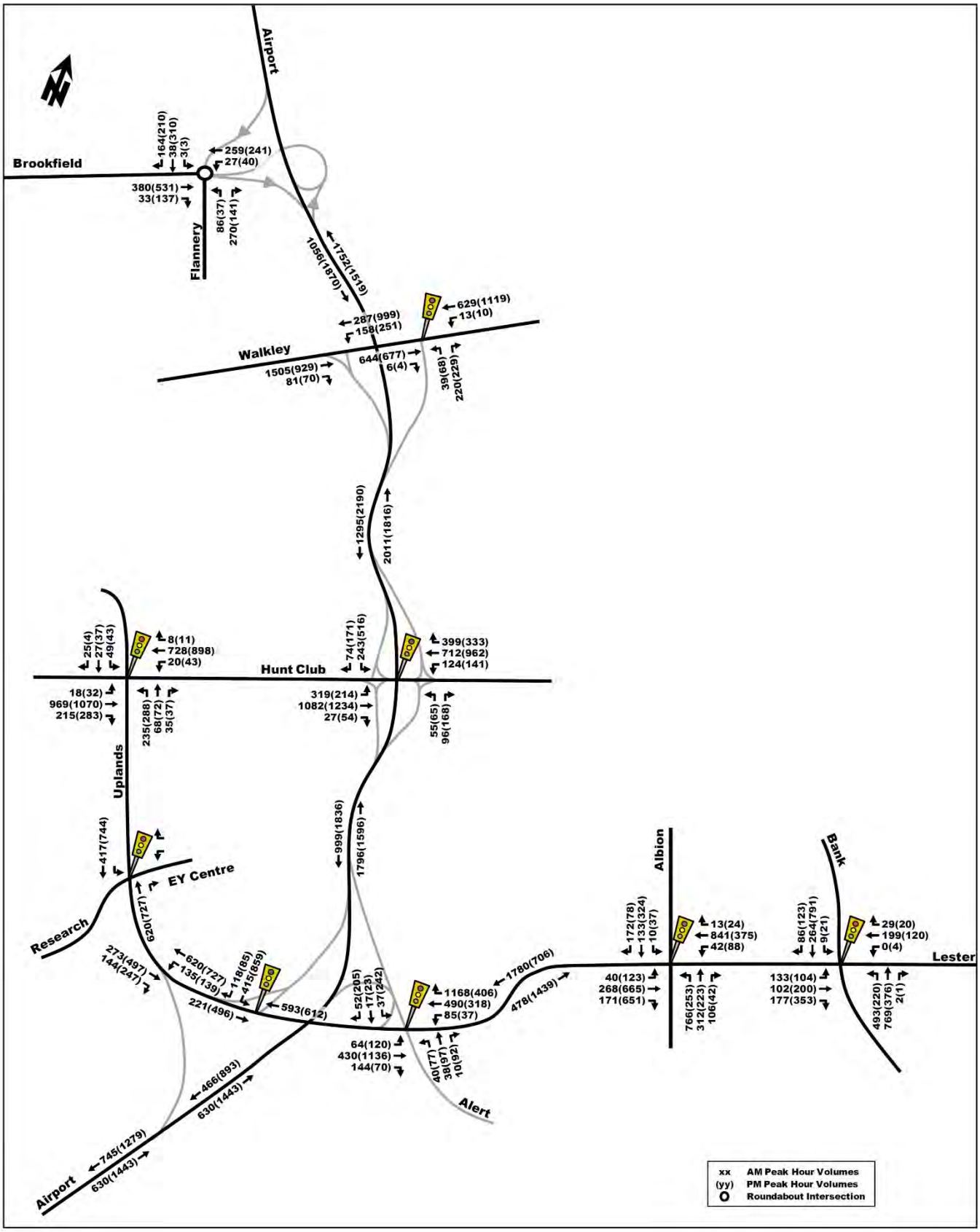


Figure 2-26: 2031 Total Projected Traffic Volumes



2.9.3 Projected Performance

2.9.3.1 *Screenline Operations*

The following Table 2-9 outlines the projected Screenline 13 performance based on the 2011 TRANS model, 2031 TRANS model, and the projected Airport Parkway volumes calculated herein.

Table 2-9: Projected Peak Hour Screenline 13 Performance

Scenario	Peak Directional Demand		Directional Capacity[1] (PCU)	v/c	
	AM Peak	PM Peak		AM Peak	PM Peak
Existing Ground Counts	8,472	10,405	10,400	0.81	1.00
2011 TRANS Model	7,834	-	10,400	0.75	-
2031 TRANS Model	8,418	-	10,400	0.81	-
2031 TRANS Model + Modified Projected Airport Pkwy Volumes	9,122	-	10,400	0.88	-

1. Directional capacities were obtained from the City's 2008 Transportation Master Plan – Road Infrastructure Needs Study. Assumes no Airport Parkway widening.

As shown in Table 2-9, the projected performance based on the 2011 and 2031 TRANS model morning peak hour projections in terms of v/c ratio is 0.75 and 0.81, respectively. The existing v/c ratio for Screenline 13 according to the existing ground counts is 0.81.

The projected Airport Parkway volumes derived herein were then added to the 2031 TRANS model volumes to reflect the additional traffic volumes generated by the forecasted employment within the Airport Lands and the growth in Airport passenger traffic. The resulting screenline performance reveals that SL 13 is projected to operate acceptably by 2031 with a v/c of 0.88 during the morning peak hour.

However, when assessing the existing ground counts during the afternoon peak hour, the screenline is currently operating at capacity (v/c=1.00). As TRANS model projections exist only for the morning peak hour, the afternoon peak hour screenline performance must be estimated. Should the forecasted increase in travel demand of almost 1,300 vehicle in the morning peak hour be added to the existing ground counts during the afternoon peak hour, the resulting v/c at 2031 would be approximately 1.12 (LoS 'F'). Given the existing screenline is operating at capacity during the afternoon peak hour, it can be reasonably concluded that without widening, the screenline does not provide the necessary road capacity to satisfy the projected future travel demand.

2.9.3.2 *Peak Period Traffic Volumes*

The concept of peak period assessment has also been included in this analysis, which is consistent with the methodology outlined in the current City of Ottawa TMP. This approach uses volume projections based on the average hour within the 2.5 hour peak period rather than the overall highest hour. It is understood that the peak period volume concept should be used as the basis of long-term network planning decisions, but that the more traditional peak hour analysis is most appropriate when considering geometric design (assuming no right-of-way constraints) and traffic operations.

To roughly estimate average hourly volume over 2.5 peak period, the peak hour volume can be multiplied by a region-wide expansion factor of 2.1 and divided by 2.5 (resulting in a typical factor of 0.84, which represents the relationship between the average hour within the peak period and the busiest peak hour).

This relationship represents an average condition, and is not necessarily indicative of the relationship within individual corridors.

Based on the existing volume count data at Airport Parkway station for SL 13 (CNR East), it can be seen that this factor is 0.93 and 0.98 during the morning and afternoon peak hours (peak direction), respectively. Recent intersection turning movement counts at the Airport Parkway/Lester intersection reveal factors of 0.91 and 0.96 in the morning and afternoon peaks, respectively, whereas at the Albion/Lester intersection the factors are 0.90 and 0.92. These results imply that the average hour during the peak period is quite similar to the busiest peak hour, indicative of less peaking on the Airport Parkway and Lester Road Corridors than other road corridors within the City.

Applying these factors to the ultimate forecasted peak directional demands crossing the CNR East Screenline 13 of 9,122 and 11,693 vehicles at 2031,during the morning and afternoon peak hours, the resulting v/c ratio would be 0.82 (instead of 0.88) and 1.10 (instead of 1.12), respectively.

Table 2-10 in the following section provides both the standard peak hour and modified volumes as a result of applying the above-noted factors.

2.9.3.3 *Volume Forecasts on Airport Parkway and Lester Road*

The following Table 2-10 outlines the peak directional volume and AADT within the study area and the corresponding assumed capacity along each segment of roadway.

Table 2-10: 2031 Projected Traffic Volumes – Peak Hour, Modified Peak Hour and AADT

Road Segment	Peak Hour Peak Directional Volume (veh/h)	Modified (1) Peak Hour Peak Directional Volume (veh/h)	Assumed Capacity (veh/h per lane)	AADT (two-way)
Airport Parkway				
• North of Hunt Club Road	2,400	2,230 (0.93)	1,600	47,000
• Hunt Club Road to Lester Road	1,800	1,760 (0.98)	1,600	36,000
• South of Lester Road	1,450	1,350 (0.93)	1,200	27,000
Lester Road				
• Airport Pkwy to Albion Road	1,800	1,640 (0.91)	1,200	22,000
• Albion Road to Bank Street	900	810 (0.90)	800	13,000
Notes (1) Modified = average hourly demand during the peak period; factor computed using existing traffic data at nearby location; values rounded to nearest 10 veh/h.				

The assumed per lane capacity of the Airport Parkway of up to 1,600 veh/h per lane noted in Table 2-10 is generally consistent with the assumptions of the TRANS model. The 1,600 veh/h per lane capacity range of the Airport Parkway north of Lester reflects the parkway setting with controlled access, whereas the 1,200 veh/h per lane capacity range south of Lester reflects the introduction of traffic signal control and decrease

in posted speed along this segment of roadway. For comparison, the existing volumes along the Airport Parkway were observed to be approximately 1,200 veh/h north of Lester Road and approximately 900 veh/h south of Lester Road.

For Lester Road, the assumed maximum per lane capacity of up to 1,200 veh/h, between the Airport Parkway and Albion, is consistent with the existing volumes experienced today along this section of Lester Road. This maximum value appropriately reflects the capacity of an arterial road in a rural setting with limited access driveways. At the low end, the TRANS model has an assumed capacity of 800 veh/h, which is considered appropriate for the segment between Albion and Bank where there are some residential driveways and parking on the shoulders approaching Albion Road. On this basis, the assumed capacity of Lester Road has been established as approximately 1,200 veh/h (west of Albion), and approximately 800 veh/h (east of Albion) for the purposes of this assessment.

It can be seen in Table 2-10 that the projected peak hour traffic volumes (and projected modified peak hour traffic volumes) are expected to exceed the assumed roadway capacity on the Airport Parkway north of Lester Road, with the capacity deficit ranging between 200 and 800 veh/h. The segment of the Airport Parkway south of Lester Road that provides direct access to the Airport area is also expected to exceed the assumed existing roadway capacity.

On Lester Road, the projected peak hour traffic volumes (and projected modified peak hour traffic volumes) between the Airport Parkway and Albion Road are expected to exceed the assumed roadway capacity, with a projected capacity deficit of approximately 600 veh/h. The segment of Lester Road east of Albion Road is expected to exceed capacity with a projected capacity deficit of approximately 100 veh/h assuming peak hour volumes (and essentially no deficit assuming projected modified peak hour traffic volumes)[2].

Northbound travel demand accessing Lester Road may do so via either Albion Road or Bank Street. The existing northbound volume on Albion Road approaching Lester Road is currently operating near capacity (and specifically the left-turning movement at the Albion/Lester intersection as shown in Table 2-4). As such, the majority of any new development-related traffic was assigned to Bank Street where there is some spare roadway capacity. This is consistent with the Bank Street Widening EA that assumes a 37% increase of traffic along Bank Street compared to only a 3% increase along Albion Road.

Depending on their origin, however, drivers may desire to access Lester Road via Albion Road should there be capacity available through a future widening. It is important to note, however, that the widening of Albion Road does not form part of the 2031 Affordable Road Network in the TMP, nor do other road projects that could influence volume projections on Lester Road (and the Airport Parkway) such as the Earl Armstrong Extension (to Bank Street), Alta Vista Transportation Corridor, Leitrim Road widening/realignment, etc. Hypothetically, any future widening of Albion Road would likely decrease traffic volume along the segment of Lester Road between Bank Street and Albion Road. Based on the projected volumes outlined herein, the potential decrease in volumes along Lester Road east of Albion Road could be approximately 100 to 200 veh/h, during the peak hours, resulting in total traffic volumes on this segment of Lester Road of between 700 and 800 veh/h. This alternate volume balance is considered compatible with the assumed 800 veh/h capacity of Lester Road between Albion Road and Bank Street, and therefore a widening of this section may not be essential at the 2031 planning horizon should Albion Road to the south be widened (contradicting the current TMP).

[2] Note that street volume-to-capacity (v/c) ratios close to 1.0 are often characterized by very unstable flow and congestion, which is why the target maximum v/c ratio has traditionally been 0.90 in Ottawa (except in central business district contexts).

The two-way AADT included in Table 2-10 was calculated based on the assumption that the peak volume represents approximately 10% of the AADT or the combined morning and afternoon peak hour volumes represent approximately 20% of the AADT. These assumptions are obtained from the existing relationship between peak hour volumes and AADT outlined in Section 2.2.

2.9.4 Intersection/Interchange Operations

The following Table 2-11 provides a summary of projected performances of study area intersections at full site occupancy. The SYNCHRO and SIDRA model output of projected conditions is provided within the full report in Appendix B - Supporting Reports.

Table 2-11: Projected Intersection Performance

Intersection	Weekday AM Peak (PM Peak)					
	Critical Movement			Intersection 'as a whole'		
	LoS	max. v/c or avg. delay (s)	Movement	Delay (s)	LoS	v/c
Brookfield/Flannery	A(C)	0.43(0.66)	NBR(SBT)	7.3(12.0)	A(B)	-
Airport Parkway/Walkley	B(A)	0.63(0.55)	NBR(WBT)	7.7(10.2)	A(A)	0.36(0.54)
Airport Parkway/Hunt Club	D(D)	0.84(0.89)	WBT(EBL)	34.2(39.2)	C(D)	0.79(0.85)
Uplands/Airport	B(C)	0.62(0.78)	SBL(WBT)	13.1(18.1)	A(C)	0.58(0.75)
Albion/Lester	F(F)	1.47(1.13)	WBT(NBL)	139.1(51.7)	F(E)	1.32(0.98)
Bank/Lester/Davidson	D(F)	0.83(1.05)	NBL(EBT)	18.9(30.8)	B(C)	0.61(0.71)
Alert/Airport/Uplands	E(C)	0.92(0.76)	WBR(EBT)	13.1(14.6)	D(B)	0.86(0.70)
Notes:	• Analysis of signalized intersections assumes a PHF of 0.95 and a saturation flow rate of 1800 veh/h/lane. • Brookfield/Flannery Roundabout intersection 'as a whole' analysis is based on delay.					

As shown in Table 2-11, with no signal timing plan modifications, the signalized study area intersections, 'as a whole', are projected to operate at an acceptable LoS 'D' or better during both peak hours, with the exception of the Albion/Lester intersection during both peak hours, which is projected to operate at capacity/fail (LoS 'E'/LoS 'F').

With regards to the 'critical movements' at study area intersections, the westbound through movement and the northbound left-turn movement at the Albion/Lester intersection are projected to fail (LoS 'F') during the morning and afternoon peak hours, respectively. The eastbound through movement at the Bank/Lester intersection is projected to fail during the afternoon peak hour, while the northbound left-turn volume of almost 500 veh/h suggests that dual turning lanes may be appropriate. The westbound right-turn movement at the Uplands/Alert/Airport intersection is projected to operate at capacity (LoS 'E') during the morning peak hour.

As shown in Table 2-11, the Brookfield/Flannery roundabout is projected to continue to operate acceptably with a critical southbound movement of LoS 'C' during the afternoon peak. In addition, the Hunt Club Road interchange is projected to continue to operate similar to existing conditions with critical movements operating at LoS 'D'.

2.10 Initial Assessment of Transportation Options

Based on the projected capacity deficiencies between 200 and 800 veh/h along the Airport Parkway and Lester Road, it is necessary to assess transportation options along these roadways. The analysis of these options will inform the subsequent environmental assessment of "alternative solutions" that may meet the overall project's needs and opportunities. The following options were assessed.

2.10.1 Do Nothing

This option assumes the existing two-lane cross-section along the Airport Parkway and Lester Road. To achieve acceptable levels of service, the traffic volume along the Parkway would have to be in the 1,600 veh/h range. It is unreasonable to assume the full extent of the 200 to 800 veh/h surplus could change to active modes of walking or biking given the location of the study area outside the Greenbelt.

The TMP 2031 modal share targets for walking and cycling are 10% and 5% region-wide, respectively. However, it can be assumed that non-motorized modal share targets will be less outside the Greenbelt than the city-wide average. A full shift of the 800 veh/h demand to walking or biking would result in an estimated walking/cycling modal share of over 20% (assuming the baseline target of 15% modal share is achieved), which is not considered realistic in this context.

Regardless of a lower non-motorized modal share, pedestrian and cycling facilities of some form are recommended along the Airport Parkway and Lester Road as they are identified as spine routes.

2.10.2 Transit Solution

This option examines the possibility of increasing transit ridership along the Airport Parkway (in place of road widening).

The results of the TRANS model indicate that the transit modal share at the CNR East Screenline (which includes the Airport Parkway) is approximately 25% in the AM peak, whereas south of the Airport at Leitrim Road the transit modal share is less than 10%. The forecasted transit modal shares in the AM peak at 2031 are just over 33% and 22%, respectively, reflecting the extension of the O-Train to south of Leitrim Road prior to 2031. The TMP 2031 modal share targets for transit modal share is 26% region-wide.

Given the proposed O-Train extension will be located parallel to the Airport Parkway, it is unlikely that the full extent of the 800 veh/h surplus demand (≈900 persons) would change to transit within the Airport Parkway Corridor as it would be providing a redundant (and competing) service to the O-Train. A full shift of the 800 veh/h demand would result in an estimated transit modal share of approximately 40% across the CNR Screenline (assuming the baseline target of 30% modal share is achieved with the O-Train extension), which is considered quite aggressive in this context.

Should the target transit split of 30% not be met in this area of the City and there was no change to the existing transit modal share, an additional vehicle demand of approximately 1,000 veh/h is estimated to occur crossing the CNR Screenline.

In the segment of the Airport Parkway between Hunt Club Road and Lester Road, where the capacity deficit is only 200 veh/h, the introduction of a transit solution may help to address a portion of the surplus demand.

The foregoing results demonstrate that the transit only solution is not capable of addressing the long-term travel demand within the Corridor.

2.10.3 Additional Roadway Capacity

2.10.3.1 *General Purpose Lane*

This option examines the possibility of widening the Airport Parkway and Lester Road from two-lanes to four-lanes.

An additional travel lane along the Airport Parkway would increase directional capacity from the current 1,600 veh/h to an estimated 2,800 to 3,200 veh/h, which would address the projected vehicle demand and result in reasonable performance.

An additional travel lane along Lester Road would increase directional capacity from the current 1,200 veh/h to an estimated 2,000 to 2,400 veh/h, which would address the projected vehicle demand and result in reasonable performance.

2.10.3.2 *High Occupancy Vehicle (HOV) Lane*

This option examines the possibility of widening the Airport Parkway and Lester Road from two-lanes to four-lanes with the additional lane serving as a High Occupancy Vehicle (HOV) lane. As noted previously, the TMP indicates that consideration should be given to providing peak period bus/HOV on the Airport Parkway between Hunt Club and the Airport, with the rationale being to improve transit access to the Airport (in lieu of rapid transit).

In 2016, only OC Transpo Route #97 has a bus stop at the airport whereas Routes #99, 147, and 204 exit Airport Parkway either onto Lester Road or Uplands Drive. Figure 2-27 depicts bus route 97.

Figure 2-27: 2031 OC Transpo Route #97

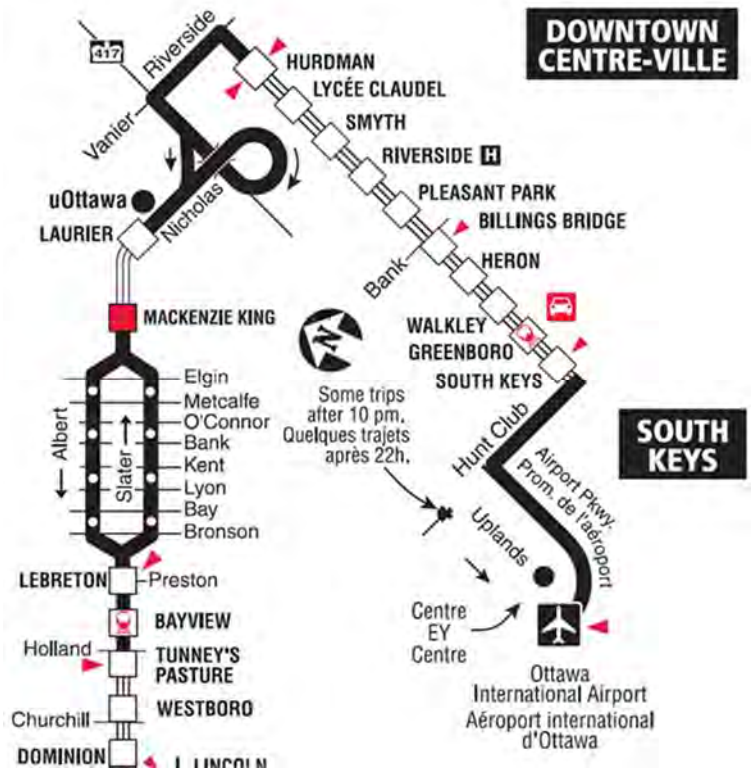
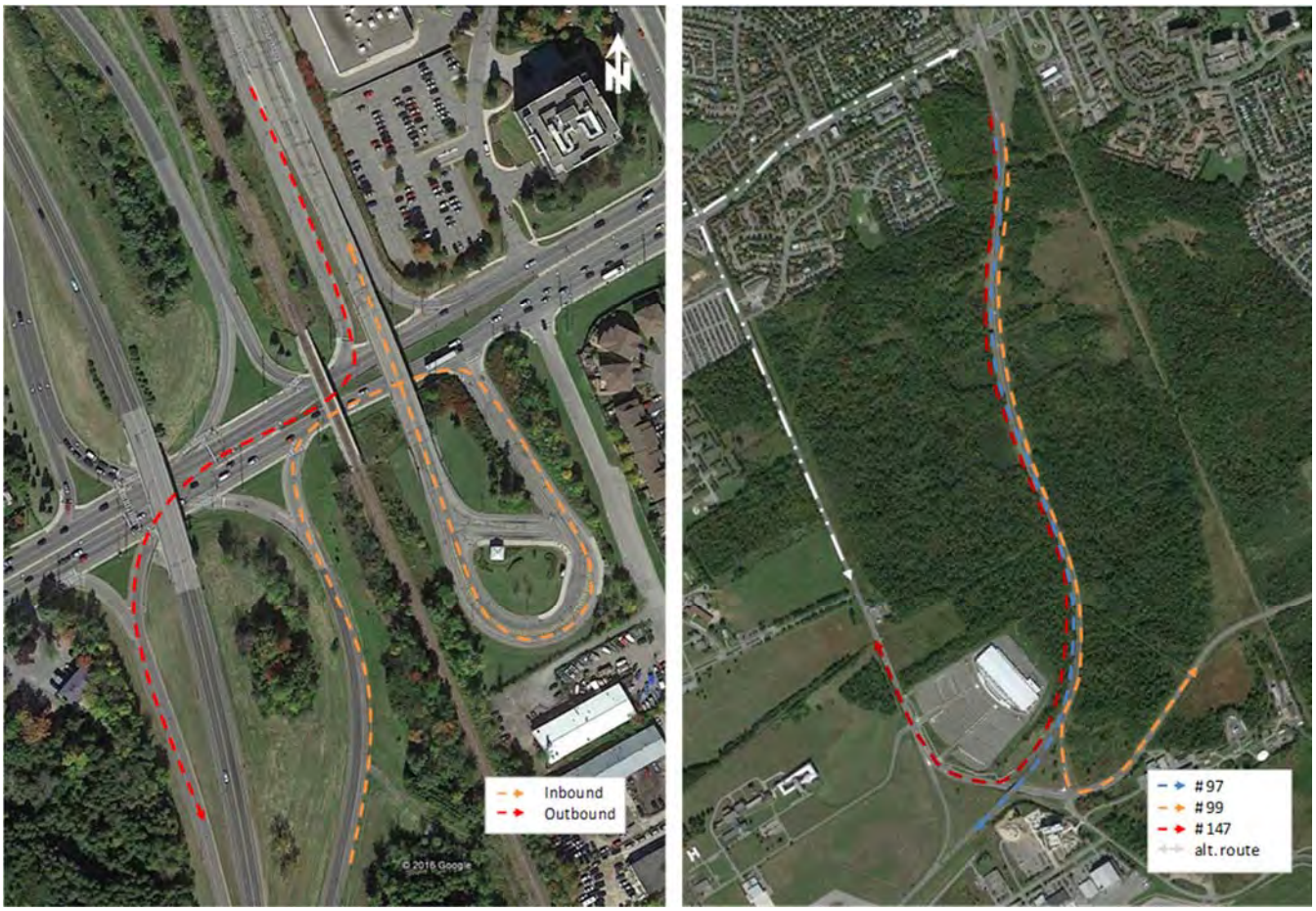


Figure 2-28 depicts the path taken by buses to transition between the Transitway and Airport Parkway (via Hunt Club Road), as well as current routings southbound on the Airport Parkway approaching Lester Road. Buses either continue to the Airport, turn left onto Lester Road, or turn right onto Uplands Drive. Note that Uplands Drive is used at certain times of the day as an alternative routing to the Airport Parkway for Route #97. In addition, during only Saturday and Sunday, Route #99 proceeds northbound on Uplands Drive as an alternative route to Airport Parkway.

The implementation of an HOV lane is often a policy decision to promote sustainable transportation initiatives. Ideally an HOV lane would be part of an overall managed lane system, however, this is not the case for the Airport Parkway/Lester Road network as no other HOV facilities exist within close proximity. The dedicated Southeast Transitway does currently terminate at Hunt Club Road (South Keys), and any buses destined to the Airport use the Airport Parkway. The provision of an HOV lane on the Airport Parkway south of Hunt Club would conceptually benefit buses in that they are not in mixed-use traffic. An HOV lane would also benefit taxi activity to/from the Airport, but only for the short portion of the trip approaching the Airport.

Figure 2-28: Bus Routes through Airport Parkway and Hunt Club Connection to Transitway



Usual measures of successful implementation of an HOV lane include a meaningful travel time benefit and adequate lane space utilization. Analysis suggests that these are unlikely to be achieved here given the relatively short distance of the road segment (2.4 km from Hunt Club to Lester) and assuming the existing low auto occupancy rated exhibited on the Airport Parkway of 1.13 as noted in Section 2.4. The TRANS model, however, projects that approximately 24% of vehicles travelling along the Airport Parkway in year

2031 will be HOV (2+ occupants per vehicle), which is noted to be approximately double the observed auto occupancy

- Along Airport Parkway south of Hunt Club, the critical total projected vehicle demand is approximately 1,800 veh/h. Assuming the 24% HOV target, the projected volume in the HOV lane would be slightly more than 400 veh/h. The residual auto demand of approximately 1,400 veh/h would be accommodated, from a capacity perspective, in a single general purpose (GP) lane with an assumed capacity of 1,600 veh/h. An additional 250 to 300 veh/h would be projected for travel in the GP lane if only the existing occupancy rate of around 1.10 was achieved. Moreover, the HOV lane would be underused with an average of 165 veh/h.

- Along Airport Parkway north of Hunt Club, the critical total projected vehicle demand is 2,400 veh/h. Assuming the 24% HOV target, the projected volume in the HOV lane would be approaching 600 veh/h. The residual auto demand of just over 1,800 veh/h could not be reasonably accommodated, from a capacity perspective, in a single general purpose (GP) lane with an assumed capacity of 1,600 veh/h. Should the target occupancy rate of 24% not be met along this corridor, an additional 300 to 400 veh/h are projected given the existing occupancy rate of between 1.10 and 1.15. This would result in approximately 2,100 to 2,200 veh/h in the GP lane along the Airport Parkway in the peak direction during the afternoon peak hour.

Along Lester Road, approximately 21% of vehicles are noted as HOV between Airport Parkway and Albion Road and approximately 15% between Albion Road and Bank Street. The detailed analytical assessment of expected HOV lane utilization on the Airport Parkway is provided within the full report in Appendix B – Supporting Reports.

The Ontario Ministry of Transportation (MTO) has developed guidelines for assessing the feasibility of HOV lanes. Relief of congestion, travel time savings, and cost effectiveness are examples of applicable criteria stated by MTO. Our assessment, based on these guidelines, is also included the full report in Appendix B – Supporting Reports. The basic findings of this assessment are that many of the conditions identified for a successful HOV facility would not be satisfied, although decision to implement HOV lanes from a policy perspective may ultimately dictate. In sum, the analysis indicates that an HOV lane on the Airport Parkway south of Hunt Club would generally satisfy volume considerations (i.e., sufficient capacity provided in a single GP lane and single HOV to satisfy demand), but the lack of forecasted congestion as a result of the widening implies there would be no travel time benefit.

Longer term, the possibility of implementing a High Occupancy Toll (HOT) lane could be explored as a means to manage vehicle demand within the competing lanes. There are, however, likely to be notable costs associated with providing electronic tolling infrastructure that would limit the feasibility of HOT lanes for such a short section of roadway.

2.10.3.3 *Reversible Lane*

This option explores the possibility of providing a three-lane cross section with the centre lane serving as a reversible lane.

This solution is often applied on bridges and tunnels where widening is infeasible and over along very short distances where access can be reasonably controlled. This solution also requires tidal flow, which is not the case for the projected conditions along the Airport Parkway where afternoon peak hour volumes are projected to be 2,330 veh/h in the southbound direction and 1,910 veh/h in the northbound direction

(between Hunt Club Road and Walkley Road). This counter peak directional volume of 1,800 veh/h would be above the assumed capacity for a single lane of 1,600 veh/h. Further south along the Parkway the volumes of 1,835 veh/h and 1,595 veh/h would just meet the capacity requirements for a reversible lane configuration.

Along the Lester Road corridor (west of Albion), the projected volumes are more agreeable for a reversible centre lane with morning peak hour volumes of 1,780 veh/h in the westbound direction and only 478 veh/h in the eastbound direction. However, there is little benefit to provide a reversible centre lane along Lester Road if it is not continued along the Airport Parkway.

It is important to maintain the parkway nature of the corridor and as the infrastructure needed to manage a reversible lane would not be visually appealing, it is not recommended for this type of roadway.

2.10.4 Initial Roundabout Assessment

The existing and projected traffic volumes reveal that the predominant flow of traffic travels from Lester Road to the Airport Parkway. As such it is desirable to provide a more fluid link to/from these two roadways. A possible solution of providing a three-legged roundabout distributing traffic to/from the Airport Parkway, Lester Road, and the Airport was assessed.

The Airport Parkway/Lester roundabout assumed Lester Road and the Airport Parkway North as the main north-south roadways and the third leg as the Airport Parkway South. Based on the projected volumes and the origin-destination assumptions outlined in Section 2.2, the resulting multi-lane roundabout would experience an AADT of approximately 35,000 to 44,000 vehicles. According to the Federal Highway Administration (FHWA), the total AADT through a three-legged roundabout should not exceed 30,000 to 40,000 vehicles. As such, the initial assessment of a potential two-lane roundabout at the Lester/Airport Parkway interchange suggests that it is not feasible.

A possible roundabout solution was also assessed at the Albion/Lester intersection. The projected AADT at the Albion/Lester intersection is approximately 28,000 vehicles. As such, a four-legged roundabout at this location could potentially be accommodated; however, more analysis is required to assess the impact of the heavy northbound left-turn volume during the morning peak hour.

2.10.5 Downstream Impacts

The Airport Parkway continues as Bronson Avenue north of Brookfield Road. Bronson Avenue is a four/six-lane arterial roadway that provides access not only to the downtown core, but also numerous employment/intuitional nodes (i.e., Confederation Heights, Carleton University, etc.) and intersecting Arterial, Collector and Driveway routes (i.e., Heron Road, Riverside Drive, Queen Elizabeth Drive, Colonel By Drive, Carling Avenue, etc.).

Based on the analyses of projected travel demand at 2031, the additional two-way traffic projected north of Brookfield Avenue is approximately 550 to 650 veh/h during the weekday peak hours. Based on the estimation that approximately 15% of this additional traffic will access/egress the Parkway via Heron Road and 15% with access/egress the Parkway via Riverside Drive, the resulting 70% additional traffic volume destined to, or originating from Bronson Avenue (north of Riverside) is approximately 400 and 450 veh/h during the weekday peak hours. In the morning for example, some of the northbound traffic would be destined for Carleton University/Sunnyside Avenue, and some will access Colonel By Drive or Queen Elizabeth Drive to travel towards the Downtown Core.

Forecasting the extent of traffic that proceeds on Bronson into the downtown core is challenging. The observed trend is that vehicular traffic to/from Ottawa's downtown area has been diminishing in recent years (see Figure 2-13), which can be explained by the fact that no new road capacity is being provided directly into downtown, there have been successful investments in rapid transit, and employment, retail and service destinations are more decentralized. A series of Airport Parkway road widening and rapid transit expansion scenarios were simulated by the City of Ottawa using the TRANS model, and the findings were as follows:

- there will be increased travel demand as a result of growth between now (2011 baseline) and 2031 (estimated 220 veh/h on Bronson over the Rideau Canal);
- the downstream auto impacts on Bronson Avenue over the Rideau Canal as a result of the Airport Parkway widening will be negligible (estimated +30 veh/h compared to transit only scenario at 2031); and
- the proposed widening of the Airport Parkway will reduce the traffic congestion that currently exists within the Airport Parkway Corridor.

The negligible downstream auto impact is due in part to the fact that Bronson Avenue through the Glebe is essentially operating at capacity today, but also reflects increased transit ridership as travel time for longer many trips is expected to be shorter and less expensive/stressful using rapid transit. Additional data regarding downstream impacts can be found in the 'Focussed Stakeholder Meeting' presentation held on April 30, 2015, and is provided within the full report in Appendix B – Supporting Reports.

At the south end of the study area, Albion Road and Bank Street continue south providing access to the communities of Findlay Creek, Greely, etc. he additional two-way traffic projected along Albion Road is approximately 100 to 145 veh/h and approximately 300 to 350 veh/h along Bank Street. As mentioned previously, this traffic may be redistributed should one of the Albion/Lester or Bank/Lester intersections become less desirable/more congested. The total projected volumes along Albion Road are approximately 1,200 veh/h in the peak direction, which would be considered to be at capacity (assuming the capacity ranges between 800 and 1,200 veh/h). The total projected volumes along Bank Street are approximately 1,250 veh/h in the peak direction, which would be considered below the assumed available capacity of 1,600 veh/h. Recall that Albion Road widening does not currently form part of the Affordable Road Network at 2031, although it is identified in the Ultimate Road Network.

2.10.6 Walkley Road Community Connection

Previous transportation planning work dating back to the mid 1990's identified the need to provide full access to the Airport Parkway at Walkley Road and Hunt Club Road, with the rationale being to make use of the residual capacity of the Airport Parkway north of the ramps. These full connections were formally identified in the 1997 Region of Ottawa-Carleton TMP. In June 2000, the Airport Parkway Extended Traffic Impact Study (APETIS) report was received and Regional Council approved the Walkley Road southbound off-ramp. Regional Council reconsidered the approval of the off-ramp in July 2000; however, the construction of the off-ramp was reaffirmed. The Terms of Reference for the subject Airport Parkway and Lester Road Widening EA identified the need to re-evaluate the need and implications of providing the southbound off-ramp.

The connection linking the southbound Airport Parkway to Walkley Road is expected to reduce traffic in the afternoon peak period that currently runs along Flannery Drive and Springland Drive, cutting through the residential neighbourhood located between Brookfield Avenue and Walkley Road. It is noted that the planned function of Flannery Drive and Springland Drive is that of a Collector Roads (i.e., they are not

intended to provide a connecting link for traffic travelling over long distances). The connection would improve access to the Arterial Road network for the residential neighbourhoods immediately north and south of Walkley Road.

Whereas travel patterns on Walkley Road (between Riverside and Bank) may change, as motorists may access McCarthy Road from a different route, on balance the future traffic pattern is expected to be in keeping with the road's designation as an Arterial Road. Based on the TRANS model, the new connection is forecasted to attract 400-500 veh during the afternoon peak hour, with approximately half of the traffic turning left (towards Bank Street) and half turning right (towards Riverside). Volume reductions of approximately 100-150 veh/h are forecasted on southbound Flannery and Springland, and eastbound Walkley (between Springland and McCarthy) during the afternoon peak hour. Volume increases of approximately 100-150 veh/h are forecasted on westbound Walkley (between Airport Parkway and McCarthy during the afternoon peak hour. Traffic management measures should be considered to minimize cut-through traffic on the local/neighbourhood road network.

Included within the full report in Appendix B – Supporting Reports is a presentation made to the Riverside Park Community and Recreation Association (RPCRA) in October 2015. The presentation described the background, rationale, analytical process, as well as potential impacts and mitigation measures.

2.11 Conclusion for the Need and Opportunity for the Airport Parkway and Lester Road

Based on the foregoing analysis, the following transportation related conclusions are provided:

- Shifts towards travel using rapid transit (i.e., Trillium Line) have been built into the analytical assumptions, and notwithstanding, a widening of the Airport Parkway will still be necessary;
- Based on the existing operational issues and 2031 projected traffic volumes, the widening of the Airport Parkway from Lester Road to Brookfield Drive (two lanes per direction) is recommended:
    - Operational issues currently exist at the Hunt Club on/off ramps and south of the Brookfield on/off ramps as the southbound Airport Parkway is narrowed from 4 lanes to 2 lanes;
    - Collision data reveals a high number of collisions related to U-turns along the Airport Parkway;
    - The 2031 peak directional projected traffic volumes travelling along the Airport Parkway north of Lester Road range from 1,800 to 2,400 veh/h during the peak hours (or 1,760 to 2,230 veh/h modified peak hour projection). The assumed capacity at this location is approximately 1,600 veh/h per lane, as such, the projected peak hour volumes are greater than the available capacity; and
    - South of Hunt Club Road to the Airport, consideration could be given to the widening of the Airport Parkway being in the form of an HOV lane (in lieu of rapid transit serving the Airport). However, an HOV lane is not forecasted to provide any travel time benefit as the widening is expected to alieve any congestion.
- The continuation of a widened Airport Parkway south of Lester Road to the Airport will also be needed in the fullness of time (depending on the configuration of ultimate road network serving the Airport);
- The widening of the Airport Parkway between Brookfield and the Airport, as a divided cross-section, is also recommended to from a safety perspective. This is in keeping with the findings of the City's In-Service Road Safety Review (2007), which is understood to be a major rationale for the inclusion of the Airport Parkway Widening (Brookfield to Airport) within the 2013 Transportation Master Plan;

- A widened Airport Parkway provides additional capacity to improve travel time reliability for all users, but particularly air travellers to/from the MacDonald Cartier International Airport. With just a single travel lane in each direction, a single lane blockage would result in restricting access to the Airport via the primary route until the blockage is removed;
- A new road link between the Airport Parkway and Uplands drive is recommended to provide additional connectivity to the road network;
- A southbound connection from the Airport Parkway to Walkley Road is recommended on the basis that it represents an opportunity to connect two arterial roadways and implement their planned function (as per the Official Plan):
    - The connection would improve community access and choice, address existing neighbourhood cut-through traffic issues on Springland and Flannery, improve resiliency within the Airport Parkway, improve emergency vehicle response times, etc.;
    - The forecasted traffic impact is a shift in the direction of traffic on Walkley Road approaching McCarthy Road, but volume increases that are consistent with the Walkley Road's function as an arterial road; and
    - There is an increased potential for cut-through volumes within the community south of Walkley Road (east of McCarthy), and an effective traffic monitoring program and potential traffic management measures will need to be identified.
- Based on 2031 projected traffic volumes, the widening of Lester Road from Albion Road to the Airport Parkway (two general purpose lanes per direction) is recommended:
    - The 2031 peak directional projected traffic volume along Lester Road from Albion Road to the Airport Parkway is approximately 1,800 veh/h (or 1,640 veh/h modified peak hour projection). The assumed capacity along this link is approximately 1,200 veh/h, as such, the projected peak hour volumes are greater than the available capacity.
- Based on the 2031 projected traffic volumes, the widening of Lester Road between Bank Street and Albion Road is also recommended:
    - The 2031 projected peak directional traffic volume along Lester Road between Bank Street and Albion Road is approximately 900 veh/h (or 810 veh/h modified peak hour projection), which just exceed the assumed available capacity of approximately 800 veh/h;
    - If drivers use Albion Road as a means to access Lester Road instead of Bank Street, these projected peak hour volumes may decrease to approximately 700 to 800 veh/h. However, this implies a widening of Albion Road (which is not in the City's Affordable Plan), which is already operating at capacity during peak periods; and
    - Intersection modifications may be necessary at the Bank/Lester intersection depending on route choices.
- Intersection and roadway connection improvements are recommended at the Albion/Lester and Lester/Airport Parkway intersections;
    - Possible roundabout solutions linking Lester Road and the Airport Parkway as the main roadway require more analysis, however, an initial assessment at the Lester/Airport Parkway intersection reveal that a roundabout would not be feasible. Possible roundabout solutions exists at the Albion/Lester intersection, however, further analysis is required.
- There is an opportunity to improve the cycling and pedestrian environments within the Study Area in accordance with Official Plan and TMP directions;
- There is an opportunity to improve/enhance Scenic Entry Routes to/from the City;
- There is an opportunity to improve/enhance natural heritage features and function; and

- There is an opportunity to coordinate the planning and design of transportation infrastructure in the Airport Parkway and Lester Road corridors with other planned infrastructure including the Trillium Line Extension project.

3.0 Existing Conditions

This section of the ESR represents the studies and investigations undertaken to date on the existing conditions within the study area corridor. It is intended to document the baseline conditions for the corridor against which the potential environmental effects of the alternatives can be assessed. This information may be updated as investigations continue and additional information becomes available. Overall, the baseline data were collected and analyzed for key environmental parameters in order to:

- provide an understanding of existing conditions;
- allow for future predictions of how the proposed project may cause these environmental conditions to change;
- allow for future predictions of how adverse effects can be mitigated and beneficial effects enhanced; and,
- provide a basis for designing monitoring programs.

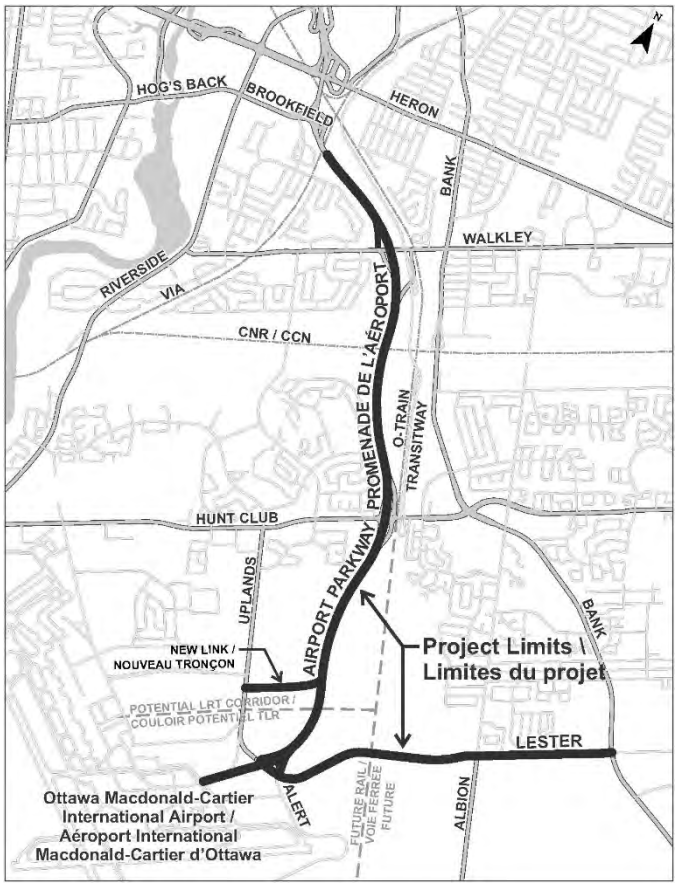


Figure 3-1: Study Area

3.1 Study Area

Study area limits may change depending on the element of the environment. This is because some potential environmental effects may be much more localized, such as noise, whereas others like the movement of people may have broader implications. The study area is generally shown in Figure 3-1.

3.2 Methods of Investigation

This information was prepared by a multidisciplinary team of land use planners, biologists, geologists, archaeologists, landscape architects, municipal engineers, transportation planners, and experts in air quality, noise and vibration. This team of specialists collected, consolidated, reviewed and screened all available information with a view towards establishing the basis for development, analysis and evaluation of alternatives.

The inventory considered all available background material and where necessary, supplemented this information through on-site surveys and/or detailed studies which are included in Appendix B - Supporting Reports. The inventory is of sufficient detail to enable the analysis and evaluation of alternative transportation solutions, designs, mitigating measures and monitoring programs.

The general methodology involved the following elements:

- The submission of requests for data, drawings and reports to affected agencies;
- Contacting and meeting with affected parties as required;
- Consolidating, reviewing and analysing relevant material for each element;
- Conducting air photo interpretation and field verification as required; and

- Identifying elements or criteria that could be considered potential evaluation criteria.

Specific methods of investigation may be discussed in further detail in the respective sections as warranted. Transportation conditions and planning policies related to transportation were summarized in Section 2.0 and are considered as forming part of the existing conditions for the study area.

3.3 Social Environment

3.3.1 Planning Policies

3.3.1.1 *Federal Land Use Policies – NCC's Greenbelt Master Plan (2013)*

The transportation role of the Airport Parkway and associated Lester Road in NCC's Plan for Canada's Capital (1999) and the Greenbelt Master Plan (2013) are outlined in sections 2.3.1.1 and 2.3.1.2 of this report. The Airport Parkway and Lester Road segments within the Greenbelt are within or adjacent to three land use designations: 1) Core Natural Area, 2) Natural Links, and 3) Agriculture (Figure 3-2 and Figure 3-3). The primary objectives of these three land use designations are outlined in Table 3-1.

Table 3-1: Greenbelt Master Plan Land Use Designations

Land Use Designation	Primary Objectives
Core Natural Area	• Protect biodiversity and ecosystem health for the long term • Restore and enhance terrestrial and aquatic biodiversity • Enhance Canada's Capital through the conservation of natural visual landscapes
Natural Links	• Protect natural linkages between Core Natural Areas • Establish or restore terrestrial and aquatic linkages in fragmented landscapes within the Greenbelt • Provide public activities and interpretation away from sensitive features • Facilitate adaption to environmental change (resiliency) • Enhance Canada's Capital through conservation of natural visual landscapes
Agriculture	• Practice sustainable agriculture • Support productive Greenbelt farms that contribute to local and regional food supply • Diversify Greenbelt farming and provide opportunities for agri-tourism • Reduce the area covered by large mono-culture farming operations and promote diverse agriculture lands • Enhance Canada's Capital through conservation of natural visual landscapes

The Greenbelt Master Plan includes Sector Plans which provides more detailed information on the land use designations, Capital experiences, and the recreation networks in specific parts of the Greenbelt. The International Airport Sector and the Pine Grove Sector are located within the study area.

International Airport Sector Plan

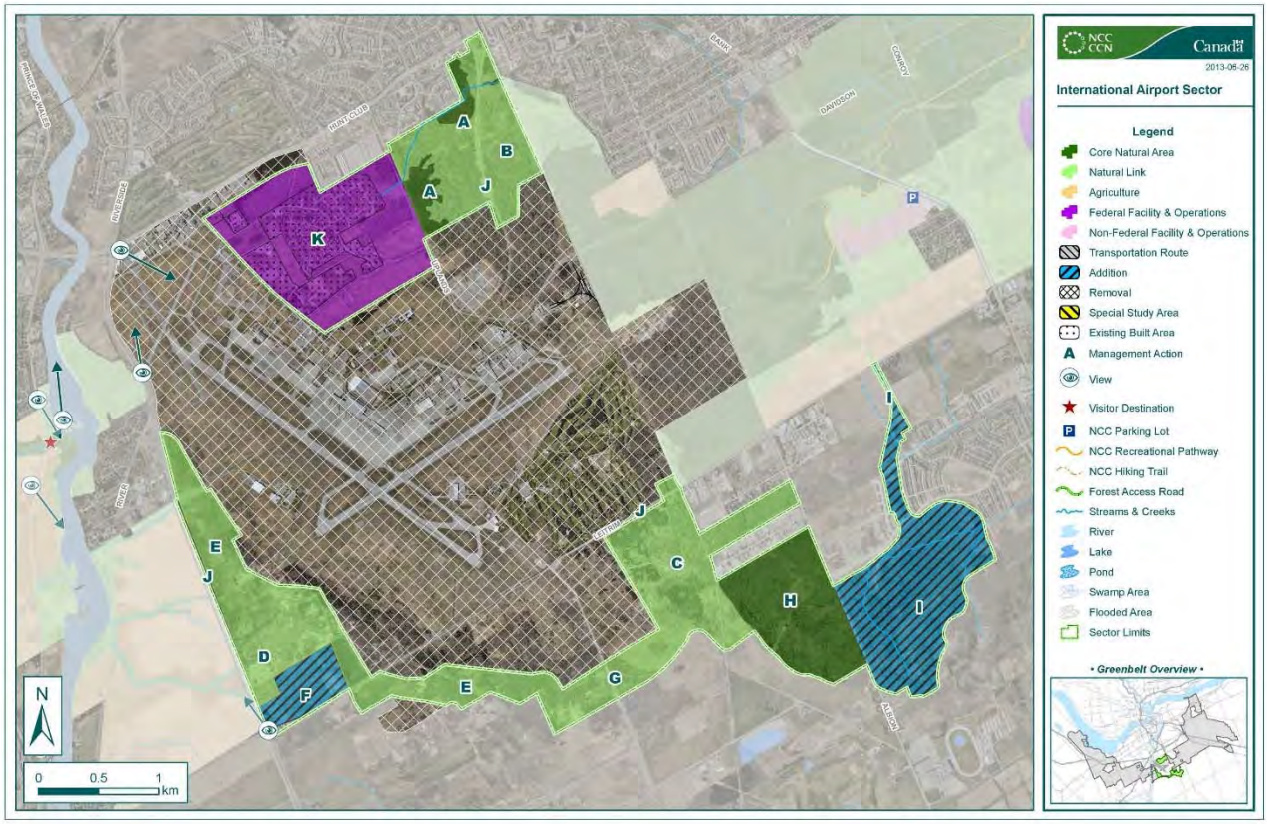
The International Airport Sector (Figure 3-2) is located at the southwest of the study area. It is important to note that the Greenbelt designation no longer applies to the Ottawa Macdonald-Cartier Airport operating lands. The Airport Parkway provides direct access from the airport to the core of the City of Ottawa through a forested scenic corridor. The Sector Plan identifies (denoted by characters on the Sector Plan) a number of Guidelines and Actions that may impact the evaluation of alternatives these include:

A – Lester Wetland Core Natural Areas: Conserve the features and functions of these provincially significant wetlands.

B – Airport Parkway Natural Link: Encourage the City and the Airport Authority to maintain natural link functions on lands to the east, seek their protection in the context of any future transportation infrastructure initiatives.

J – Visual Quality – Scenic Entry and Capital Arrival: Visually buffer uses, protect and enhance visual quality along Airport Parkway Capital Arrival.

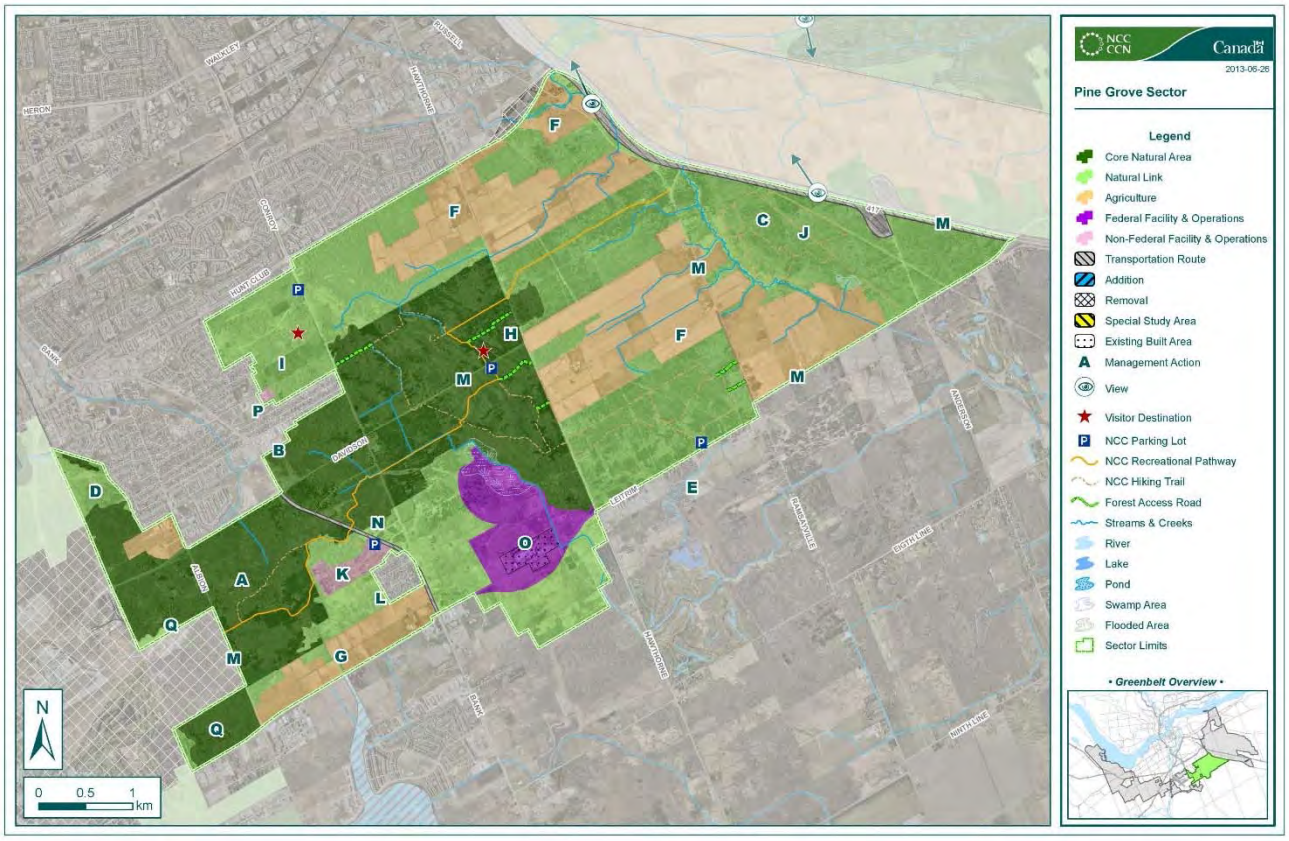
Figure 3-2: NCC Greenbelt Master Plan - International Airport Sector



Pine Grove Sector Plan

The Pine Grove Sector (Figure 3-3) is located along the southeast of the study area. The Pine Grove sector is the largest multi-purpose forest within the Greenbelt and will be managed for its natural importance and for recreation. The Lester Wetland Complex, a provincially significant wetland, is located in this sector. No specific Guidelines or Actions are associated with Lester Road within the study area.

Figure 3-3: NCC Greenbelt Master Plan - Pine Grove Sector Plan



3.3.1.2 *Provincial Policy Statement (2014)*

The Provincial Policy Statement (PPS) is issued under Section 3 of the *Planning Act*. The PPS is the statement of the provincial government's policies on land use planning. It applies province-wide and provides clear direction on land use planning to promote strong communities, a strong economy, and a clean and healthy environment. It includes policies on key issues that affect our communities, such as:

- the efficient use and management of land and infrastructure;
- protection of the environment and resources; and
- ensuring appropriate opportunities for employment and residential development, including support for a mix of these uses.

Municipalities use the PPS to develop their Official Plans and to guide and inform decisions on planning matters. All decisions affecting land use planning matters "shall be consistent with" the PPS (MMAH, 2014).

3.3.1.3 *Municipal Policies*

Ottawa Official Plan (2013, as amended)

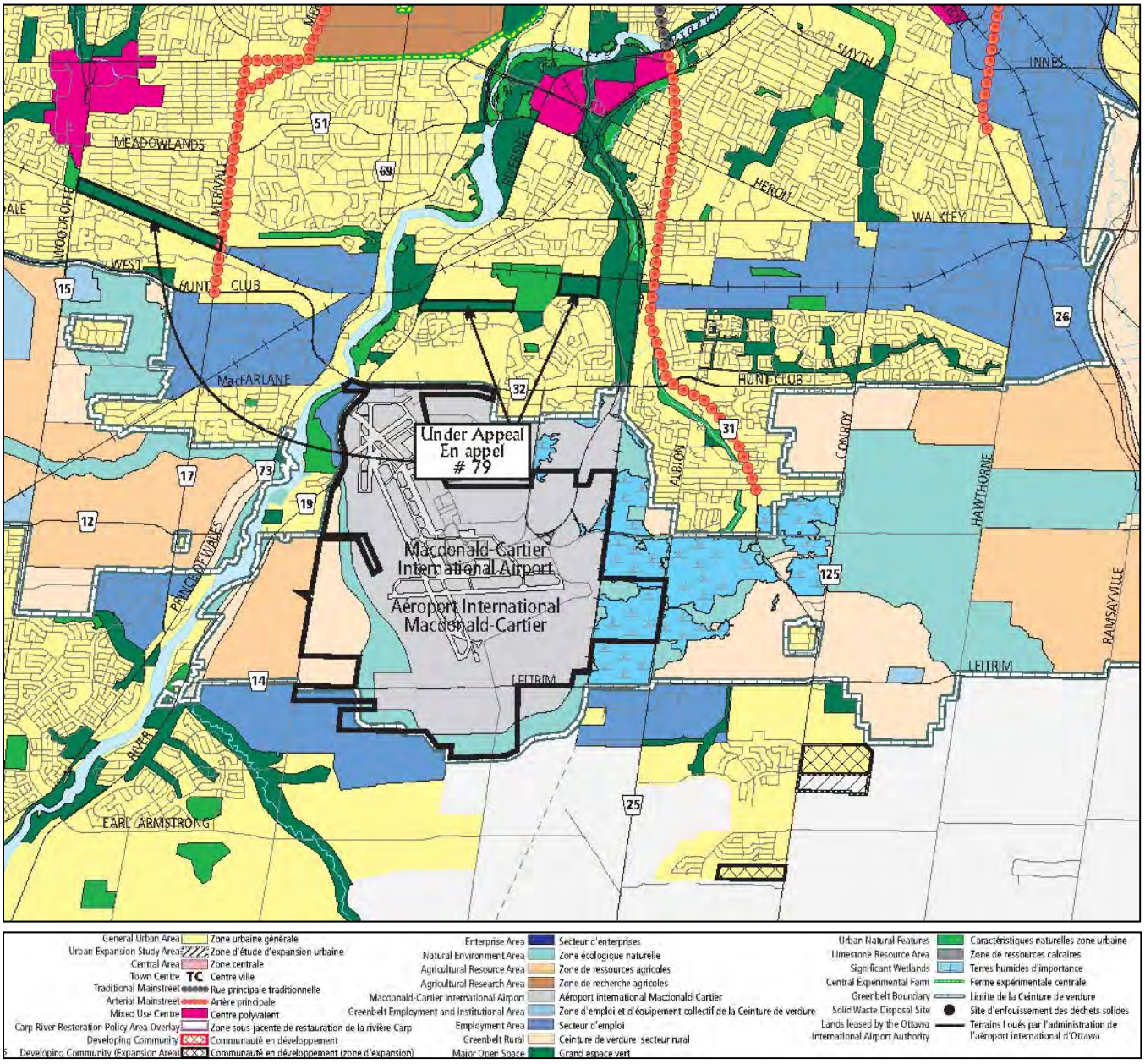
The City of Ottawa Official Plan (OP) provides a vision of the future growth of the City and a policy framework to guide its physical development to the year 2031. It is a legal document that addresses matters of provincial interest defined by the PPS. The OP serves as a basis for, and provides guidance on, a wide range of municipal activities. The following table (Table 3-2) describes the various land use and other designations that would apply to Airport Parkway and Lester Road. Figure 3-4 illustrates the land use designations of the OP.

Table 3-2: OP Land Use Designations Applicable to Airport Parkway and Lester Road

Schedule	Designation	Location of Overlap or Intersection with Airport Parkway	Location of Overlap or Intersection with Lester Road
B – Urban Policy Plan	Greenbelt Rural	n/a	East of the north-south rail corridor to Albion Road
	Major Open Space	Brookfield Road to northern Greenbelt boundary	n/a
	Macdonald-Cartier International Airport	Northern Greenbelt boundary to south end of Parkway	Airport Parkway to north-south rail corridor
	Natural Environment Area	n/a	North-south railway corridor to Bank Street
	Urban Natural Features	Adjacent to the east from Brookfield Road to north of Walkley Road	Adjacent to the north at Sawmill Creek
C – Primary Urban Cycling Network	On-road cycling routes	Along entirety of Parkway	Along entirety of Lester Road
	Off-road cycling route / multi-use pathways	Intersects with Parkway at east-west rail corridor	Intersects with Lester Road at north-south rail corridor
D – Rapid Transit Network	Bus Rapid Transit (BRT)	Heron Road to Hunt Club Road	n/a
	Light Rail Transit (LRT)	Heron Road to Hunt Club Road	LRT intersects with Lester Road near Airport Parkway and at north-south rail corridor
	Park and Ride	Between east-west rail corridor and Hunt Club Road	n/a
E – Urban Road Network I – Multi-Use Pathways and Scenic-Entry Routes (Urban)	Existing Arterial Scenic Entry Route	Along entirety of Parkway Along entirety of Parkway	Along entirety of Lester Road n/a
	Off-Road Multi-Use Pathway (Community Route)	Along entirety of Parkway	Intersects with Lester Road at Airport Parkway, north-south rail corridor and Sawmill Creek
	Off-Road Multi-Use Pathway (City-wide Route)	Intersects with Airport Parkway at east-west rail corridor	Intersects with Lester Road at north-south rail corridor
K – Environmental Constraints	Airport Vicinity Development Zone	East-west rail corridor to Airport	Adjacent to the north of Lester Road
	Ottawa Airport Operating Influence Zone	South of northern Greenbelt boundary to south end of Parkway	Along entirety of Lester Road
	Organic Soils	n/a	Adjacent to the south of Lester Road and east of north-south rail corridor
Annex 2 – Watershed and Subwatershed Plans	Sawmill Creek	Entirely within	Entirely within
Annex 6 – Urban Secondary Plans and Site Specific Policies	Hunt Club Plan	East-west rail corridor to Hunt Club Road	n/a
	Riverside Park Plan	Heron Road until east-west Rail corridor	n/a

Schedule	Designation	Location of Overlap or Intersection with Airport Parkway	Location of Overlap or Intersection with Lester Road
Schedule L1 – Natural Heritage System Overlay (East)	Identified Natural Heritage System Feature	Brookfield Road to north of the east-west rail corridor	North-south rail corridor to Bank Street

Figure 3-4: City of Ottawa Official Plan - Urban Policy Plan



3.3.1.4 *Ottawa International Airport Authority Land Use Plan (2008)*

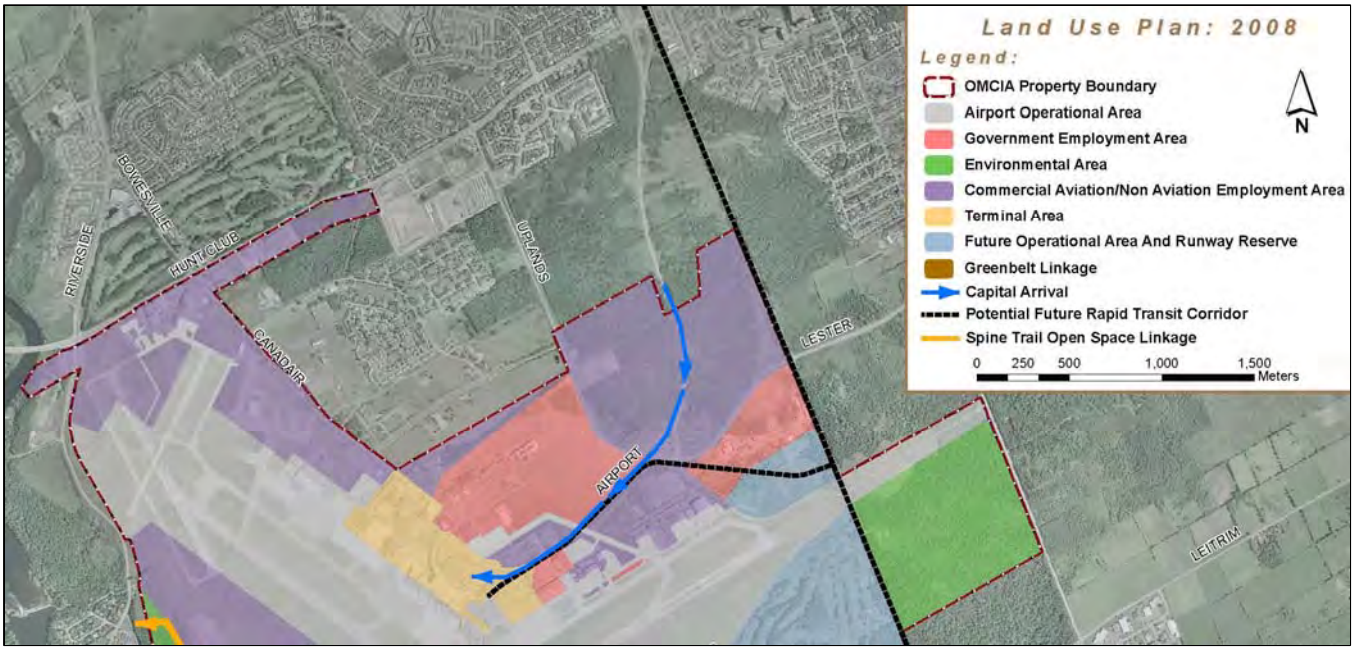
The Ottawa International Airport Authority approved a Land Use Plan in 2008 to guide future growth on their lands. The approved plan for the airport lands include two land use designations adjacent to the Airport Parkway and Lester Road: 1) Commercial Aviation/Non-Aviation Employment Area and 2) Government Employment Area. A potential Future Rapid Transit Corridor is anticipated in the Land Use Plan and is

generally located to connect into the Airport south parallel to the Airport Parkway south of Uplands (Figure 3-5). The Plan also acknowledges the role the Airport Parkway has as a Capital Arrival. The land use objectives for these areas are outlined below.

Commercial Aviation/Non-Aviation is intended to establish areas for both aviation and non-aviation related commercial, light-industrial, and employment uses. A wide array of uses would be permitted including uses typically related to airports (i.e. auto rental, cargo) and uses related to business parks and community-related commercial activities.

Government Employment Area encompasses land areas presently occupied by Federal government departments and other governmental agencies related to the airport.

Figure 3-5: OMCIA Land Use Plan (2008)



The OMCIAA has also developed an Airport Urban Design Plan – Design Guidelines (AUDP). Completed in 2013, the purpose of the guidelines are to facilitate quality design and consistent development, across the various employment sectors of the airport lands. The plan also includes conceptual layouts of the various employment sectors in the airport based on Primary and Secondary Structure goals embodied in the AUDP. Figure 3-6 illustrates the conceptual layout for the Terminal Area included in the AUDP. The plans shows a potential road network and lot plans for the lands adjacent to the Airport Parkway and Lester Road including two new roads to service development as well as a new road connecting the Airport Parkway to the Airport Terminal itself.

Figure 3-6: Secondary Structure Plan Concept - Terminal Sector

3.3.2 Corridor and Adjacent Land Uses

As illustrated in Figure 3-4 and noted in Table 3-2, the majority of the Airport Parkway is located within a Major Open Space corridor, and as such, is immediately adjacent to greenspace areas which include pathways, watercourses (Sawmill Creek) stormwater management ponds and other natural areas. Where the corridor narrows, beyond the open space corridors are existing, established residential areas and commercial areas (Walkley Road, Bank Street, Hunt Club and South Keys Shopping Centre). Office uses are also located within these areas as are the employment uses of the Airport and the associated EY Centre. The existing land uses are illustrated in Figure 3-7.

Figure 3-7: Existing Land Use (2010)

3.3.3 Landscape and Visual Environment

A landscape inventory was performed by Douglas & Ruhland Associates Ltd. This inventory involved the identification of existing vegetation and landscape features within and adjacent to the study area including green spaces, natural areas, water courses and recreational corridors. The inventory provides a visual assessment of the existing environment which includes landscape conditions, character areas and valued features.

3.3.3.1 *Northern Section – Brookfield to Walkley Road*

The northern section of the Airport Parkway from Brookfield Road to Walkley Road has a natural aesthetic. These City lands are designated Primary Natural Lands and Open Space and Leisure Lands in the City of Ottawa Greenspace Masterplan. Along this section there are two overpasses, with meadow-like conditions along the roadside and wooded areas with mature and healthy trees. Sawmill Creek runs between the Parkway and Sawmill Creek pathway, and the Trillium Line and Transitway. Figure 3-8 displays the landscape features in this portion of the study area.

Figure 3-8: Landscape Inventory - Brookfield to Walkley Road

3.3.3.2 *Walkley Road to Greenboro Trillium Line Station*

The stretch from Walkley Road to the Greenboro Trillium Line station, as depicted in Figure 3-9, has meadow-like conditions with areas of planted trees that dominate the roadsides. To the west, Linton Park and the lands west of the Parkway are part of the NCC Greenbelt and could provide recreational opportunities. The Sawmill Creek Constructed Wetland is not visible from the Parkway, however, it provides

recreational uses and facilitates stormwater treatment. The CN train overpass and overhead electrical transmission lines are the most visible built forms along this section of the Parkway.

Figure 3-9: Landscape Inventory - Walkley Road to Greenboro Trillium Line Station

3.3.3.3 *Greenboro Trillium Line to Hunt Club Road*

The Sawmill Creek constructed wetland runs parallel to Airport Parkway from the Greenboro Trillium Line station to north of Hunt Club Road. The overhead electrical transmission lines and apartment buildings in the South Keys area are visible from the Parkway. Large trees along the west screen the adjacent residential area from the Parkway. The new Airport Parkway pedestrian bridge provides a visual link across the parkway, and is a symbol of Ottawa's commitment to multi-modal transportation as it provides pedestrian and cycling connection from Greenboro station to the Sawmill Creek pathway. Figure 3-10 displays the landscape features in this area.

3.3.3.4 *Hunt Club to Ottawa International Airport*

South of Hunt Club Road, the Airport Parkway is rural in its visual features and roadway cross-section. There are mown meadow-like conditions along the western roadside and ingrown fallow meadow with young trees beyond. The Parkway passes through several mature hedgerows. This portion of the Parkway, as depicted in Figure 3-11 and 3-12, also passes through the NCC Greenbelt, with City lands between the Parkway and railway bed. Further to the south there is a woodland which consists primarily of Manitoba maple, elm, ash, with some pockets of red maple and trembling aspen.

Figure 3-10: Landscape Inventory – Greenboro Trillium Line Station to Hunt Club Road

Figure 3-11: Landscape Inventory – Hunt Club Road to Ottawa International Airport, North Section

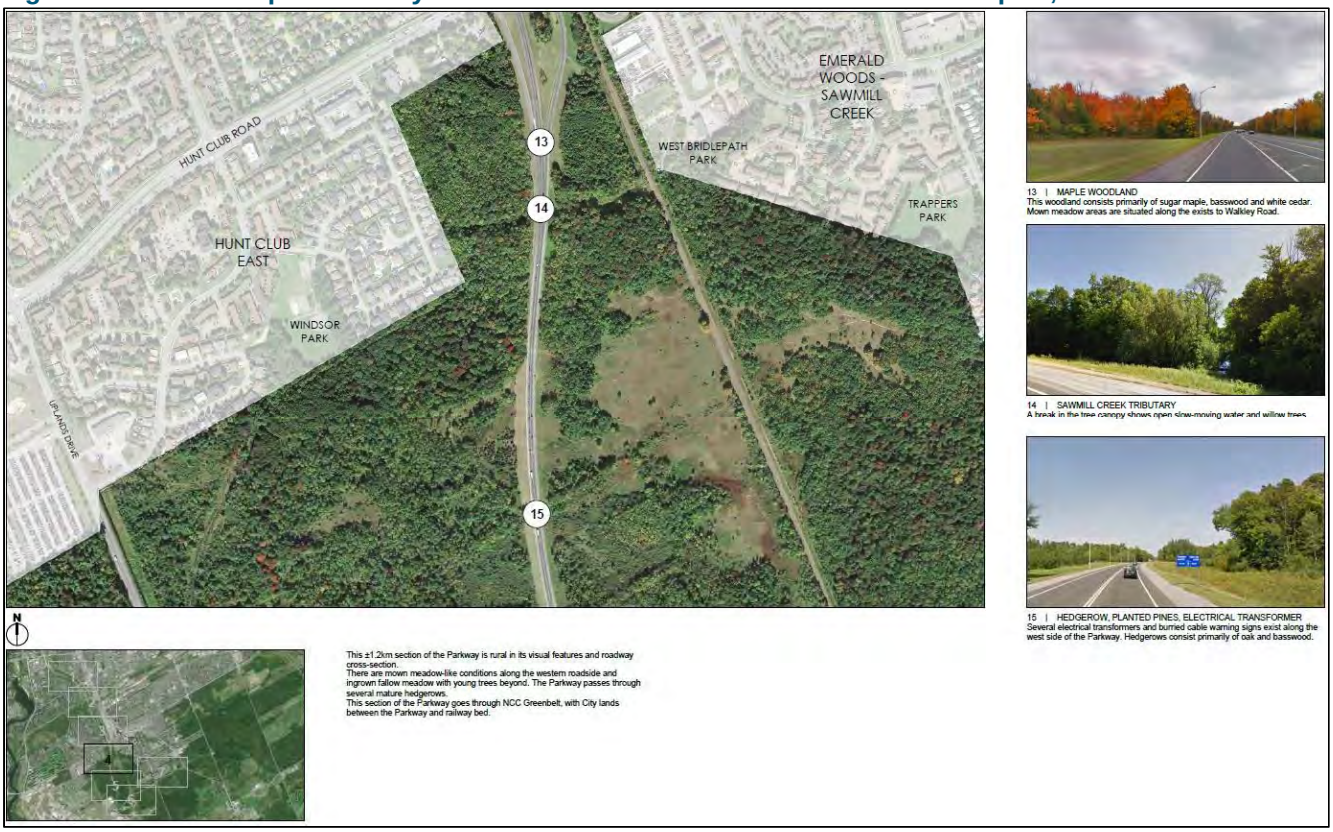


Figure 3-12: Landscape Inventory – Hunt Club Road to Ottawa International Airport, South Section

3.3.3.5 *Intersection of Airport Parkway and Lester Road*

In the vicinity of the Ottawa International Airport, the Airport Parkway intersects with Uplands Drive and Lester Road. Lester Road begins on higher land and descends eastward into lowlands and wetland areas. Bicycle lanes exist on the south and north side of Lester Road for ±0.8 km east of the Parkway, and for ±1.2 km west along the north side of Uplands Drive. Figure 3-13 shows the landscape features near the Ottawa International Airport.

3.3.3.6 *Lester Road*

To the south of Lester Road there is a continuous lowland wooded area, with the exception of several homes at the east near Bank Street. The road is mostly located within the NCC Greenbelt lands. North of Lester Road there is a small screening of upland trees including sugar maple. There is a section of NCC Greenbelt west of Albion Road which includes the Greenbelt Riding School. Figure 3-14 provides an overview of the landscape conditions along Lester Road.

Figure 3-13: Landscape Inventory – Intersection of Airport Parkway and Lester Road

Figure 3-14: Landscape Inventory – Lester Road

3.3.4 Archaeological and Built Heritage Conditions

Golder Associates Ltd. (Golder) performed a Stage 1 Archaeological Assessment of the Study Area which consisted of a desktop and background review. The full report is included in Appendix B - Supporting Reports. The Stage 1 Report investigates the Airport Parkway and Lester Road alignment within the Study Area as well as a buffer area of 100 m to either side of roadways. With regard to built heritage resources and landscapes, the study team corresponded with the City of Ottawa Heritage staff to determine the presence of these values in the corridor. City staff confirmed that at present time, there are no designated features or features of interest within the study area. The City is currently completing an update to the City's heritage inventory which should be completed in 2018.

Although the Airport Parkway is not a historic corridor, it is adjacent to the original rail bed for the Bytown and Prescott Railway, which is Ottawa's first rail line. Due to the proximity of the corridor to waterbodies and other smaller historic corridors, and as outlined in the City of Ottawa Archaeological Master Plan, there is archaeological potential within a large portion of the Study Area. It was recommended that a Stage 2 archaeological assessment should only be conducted within areas to be impacted by the planned construction activities which have archaeological potential as shown in Figure 3-15 and Figure 3-16.

Figure 3-15: Archaeological Potential - Airport Parkway

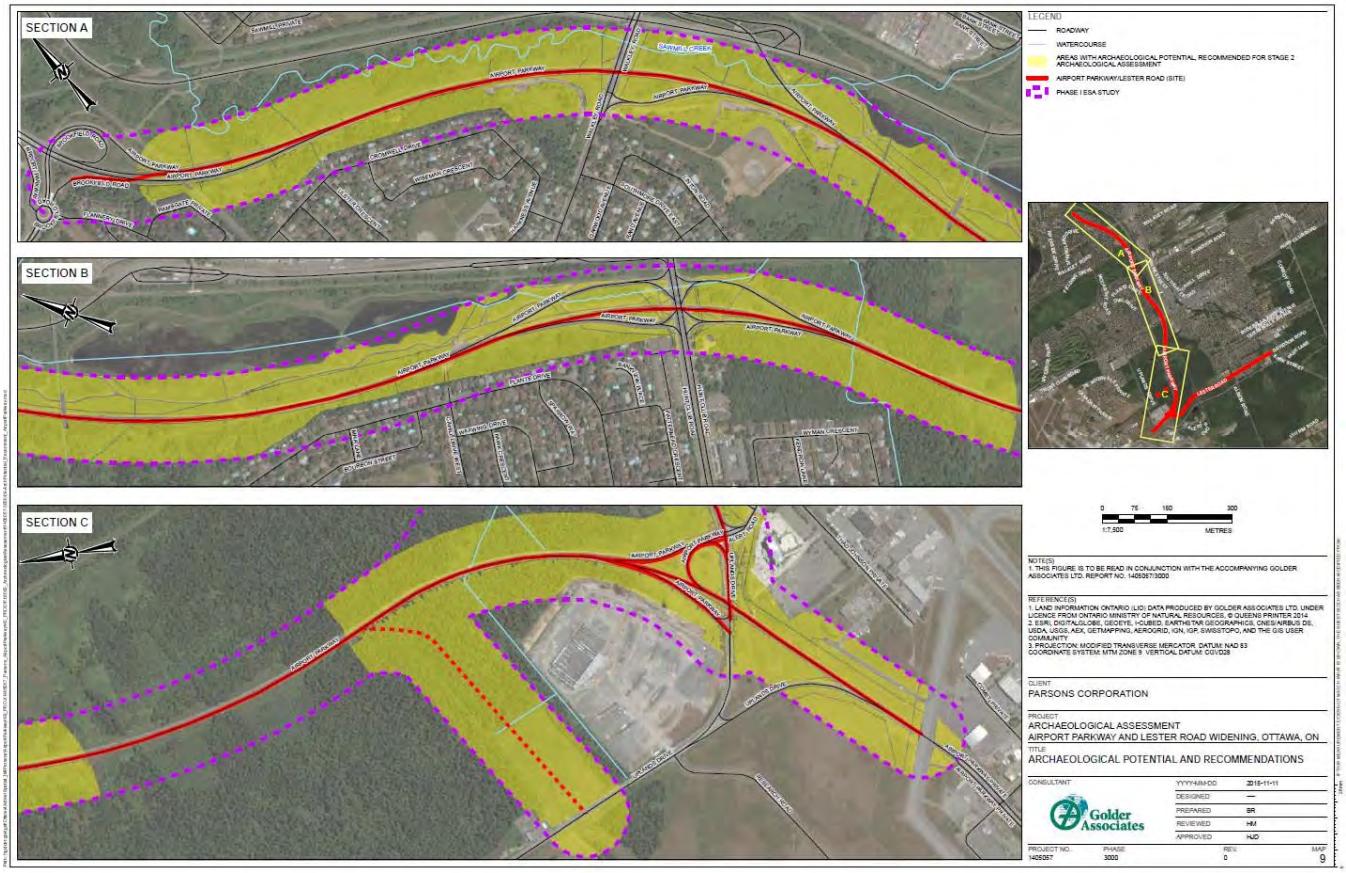
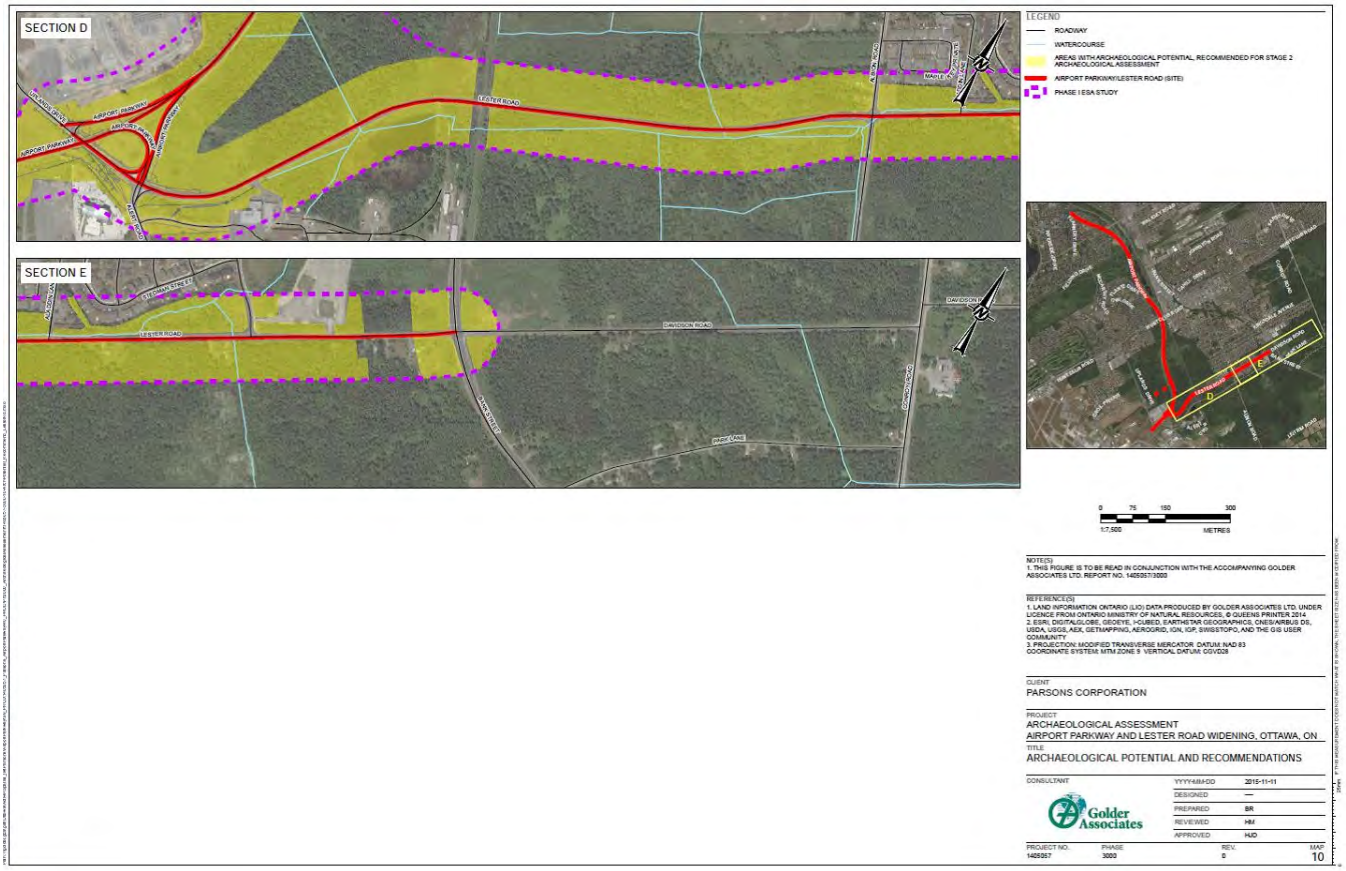


Figure 3-16: Archaeological Potential - Lester Road



3.3.5 Air Quality

Gradient Wind Engineering Inc. (GWE) conducted a qualitative study of air quality in the study area. The existing air quality conditions in the study area were qualitatively summarized and compared to Ministry of Environment and Climate Change (MOECC, formerly Ministry of the Environment, MOE) standards. A full copy of the study can be found in Appendix B - Supporting Reports. Roadway vehicle traffic is the primary source of airborne pollutants in the study area. Stationary pollution sources such as emergency diesel generators, steam and hot water boilers, laboratory fume hoods, etc, also exist in the study area. Ambient air quality levels are influenced by emissions from both roadway vehicles and stationary sources. These emissions can include, but are not limited to, carbon monoxide (CO), hydrocarbons (HC), oxides of nitrogen (NO_x) and particulate matter (PM).

The assessment of ambient air quality requires estimating the concentrations of the noted pollutants, measured in either parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$), and comparing them to air quality standards. To estimate ambient concentrations of pollutants in the air within the study area, data were retrieved from the MOECC permanent monitoring station located at 960 Carling Avenue. The values reported by this monitoring station represent regional conservative estimates of the 90th percentile ambient air quality levels. The 90th percentile represents the concentration of pollutants that, 90% of the time, the actual background concentrations will fall below. These concentrations are compared to the following standards issued by the MOE:

(i) Ambient Air Quality Criteria (AAQC): these criteria are the MOE targets for clean air from all sources of pollutants, including transit, transportation, and industrial facilities;
(ii) Ontario Regulation 419/05 – Air Pollution Local Air Quality Standards: this standard describes the legal limits for single or multiple emission sources falling within a single property.

Table 3-3 compares the 90th percentile concentration of pollutants from the monitoring station located at 960 Carling to the AAQC and O.Reg. 419/05 air quality standards.

Table 3-3 Ambient Air Quality Background Levels Compared to MOE Air Quality Standards

Pollutant	AAQC Concentration (µg/m^3)	O.Reg. 419/05 Concentration (µg/m^3)	90th Percentile Concentration from Nearby Monitoring Station (µg/m^3)
Carbon Monoxide (CO)	36200 (1 hr), 15700 (8 hr)	6000 (0.5 hr)	493
Hydrocarbons (HC)	2500 (24 hr)	2500 (24 hr)	Not available
Oxides of Nitrogen (NO_x)	400 (1 hr), 200 (24 hr)	400 (1 hr), 200 (24 hr)	36
PM10, <10 microns	50 (24 hr)	No standard	Not available
PM2.5, <2.5 microns	30 (24 hr)	No standard	10

Based on the AAQC, recorded ambient levels and land usage in the study area, the following categories described air quality conditions found within the study area.

- Elevated: Selected pollutants are expected to approach AAQC standards on a regular basis, or occasionally exceed them;
- Moderate: Selected pollutants are expected to approach AAQC standards occasionally; and
- Low: Selected pollutants are expected to rarely approach AAQC standards.

Figure 3-17 and Figure 3-18 illustrate the ambient air quality levels across the study area. The concentrations of pollutants produced by vehicle emissions are low throughout the study area. With respect to commercial, industrial, and institutional facilities, these facilities are assumed to have undergone screening under the MOECC's Environmental Compliance Approvals (formally Certificate of Approval) process and O.Reg. 419/05, and are not considered to have significant impacts.

Figure 3-17: Air Quality Contours – North Section of Study Area

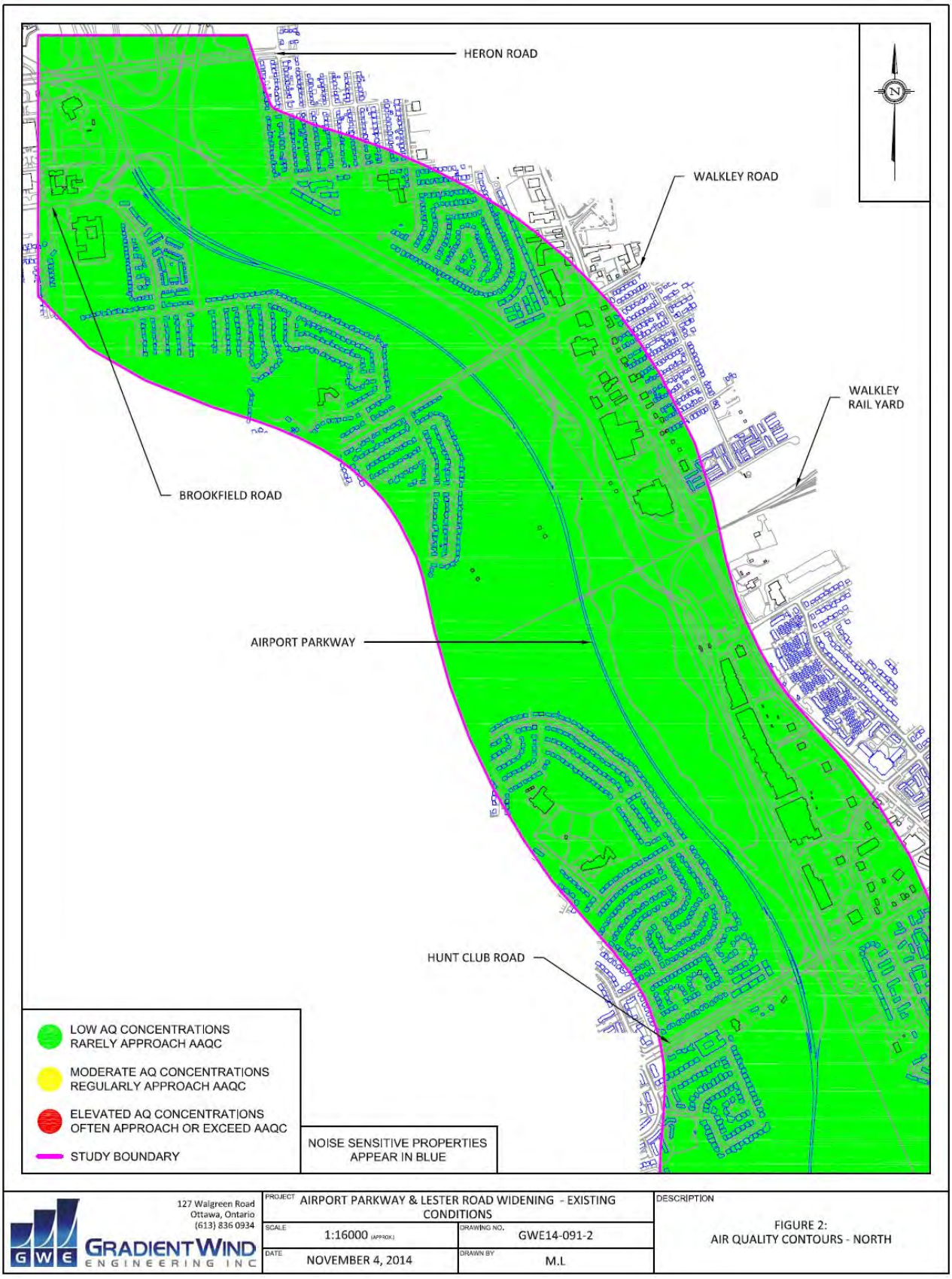
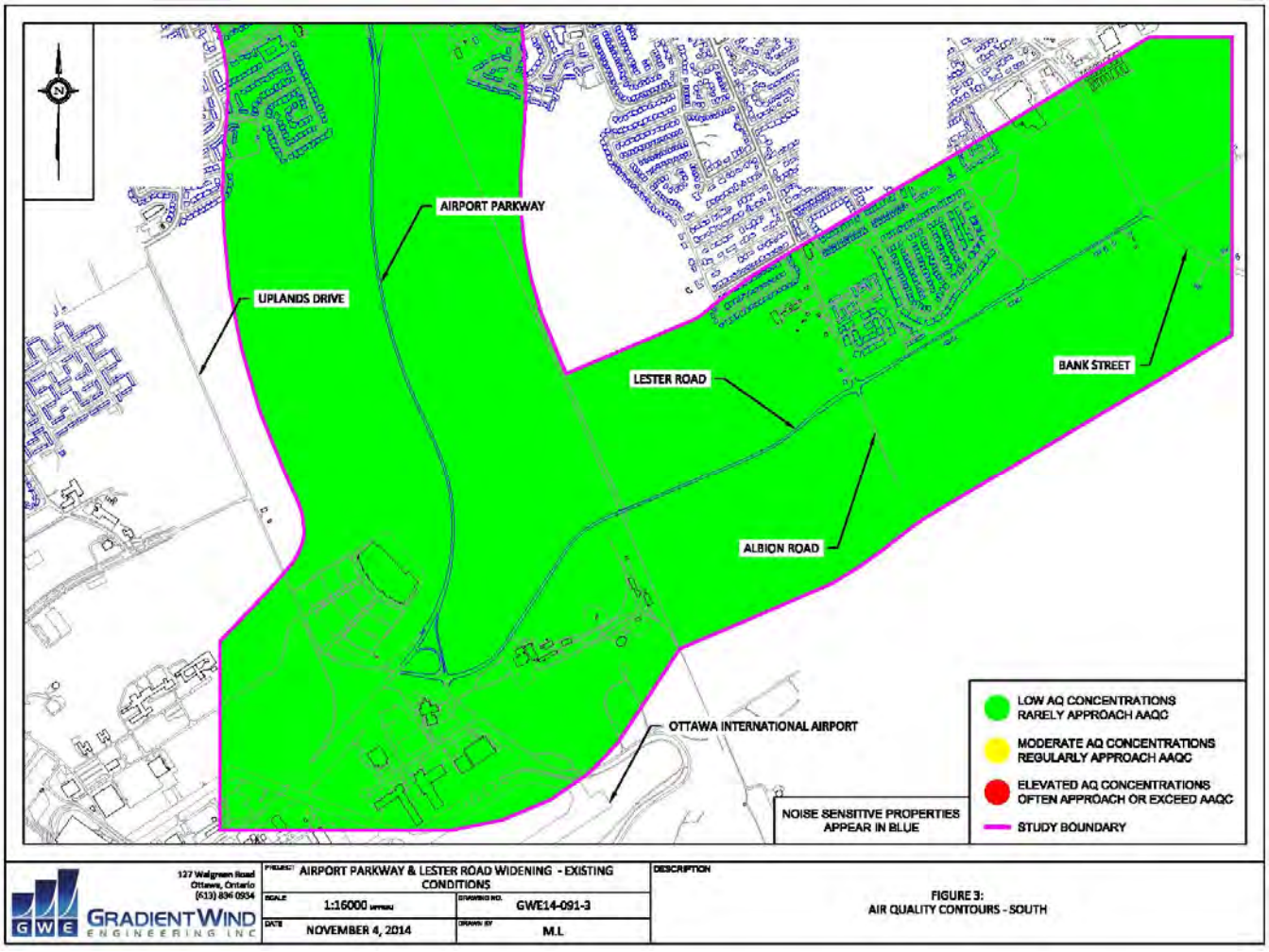


Figure 3-18: Air Quality Contours – South Section of Study Area



3.3.6 Noise

A noise brief completed for the project can be found in Appendix B - Supporting Reports. Vehicular and rail traffic are the primary sources of environmental noise in the study area. Stationary noise sources such as emergency generators, cooling towers, etc. also exist within the study area. The Walkley Rail Yard is a notable source of noise in the study area. The Ottawa International Airport will also have a significant noise impact on the surrounding area due to aircraft take offs and landings.

The quantification of roadway noise is based on the decibel unit, dBA, which is a logarithmic ratio referenced to a standard noise level. The 'A' suffix refers to a weighting scale, which represents how noise is perceived by humans. The results of roadway noise calculations are expressed in terms of the equivalent sound level, L_{EQ}, for daytime and nighttime periods. The L_{EQ} provides a weighted measure of the time varying noise levels produced by vehicle traffic. For roadways in the City of Ottawa, the L_{EQ} is calculated based on a 16 hour daytime / 8 hour nighttime split.

Noise impacts from aircraft noise are based on a site's proximity to the Ottawa International Airport. The Ottawa Airport Operating Influence Zone (OAOIZ) and the Ottawa Airport Vicinity Development Zone (OAVDZ) are zones surrounding the airport that are defined by the noise levels they are exposed to. Recorded noise levels are plotted geographically to create contour maps of noise, which aided in defining

the boundaries of these two zones. The operating zone corresponds to the area surrounding the airport, where noise-sensitive development is not permitted. Noise from aircraft flight, take-offs, landings, and ground operations contribute to this area having an equivalent sound level of 60 dBA. The development zone is located further from the airport and has a lower equivalent sound level of 55 dBA.

The City of Ottawa produced a comprehensive technical document called the Environmental Noise Control Guidelines (ENCG). These guidelines outline the assessment and control of noise impacts within the City of Ottawa. According to the ENCG, a daytime L_{EQ} of 55 dBA or lower is acceptable for outdoor living areas, and mitigation measures are required as noise levels exceed 60 dBA. Examples of noise sensitive areas include residential and institutional land uses such as schools, hospitals, and places of worship. Based on the ENCG, the following categories are applicable to describe the existing noise conditions in the study area:

- Elevated: Daytime L_{EQ} noise levels at receivers are expected to exceed 60 dBA;
- Moderate: Daytime L_{EQ} noise levels at receivers are expected to fall in the range of 55 to 60 dBA; and
- Low: Daytime L_{EQ} noise levels are expected to fall below 55 dBA.

Figure 3-19 and Figure 3-20 illustrate the noise levels in the study area. Environmental noise levels range from low to elevated throughout the study area. The noise levels are dictated by proximity to high-volume roadways, the Ottawa International Airport and Trillium Line. Beyond 120 m from arterial roadways, noise levels fall below the ENCG objective of 55 dBA. In the southern section, noise levels are elevated and are highly influenced by aircraft noise within the Ottawa Airport influence zone. With respect to stationary noise sources, the noted industrial and commercial facility types are considered to have undergone screening under MOE's Environmental Compliance Approval process and NPC-3007, and their impacts on overall noise levels within the study area are assumed to be negligible.

Figure 3-19: Noise Contours - North Section of Study Area

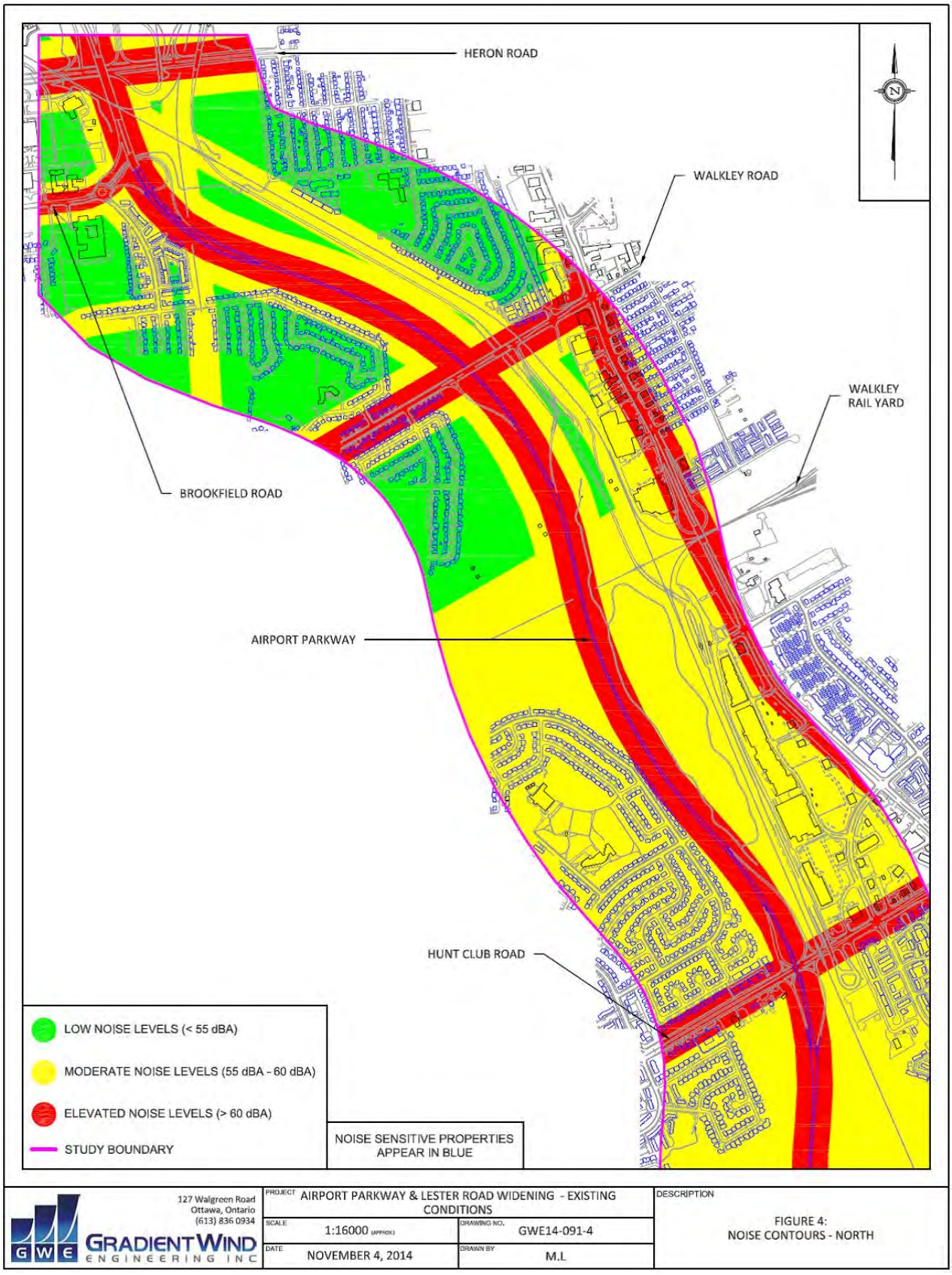
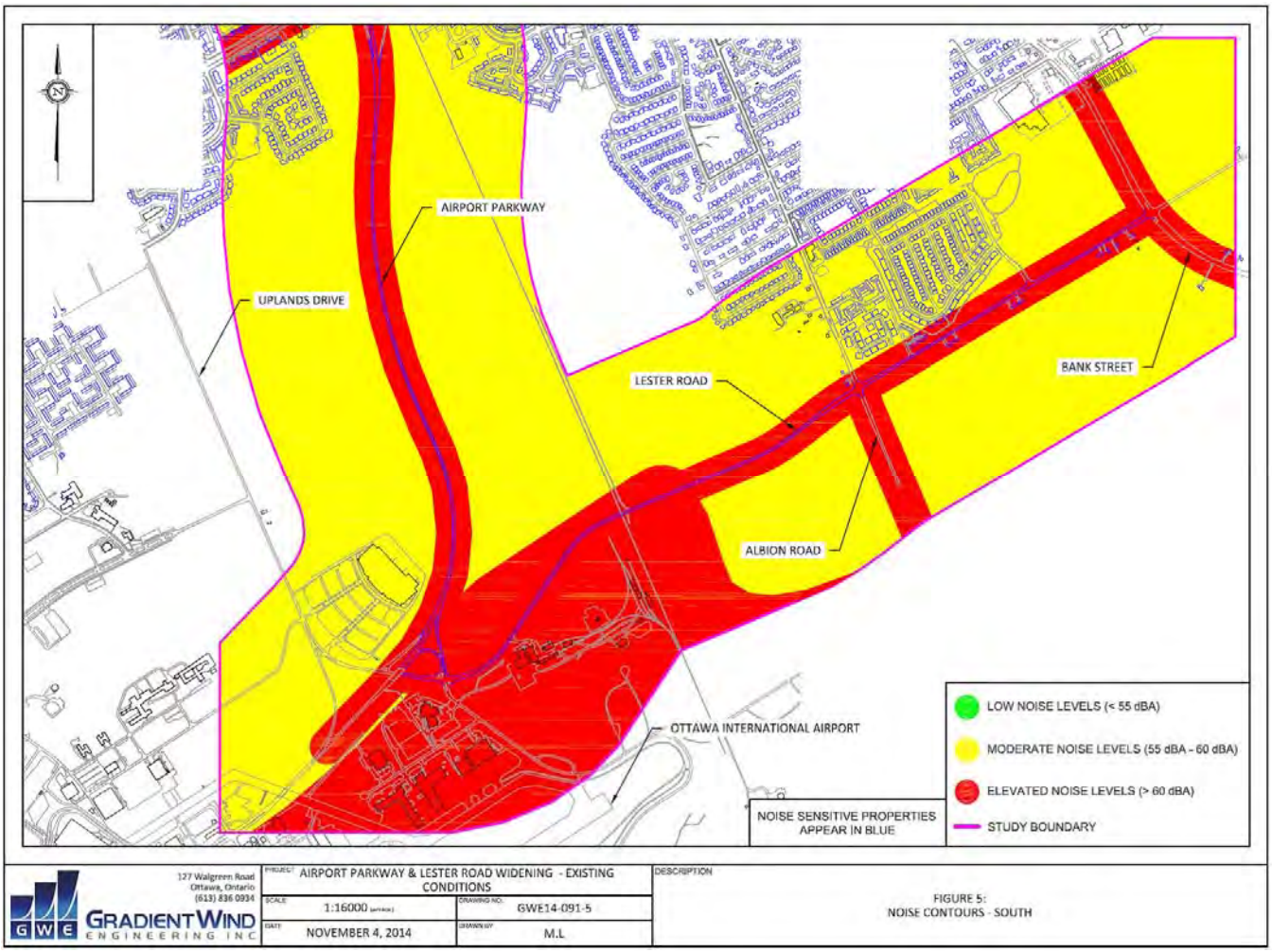


Figure 3-20: Noise Contours – South Section of Study Area



3.3.7 Vibration

Railways and heavy vehicles (trucks and buses) passing over uneven roadway surfaces can produce perceptible levels of ground vibrations, and incidentally ground-borne noise. Human response to ground vibrations is measured by the root mean square (RMS) of the movement of a particle on a surface. Typical units of ground vibration measures are millimeters per second (mm/s), or inch per second (in/s). Since vibrations can vary over a wide range it is also convenient to represent them in decibel units, of dBV, referenced to one micro inch per second.

Vibration criteria for a variety of building functions have been established by the International Standards Organization, the United States Federal Transportation Authority, the MOE and the Toronto Transit Commission, among others. According to these standards, the appropriate criteria for residential buildings are 0.1 mm/s RMS (72 dBV) for vibrations.

Based on the ground vibration criteria for human perception, the following categories are applicable to describe the existing ground vibrations within the study area:

- Elevated: Vibrations at receptors exceed 1 mm/s (92 dBV) rms particle velocity and are likely to cause adverse reactions with building occupants;

- Moderate: Vibrations at receptors fall between 0.1 mm/s (72 dBV) to 1 mm/s (92 dBV) rms particle velocity and will be noticeable but will not cause adverse reactions in the building occupants; and
- Low: Vibrations at receptors fall below 0.1 mm/s (72 dBV) and will not be noticeable to building occupants.

Figure 3-21 and Figure 3-22 illustrate the vibrations in the study area. The estimated ground vibration levels are generally low, and fall below the human perception level of 0.1 mm/s (72 dBV), in areas located at least 50 meters away from the Trillium Line, or arterial roadways. Within these distance limits, the impacts of ground vibrations gradually increase to moderate levels with increasing proximity to roadways. Ground-borne noise levels produced by ground vibrations have similar impacts.

Figure 3-21: Vibration Contours – North Section of Study Area

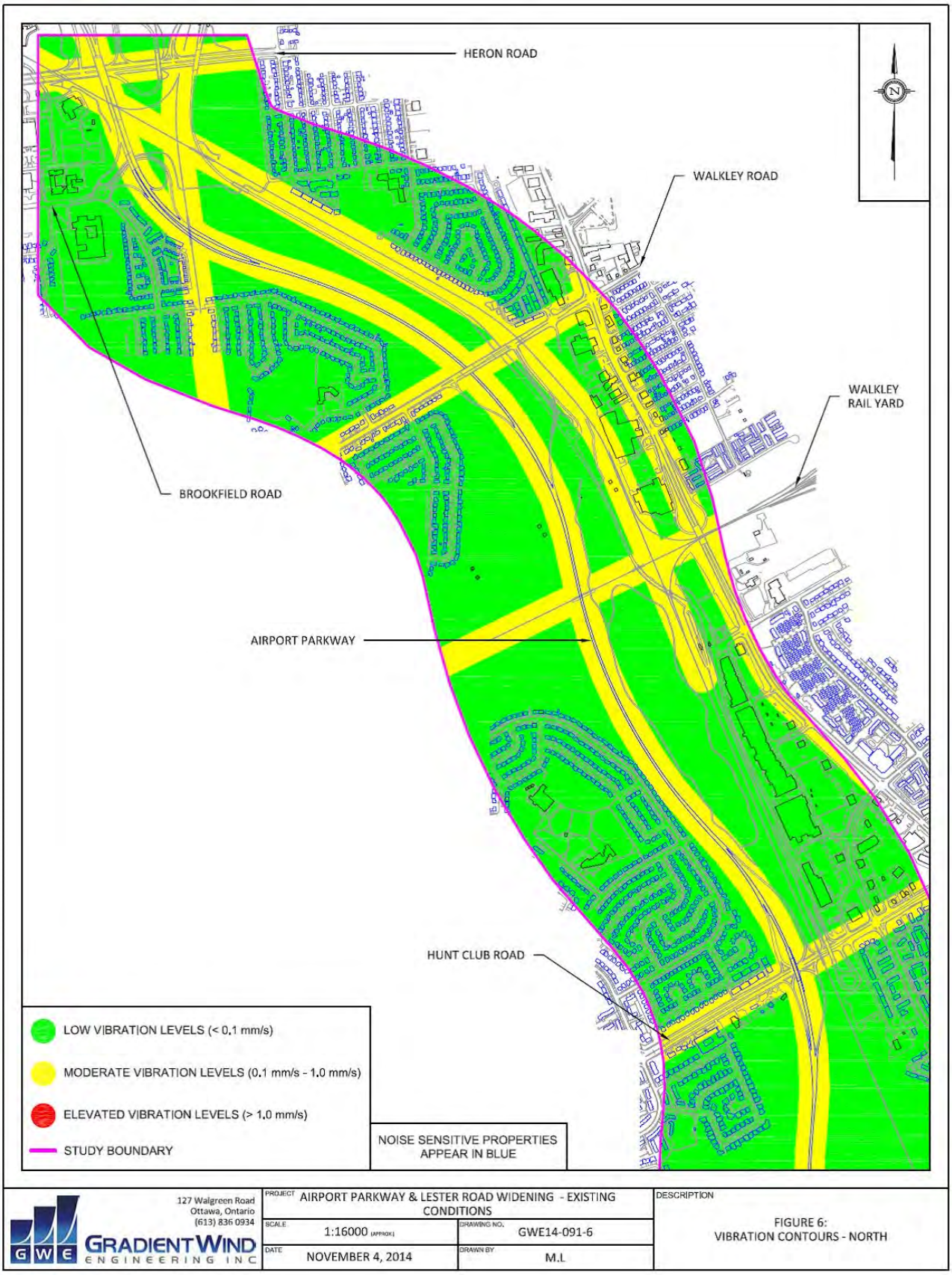
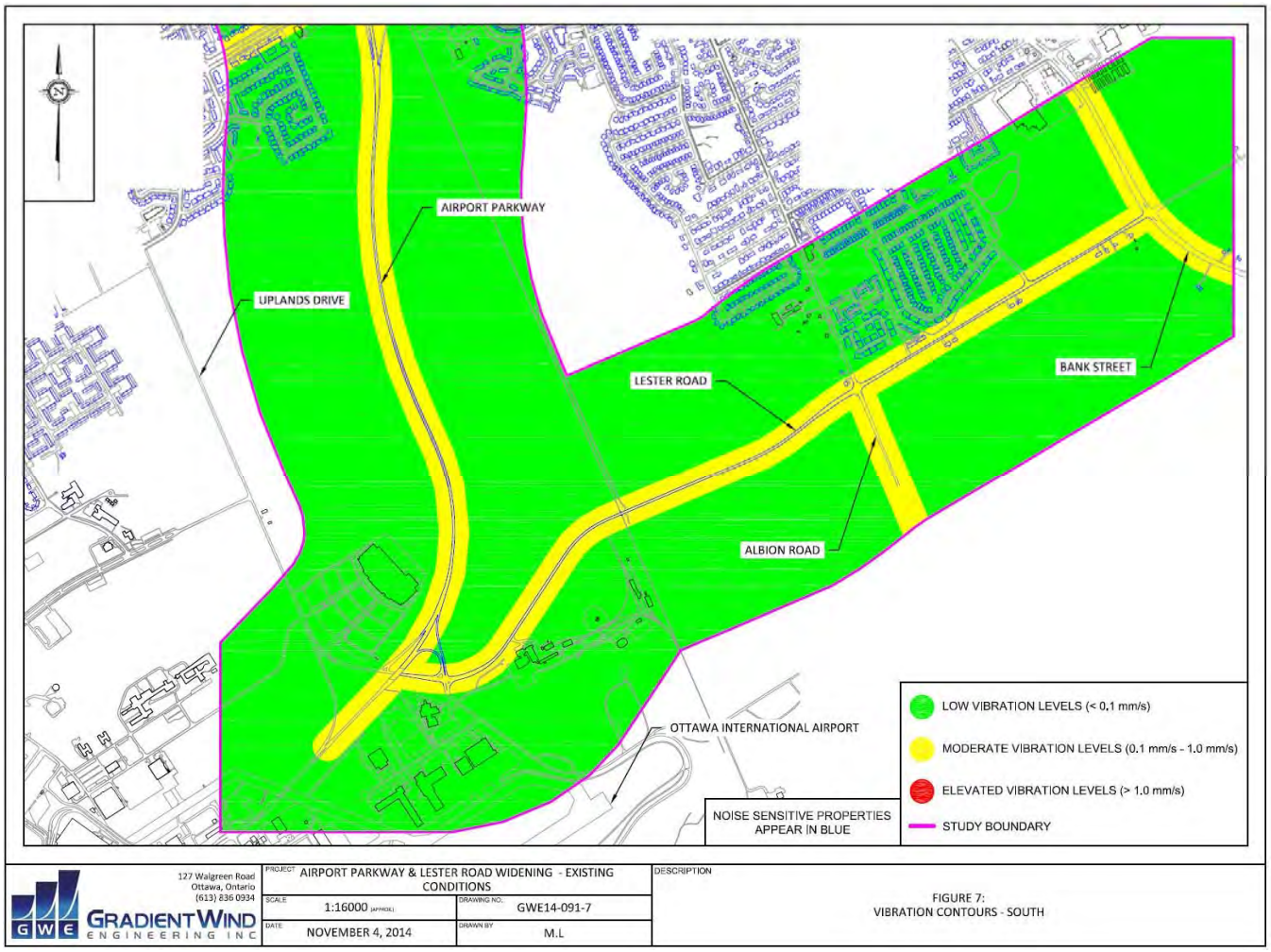


Figure 3-22: Vibration Contours - South Section of Study Area



3.3.8 Infrastructure and Utilities

This section summarizes existing utilities and infrastructure along the Airport Parkway Corridor between Brookfield and Lester Road and along Lester Road from the Airport Parkway and Bank Street.

3.3.8.1 *Water Distribution System*

Existing Water Distribution System

The public water distribution system within the Airport Parkway Corridor includes feedermains, watermains, valves, and hydrants. The corridor is split between pressure zones 2C (Brookfield Road to Hunt Club Road) and 3C (Hunt-Club Road to Lester Road) and is serviced by Elevated tanks at Conroy Road and the Ottawa South Reservoirs respectively. Watermains within the project limits are summarized in Table 3-4 and Table 3-5 below. The oldest watermain in the study area was installed in 1961.

Table 3-4: Watermains Routed along Airport Parkway and Lester Road Corridors

Section	Limits	Diameter (mm)	Material	Year Installed
Phase 1: Airport Parkway – Brookfield to Hunt Club	11+556 (North of Rail Line) to 13+196 (South of Hunt Club rd.)	1050 x 1200	C01	1974

Table 3-5: Watermains Routed along Airport Parkway and Lester Road Corridors

Section	Crossing	Diameter (mm)	Material	Year Installed
Phase 1: Airport Parkway – Brookfield to Hunt Club	At Brookfield	305	-	-
	11+005 At Walkley Road (south side)	406	CI	1961
	12+740 At Cahill	406	-	-
Phase 2: Lester Road – Airport Parkway to Bank Street	N/A			
Phase 3a: Airport Parkway – Hunt Club to Lester	13+292 At Hunt Club	610	C01	1995
	13+329 At Hunt Club (South Side)	406	DI	1975
Phase 3b: Road Link to Uplands	N/A			

Note: C01 – Concrete Pressure Pipe, CI – Cast Iron, DI – Ductile Iron

The 2013 Infrastructure Master Plan (IMP) indicates that the area North of Hunt-Club Road is within the public service area, while the area South of Hunt-Club Road is within the Ottawa Greenbelt

3.3.8.2 *Future Water System Projects*

The 2013 IMP does not identify any growth related water projects within the Airport Parkway Corridor. Although the Ottawa South Pump Station (OSPS) Expansion and the Ottawa South Reservoir (OSR) Expansion are identified within the IMP, they are to be located south of the study area between Lester Road and Leitrim Road, at the existing Ottawa South Pump Station and Reservoir. The OSPS expansion is to provide dual zone service and to increase capacity for the 2031 peak demands to Uplands Zone as well as contribute to the 2031 peak demand and back-up supply to other zones. The OSPS expansion works are to be coordinated with budgeted 2022 electrical renewal projects as well as future capacity needs. The OSR expansion is to add storage volume. The timing of this work will be determined based upon the OP projections and the development needs.

Schedule B of the City's OP identifies the Airport Parkway as Major Open Space with fully developed General Urban Area on either side. Therefore the area does not present any water expansion needs for the corridor. The land along the north side of Lester Road is identified as General Urban Area where the majority is currently developed. The remaining adjacent lands are identified as a mixture between Natural

Environment Area, Green Belt Rural and Provincially Significant Wetlands. Therefore the area does not present any water expansion needs along the corridor.

3.3.9 Wastewater System

3.3.9.1 *Existing Wastewater System*

There are no public sanitary sewers directly routed along the Airport Parkway, however there are several sanitary sewers that cross the Airport Parkway. The majority of the sanitary crossings are City sewage collectors and trunks (Figure 3-23).

Three (3) sanitary trunk/collectors and one (1) local sanitary sewer cross the Airport Parkway (Figure 3-24). The first collector that crosses the Airport Parkway near Cromwell Avenue east of Brookfield is the Rideau River Collector. The second is the South Ottawa Collector that crosses north of the rail tracks. The Airport Parkway trunk crosses just south of the rail tracks and ultimately connects to the South Ottawa Collector. A fourth sewer, which services the South Keys area, is routed along and crosses the corridor north of Hunt Club Road. The properties lining the Airport Parkway are also served by public wastewater systems. Sanitary sewer systems identified within the immediate proximity of the project corridors are summarized in Table 3-6 and Table 3-7**.**

Figure 3-23: Watermains located within the Study Area

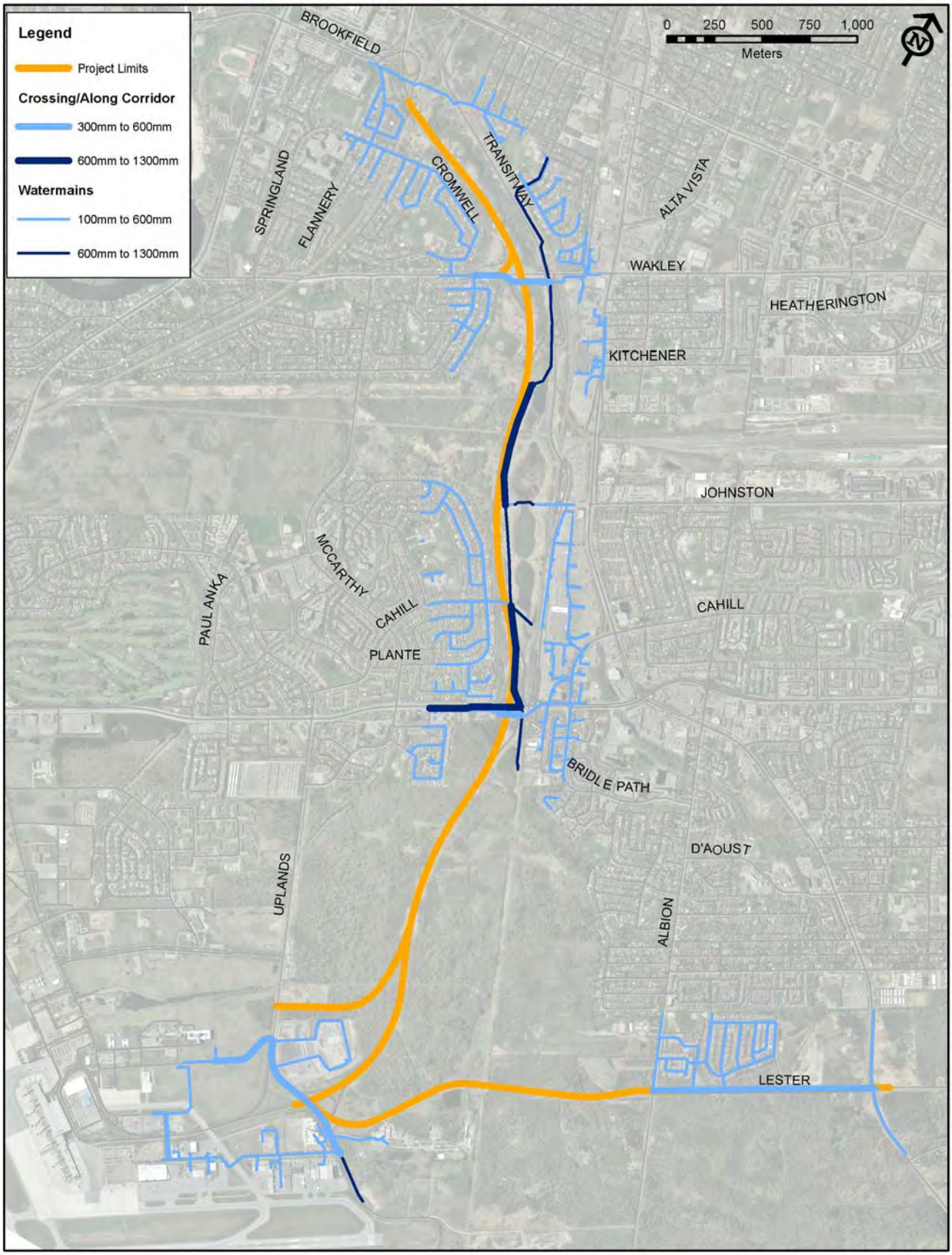


Figure 3-24: Sanitary Sewers located within the Study Area

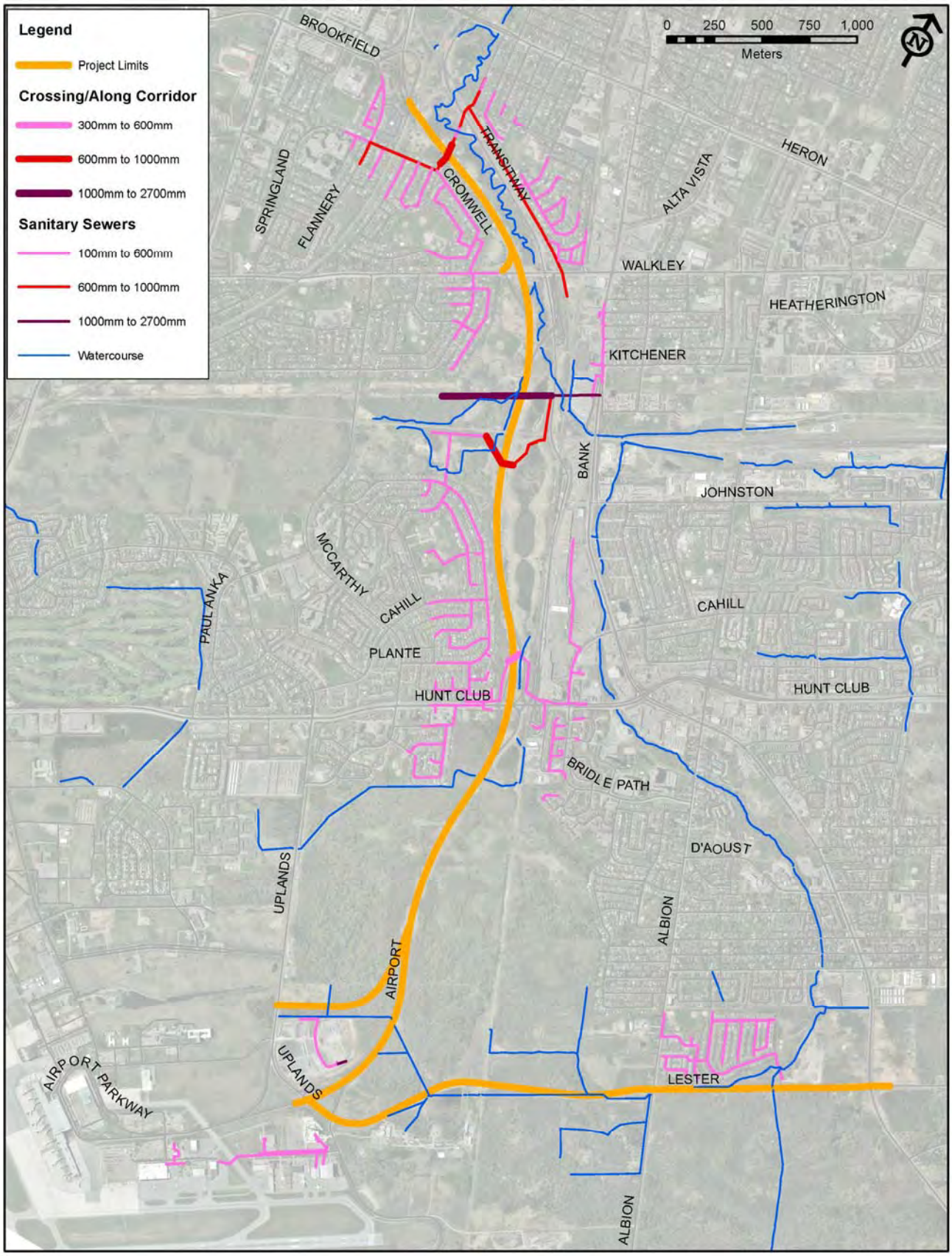


Table 3-6: Sanitary Sewers/Forcemains Routed Along the Airport Parkway and Lester Road Corridors

Section	Limits	Diameter (mm)	Material	Year Installed
Phase 1: Phase 1: Airport Parkway – Brookfield to Hunt Club	13+060 to 13+268 (Hunt Club rd.)	450	-	-

Table 3-7: Sanitary Sewers/Forcemains Crossing the Airport Parkway and Lester Road Corridors

Section	Crossing	Diameter (mm)	Material	Year Installed
Phase 1: Phase 1: Airport Parkway – Brookfield to Hunt Club	At 10+230 Rideau River Collector	675	CONR	1961
	At 11+629 South Ottawa Collector	2700	CONC	1977
	At 11+997 Airport Parkway Trunk	600	CSPA	1972
	At 13+036	450	PVC	1999
	At 13+243 (potentially abandoned)	450	PVC	unknown

The 2013 IMP indicates that the area North of Hunt-Club Road is within the public service area, while the area South of Hunt-Club Road is within the Ottawa Greenbelt

3.3.9.2 *Future Wastewater Projects*

The 2013 IMP identifies the need to upgrade Rideau River Collector to provide additional capacity for intensification projected to be constructed during 2025-2031. The upgrade includes the replacement of approximately 500 m (Station 10+230) of collector pipe located along the Airport Parkway south of Heron Road and North of Walkley Road.

3.3.10 Stormwater/Drainage System

3.3.10.1 *Existing Stormwater Drainage*

The study corridor is located within the Rideau Valley Conservation Authority watershed and is fed by a tributary from the Lower Rideau subwatershed and specifically, the catchment area of Sawmill Creek. Although there are some piped storm sewers, the Airport Parkway Corridor is predominantly a rural-type cross section with gravel shoulders and roadside ditches with many sections having dense brush and/or forest congesting the roadside ditches. There is currently an existing road side ditch along the west side of the Parkway. The lands adjacent to the Airport Parkway along the east side are natural land with an elevation lower than the Parkway centerline crest elevation. Much of the east side road drainage flows through a combination of roadside ditches and/or sheet flows overland into Sawmill Creek ultimately reaching the Rideau River.

Lester Road is parallel with the upstream reaches of Sawmill Creek. The OMCIA, located at the upstream (west) end has an existing Stormwater Management facility that discharges into the ditch along the south side of Lester Road, also known as the Alexander Drain. The drain runs parallel to Lester Road crossing east across Albion Road and north across Lester Road to become Sawmill Creek. The lands south of Lester Road area are identified as the Lester Road Wetland Complex and ultimately contribute flow to Sawmill Creek.

There are a limited amount of piped storm sewer systems that exist within the study corridor (Figure 3-25). The majority of pipes are located just south of Walkley Road and extend further south to the railway crossing. This piped system collects drainage in a section of roadway beneath the railway overpass that is lower than the surrounding lands and discharges to the north into Sawmill Creek. Similarly, there are piped sections at the Hunt Club Road & Lester Road interchanges that drain localized areas of the roadway. Additionally, there are a number of storm sewers which cross the Airport Parkway at Brookfield Road, Walkley Road, Hunt-Club Road and Lester Road to service developments on either side of the Parkway. The storm sewer systems include sewers, culverts and maintenance holes. Storm sewers within the corridor and crossings are summarized in Table 3-8 and Table 3-9**.**

Figure 3-25: Storm Sewers located within the Study Area

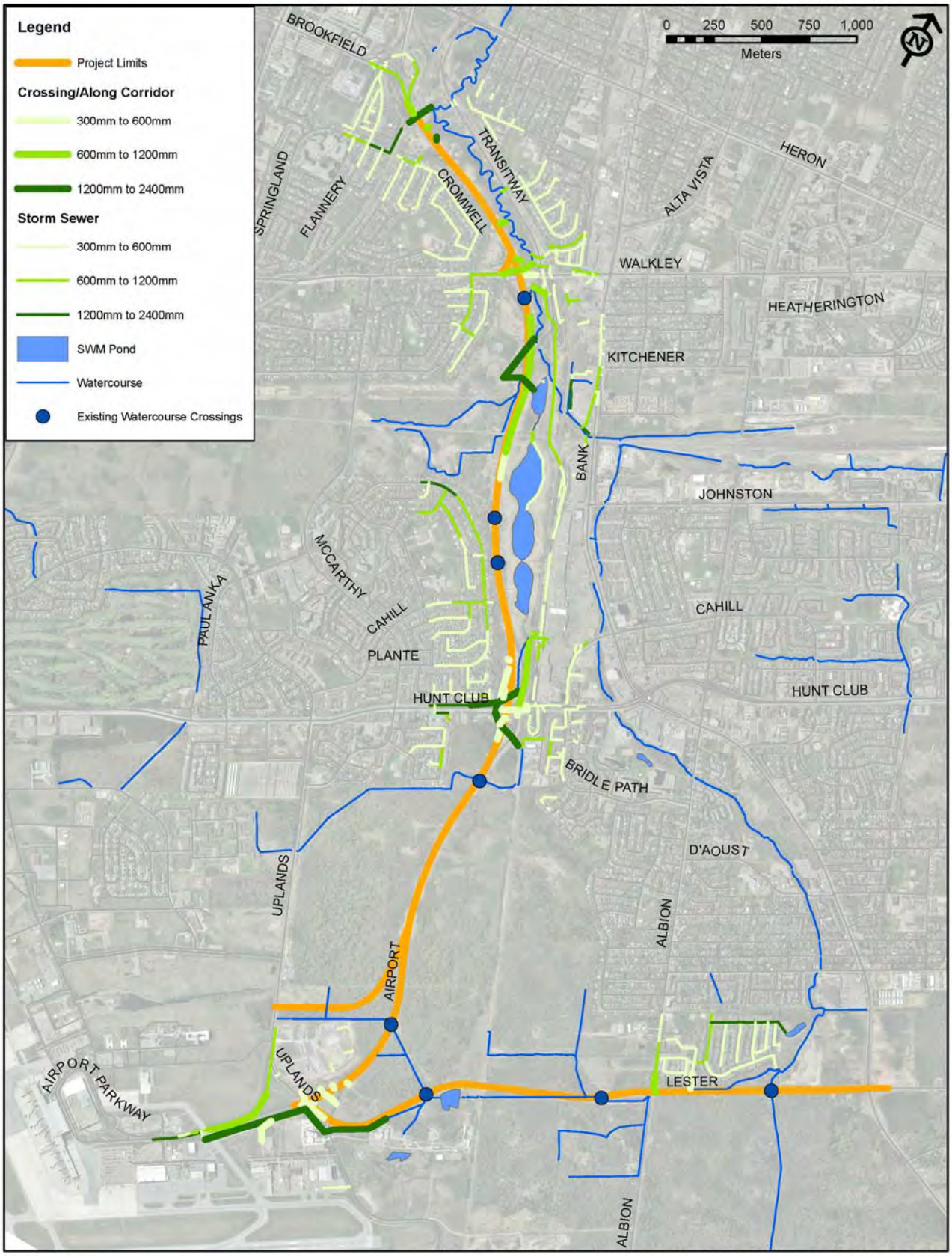


Table 3-8: Storm Sewers Routed Along the Airport Parkway and Lester Road Corridors

Phases (TMP 2013)	Limits	Diameter (mm)	Material	Year Installed
Phase 1: Airport Parkway – Brookfield to Hunt Club	11+196 to 12+065	600 to 1200	CONC	1971
	13+083 to 13+255	300	PVC	1999
Phase 2: Lester Road – Airport Parkway to Bank	19+912 to20+077	1800	-	-
	21+506 to 21+535	Culvert	-	-
	21+720 to 21+745	Culvert	-	-
Phase 3a: Airport Parkway – Hunt Club to Lester	12+949 to 13+315 (along on-ramp)	450 to 900	CONR	1974
	13+405 to 13+464	300	-	-
Phase 3b: Road Link to Uplands Drive	N/A			

Table 3-9: Storm Sewers Crossing the Airport Parkway and Lester Road Corridors

Section	Crossing	Diameter (mm)	Material	Year Installed
Phase 1: Airport Parkway – Brookfield to Hunt Club	9+965	1800	CONC	-
	10+049	825	CONC	2013
	10+136	1350	CONC	2013
	10+138	CULVERT	-	-
	10+679	825	CONC	2013
	10+887	825	CONC	2013
	10+887	CULVERT	-	-
	10+938 (North of Walkley Rd.)	1050	CONC	-
	11+099	CULVERT	-	-
	11+217	CULVERT	-	-
	11+345	2100	CONR	1973
	11+539	1350	CONC	2007
	12+277	CULVERT	-	-
	12+513	CULVERT	-	-
	13+001	CULVERT	-	-
	13+006	culvert	-	-
	13+016	culvert	-	-
	13+222	2400	-	-
	13+270	300	-	-
Phase 2a: Lester Road – Airport	20+324	CULVERT	-	-
	20+327	CULVERT	-	-

Section	Crossing	Diameter (mm)	Material	Year Installed
Parkway to Lester	20+551	CULVERT	-	-
	21+181	CULVERT	-	-
	21+436	CULVERT	-	-
	21+551 Sawmill Creek	CULVERT	-	-
	21+903	CULVERT	-	-
	22+150 Lester Road Wetland Complex	CULVERT	-	-
	22+647	CULVERT	-	-
Phase 3a: Airport Parkway – Hunt Club to Lester Road	Culvert	300	-	-
	13+344	300	-	-
	13+401	1800	-	-
	13+702 Cahill Drain	CULVERT	-	-
	14+869	CULVERT	-	-
	15+095	CULVERT	-	-
	15+097	CULVERT	-	-
Phase 3b: Road Link to Uplands Drive	N/A			

A three cell wetland with a total storage volume of 165,900 m³ is located on the east side of the Airport Parkway north of Hunt Club Road. Cell 1 act's as a forbay and wet pond with a storage volume of 59,000 m³ and flows into Cell 2, a 87,100 m³ wet pond. Both Cell 1 and 2 are located south of the CNR rail crossing and receive diverted flows from Sawmill Creek and Cahill Drain. The outflow from the pond crosses the railway through a culvert into Cell 3, a 19,800 m³ wet pond located on the North side of the railway. Cell 3 also receives flows from the lands along the east side of the creek and the diverted Plante Drive Sewer.

The existing surface drainage along much of the Airport Parkway is captured through a series of natural ditches and swales and ultimately discharges into Sawmill Creek.

3.3.10.2 *Future Stormwater/Drainage Projects*

The 2013 IMP does not identify any growth related stormwater management or related projects within the study corridor. A Rideau Valley Conservation Authority Report 'SAWMILL CREEK CATCHMENT: Lower Rideau River Subwatershed report 2012' brought attention to the need for runoff control and adequate slope stability for new development and re-development projects contributing to the Sawmill Creek watershed running along the majority of the corridor. The Sawmill Creek Subwatershed Study Update 2003 also outlines the importance of improving stormwater quality within the watershed.

3.3.11 Electric & Gas Utilities

The majority of the Airport Parkway study corridor exists as a rural-type cross section without many utilities. The area along Lester Road is equipped with existing power and communication utilities on overhead wood pole lines situated on the south side of the road. Natural gas services were not confirmed throughout the corridor.

Streetlights are located along the majority of the Airport Parkway on the west side. The streetlights power is typically supplied by underground wires from the neighbouring communities. Street lights along Lester Road are generally joint-use located on the hydro poles on the south side of the roadway. Several high-mast light poles are also located on the various overpass and ramps within the corridor.

Along the same alignment as the South Ottawa Collector (Station 11+629) a large overhead transmission line and an overhead Hydro Ottawa line cross the Airport Parkway.

3.4 Physical Environment

3.4.1 Geotechnical Conditions

Golder Associates Ltd. (Golder) collected and collated existing subsurface information obtained from previous subsurface investigations that were carried out in close proximity to the study area. The following geotechnical information was gathered for the study area: surficial geology, depth to bedrock, and bedrock geology. Golder also outlined areas of special concern that may require additional consideration with respect to design and construction of the widened roads. The geotechnical conditions vary throughout the study area, and are presented in a series of maps in the following sections.

3.4.1.1 *Surficial Geology*

Fine-textured glaciomarine deposits are found from Brookfield Road to Hunt Club Road; the Airport Parkway also intersects with two areas of older alluvial deposits. Along this section, the surficial geology consists of a thick deposit of soft to firm sensitive silty clay.

At the intersection of the Airport Parkway and Hunt Club Road, till and coarse-textured glaciomarine deposits are found. Primary investigations at the Hunt Club Road underpass (completed as part of a different study) found that subsurface conditions consisted of a thick deposit of silty clay over water bearing sands.

Coarse-textured glaciomarine deposits consisting of sand, gravel and minor silt and clay occupy the majority of the remainder of the Airport Parkway from Hunt Club Road to the intersection of the Airport Parkway and Lester Road. The Airport Parkway intersects with organic deposits that may contain peat, muck, or marl. Further to the south, fine sand is present formed through eolian deposition. The overburden in the vicinity of the airport consists of glaciofluvial deposits with some till. The majority of the overburden along Lester Road consists of coarse-textured glaciomarine deposits with some organic deposits located to the south of Lester Road between Albion Road and Bank Street. Figures 3-26 and Figure 3-27 present the surficial geology within the study area.

3.4.1.2 *Depth to Bedrock*

The depth to bedrock along the Airport Parkway from Brookfield Road to Walkley Road ranges from 25 to 50 metres near Brookfield Road, to 0 to 2 metres near Walkley Road. The depth to bedrock gradually increases to 10 to 15 metres near Hunt Club Road. The depth to bedrock from Hunt Club Road to the airport ranges from 15 to 50 metres. The depth to bedrock along Lester Road ranges from 25 to 50 metres from Airport Parkway to Albion Road, and from 10 to 15 metres from Albion Road to Bank Road. The shallowest depth to bedrock encountered in the study area is along Airport Parkway near Walkley Road (0-2 metres). Figure 3-28 and Figure 3-29 summarize the depth to bedrock within the study area.

3.4.1.3 *Bedrock Geology*

Bedrock geology across the study area is highly variable. The bedrock geology along the Airport Parkway from Brookfield Road to Hunt Club Road consists of shale and limestone (Billings Formation and Verulam Formation). Between Hunt Club Road and the airport along the Airport Parkway, there is limestone with minor shale (Bobcaygeon Formation), limestone with dolostone beds (Gull River Formation), sandstone, shale, limestone and dolostone (Rockcliffe Formation). This bedrock extends to the southeast in bands and also occupies the eastern portion of Lester Road. The bedrock in the southwest portion of the study area, which includes the southern extent of the Airport Parkway and the western extent of Lester Road, is predominantly dolostone with minor shale and sandstone (Oxford Formation). Figure 3-30 and Figure 3-31 describe the bedrock geology within the study area.

Figure 3-26: Surficial Geology (Airport Parkway)

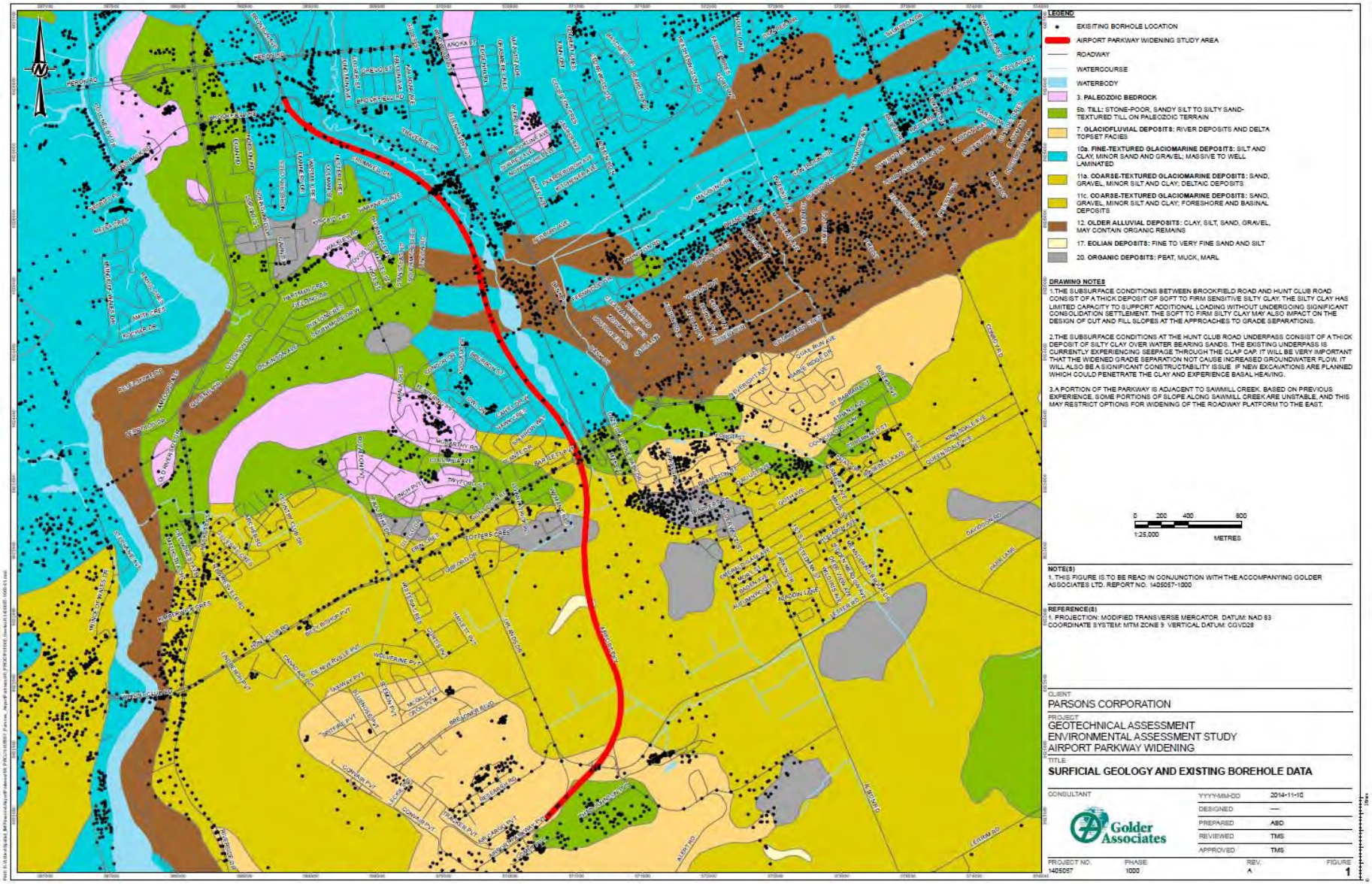


Figure 3-27: Surficial Geology (Lester Road)

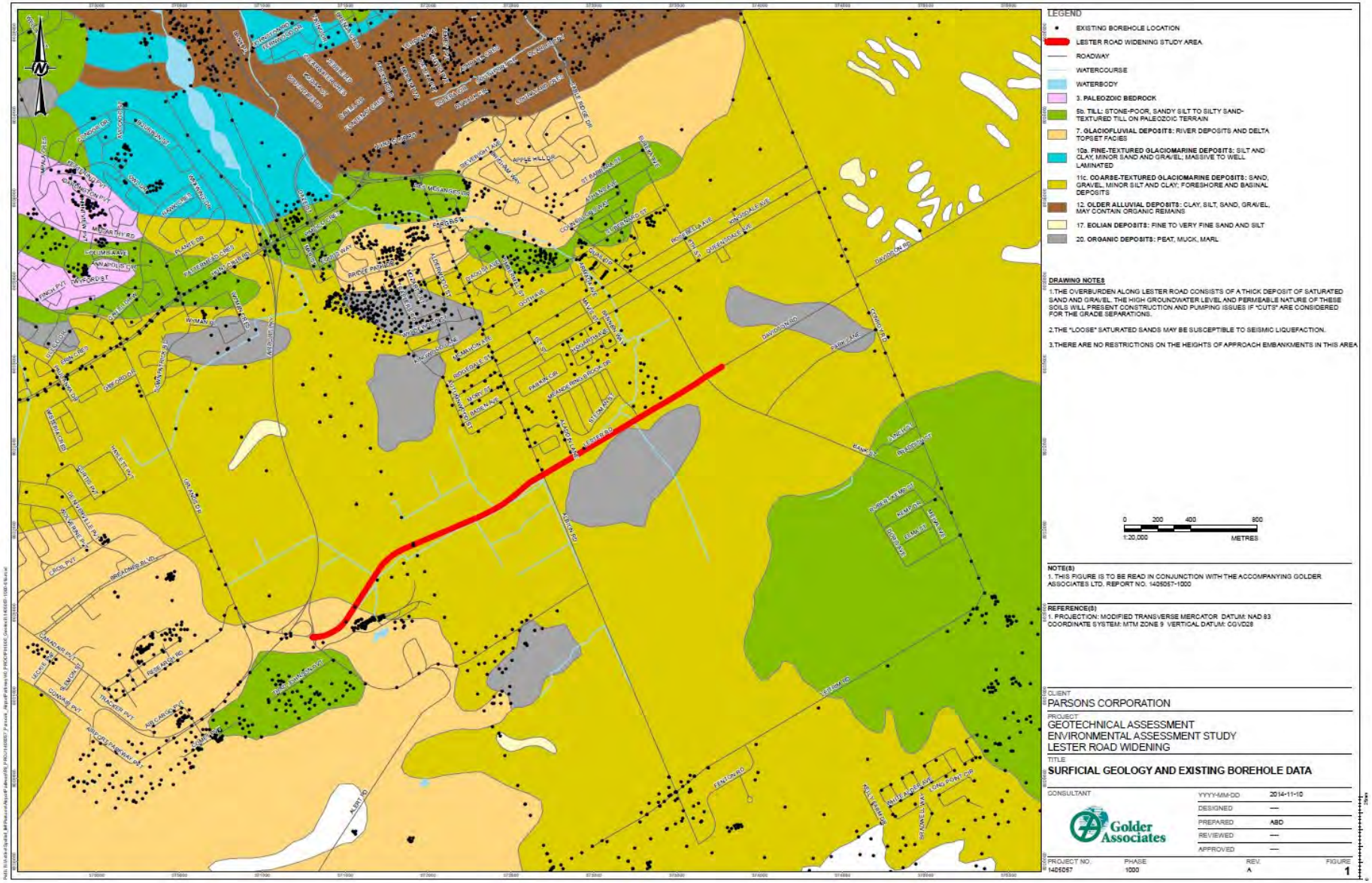


Figure 3-28: Depth to Bedrock (Airport Parkway)

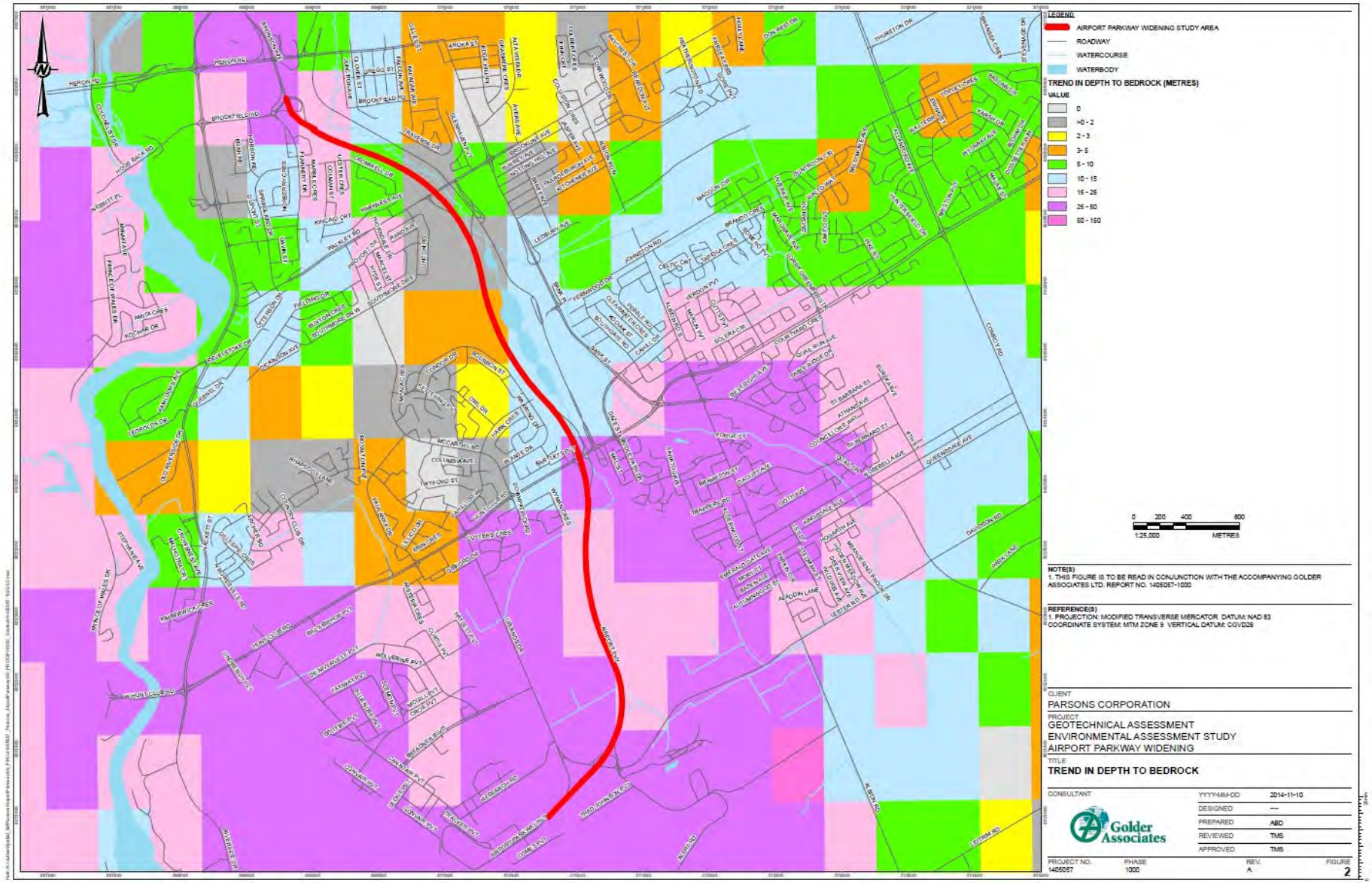


Figure 3-29: Depth to Bedrock (Lester Road)

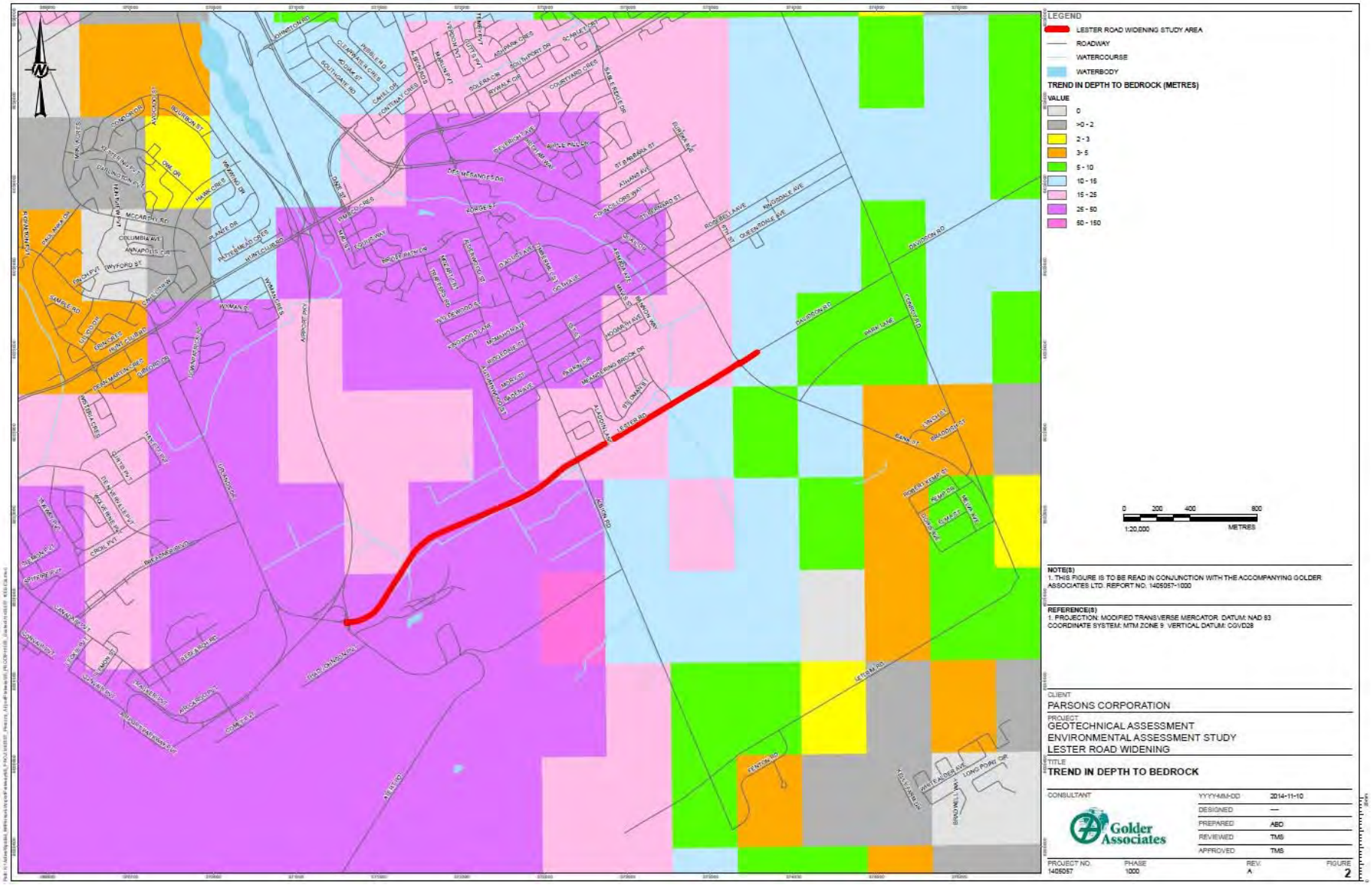


Figure 3-30: Bedrock Geology (Airport Parkway)

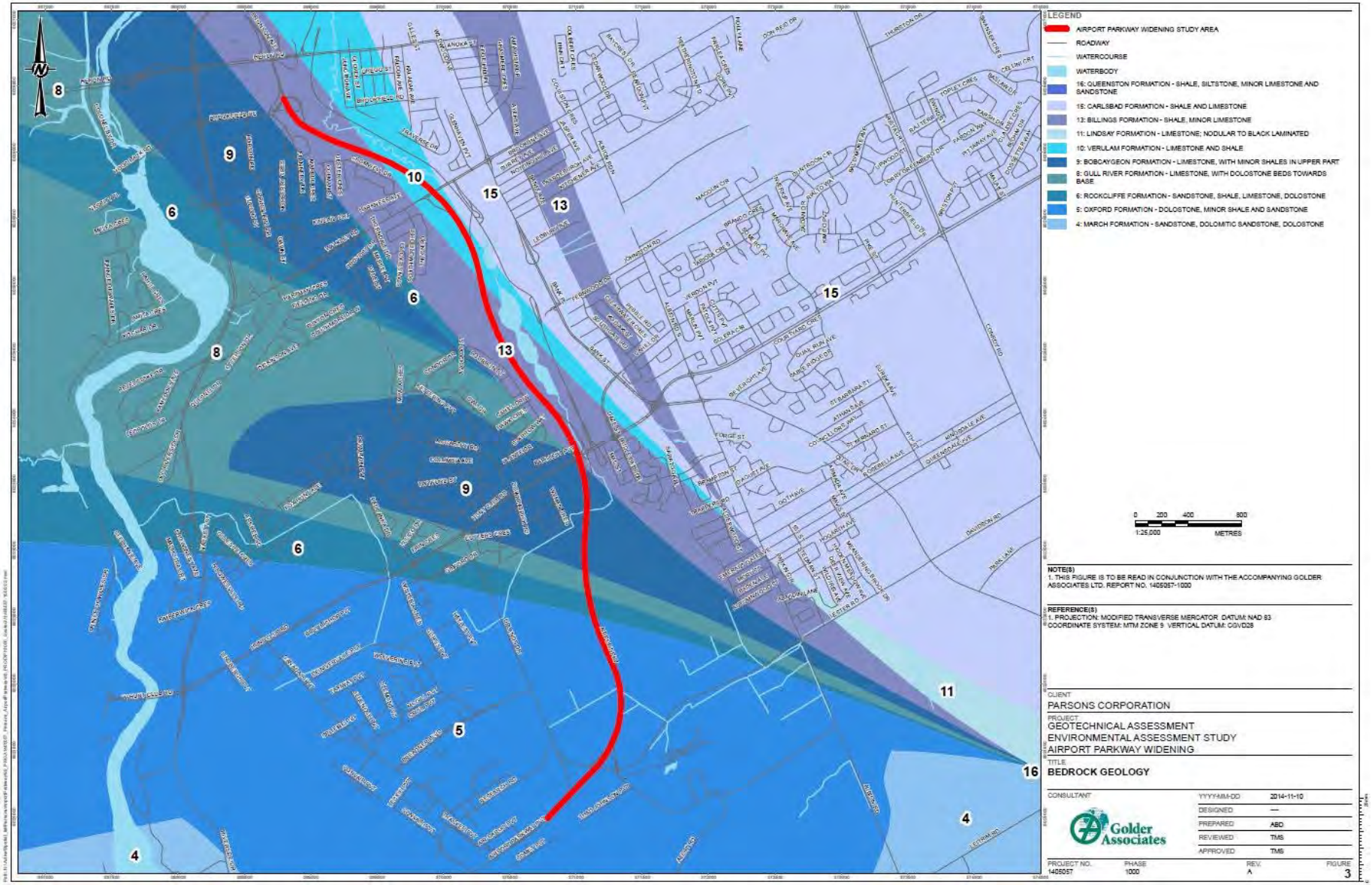
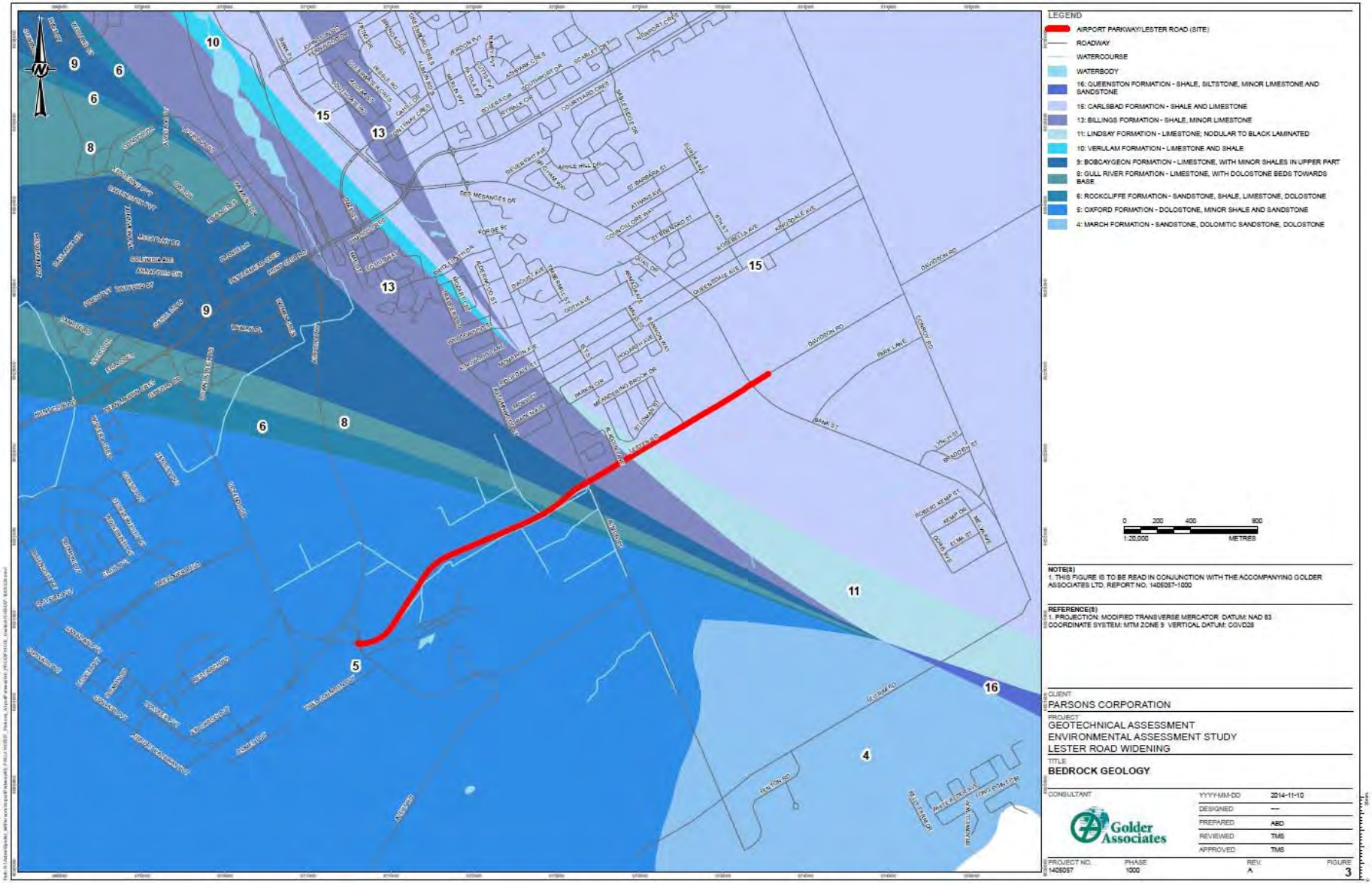


Figure 3-31: Bedrock Geology (Lester Road)



3.4.1.4 *Areas of Special Concern*

Golder also identified several areas of special concern that may influence the design and construction of the roadways for this project. The following are a list of areas of special concern as described by Golder.

For Airport Parkway:

- The subsurface conditions between Brookfield Road and Hunt Club Road include soft to firm silty clay.
- The subsurface conditions at the Hunt Club Road underpass consist of a thick deposit of silty clay over water bearing sands.
- Based on previous experience, some portions of slope along Sawmill Creek are unstable.

For Lester Road:

- The overburden along Lester Road consists of a thick deposit of saturated sand and gravel. The high groundwater level and permeable nature of these soils will present construction and pumping issues if “cuts” are considered for the grade separations.
- The “loose” saturated sands may be susceptible to seismic liquefaction.

3.4.2 Potentially Contaminated Land

Golder Associates Ltd. (Golder) performed a cursory environmental site assessment (ESA) of the study area. The scope of the cursory ESA was to identify existing and former operations/activities (referred to as potentially contaminating activities, or PCAs) that may have impacted soil and/or groundwater quality in the study area. The cursory ESA included a review of the following data sources:

- Ecolog ERIS Database Report for the study area, dated September 17, 2014;
- Previous environmental reports available and provided for the study area;
- City of Ottawa Historical Land Use Inventory (HLUI);
- City of Ottawa Waste Disposal Site Inventory, 2004; and
- Review of the study area on Google Earth for years 2004, 2007 and 2014.

Information collected from these resources was evaluated to identify any PCAs based on the nature, distance and location (hydraulically down-gradient, up-gradient, or trans-gradient) from the study area. PCAs identified within ESA study area were retained for further consideration. In addition, closed or active landfills within 0.5 km of the site were also considered as PCAs because they may have the potential to impact the study area.

The identified PCAs retained for further consideration were ranked as having high, medium and low risk of impact and implication on the construction of the proposed Airport Parkway and Lester Road Widening projects based on the potential for subsurface impacts to the study area. The following rationale was generally used to rank the PCAs under the three categories:

- High: Active and/or closed waste disposal sites located within the study area or near (< 200 metres) the site, gasoline service stations, motor vehicle repair shops, wholesale petroleum products, wholesale motor vehicles, dry cleaners, heavy industrial facilities, presence of fuel and/or chemical storage tanks, federal contaminated sites, sites with spills reported to have a confirmed or unknown environmental impact located on the site or in immediate vicinity of the site;
- Medium: The PCAs listed as having high potential for impacts but generally located more than 200 metres from the site. Construction and renovation companies, waste generators which are

manufacturing or industrial facilities, light industrial facilities, foundry and/or metal works, railway and related industries, transport industries, sites with spills reported to have a possible environmental impact located in close proximity to the site; and

- Low: Warehouses, lumber and coal yards, commercial storage facilities, sites with Certificates of Approval on industrial wastewater and municipal sewage and water works, sites with spills reported to have no anticipated environmental impact located within the study area. In addition, PCAs ranked as having high or medium risk for impacts were ranked as having low potential for impacts if these PCA are generally located 500 m and more from the site (depending on the specific PCAs).

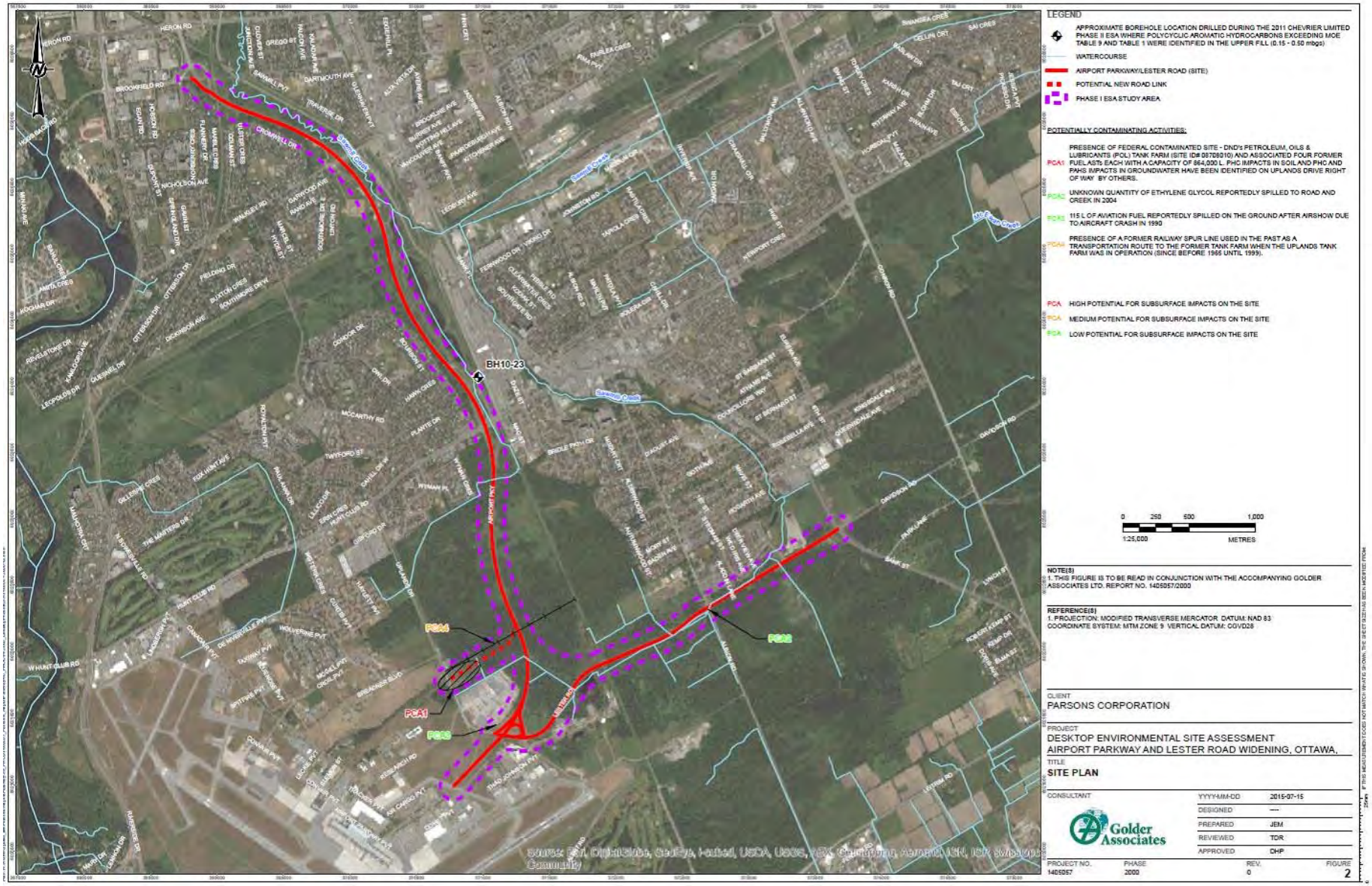
A total of four potentially contaminating activities were identified within the study area and are summarized in Table 3-4. These PCAs have the potential to have impacted the subsurface within the study area.

Table 3-10: Identified Potentially Contaminating Activities in the Study Area

PCA ID	Potentially Contaminating Activity	Location	Potential Risk of Subsurface Impact on the Study Area	Source of Information
PCA1	Presence of Federal Contaminated Site – Department of National Defense's Petroleum, Oils & Lubricants tank farm (Site ID# 08708010) and associated four former fuel aboveground storage tank each with a capacity of 864,000 L. Petroleum hydrocarbon (PHC) impacts in soil and PHC and polycyclic aromatic hydrocarbon impacts in groundwater have been identified by others on Uplands Drive right of way.	Immediately east of Uplands Drive and west of Airport Parkway in the area where the proposed option for the Airport Parkway conceptual realignment section is terminated.	High	Ecolog ERIS report, previous reports (2014 Draft Golder Phase I ESA report for the Trillium Line Airport Extension project)
PCA2	Unknown quantity of ethylene glycol reportedly spilled to road and creek in 2004.	Along Lester Road.	Low	Ecolog ERIS report
PCA3	115 L of aviation fuel reportedly spilled on the ground after airshow due to aircraft crash in 1990.	Near the intersection of Aviation Parkway and Lester Road, approximately 300 m southwest of the proposed realignment options.	Low	Ecolog ERIS report
PCA4	Presence of a former railway spur line used in the past as a transportation route to the former tank farm when the Uplands Tank Farm was in operation (since before 1965 until 1999) and the potential presence of fill material of unknown quality for the track bed at that time, creosote treated railway ties along the tracks, and the potential for accidental spills from the trains.	Immediately north of the Uplands Tank Farm parallel to the proposed options for the Airport Parkway conceptual realignment.	Medium	Previous reports (2014 Draft Golder Phase I ESA report for the Trillium Line Airport Extension project). Google Earth observations.

Figure 3-32 identifies the location of the potentially contaminating activities previously described.

Figure 3-32: Potentially Contaminating Activities Identified in the Study Area



3.5 Biological Environment

Golder Associates Ltd. (Golder) performed a desktop review of the existing natural heritage features in the study area. The investigation of existing biological conditions within the study area included a background information search, literature review to gather data about the local area and provide context for the evaluation of the natural features as well as targeted field surveys. A number of resources were used to evaluate the existing conditions including: Species at Risk (SAR) lists, natural heritage databases and maps, animal atlases, planning documents, conservation authorities, correspondence with the Ontario Ministry of Natural Resources and Forestry (MNRF) and the City of Ottawa, and previous environmental assessments available for the study area. Background information was used to initially characterize, including delineation of vegetation communities, screening for SAR, and identification of existing natural heritage features. The full report can be found in Appendix B - Supporting Reports.

3.5.1 Aquatic Environment

3.5.1.1 *Surface Water Resources*

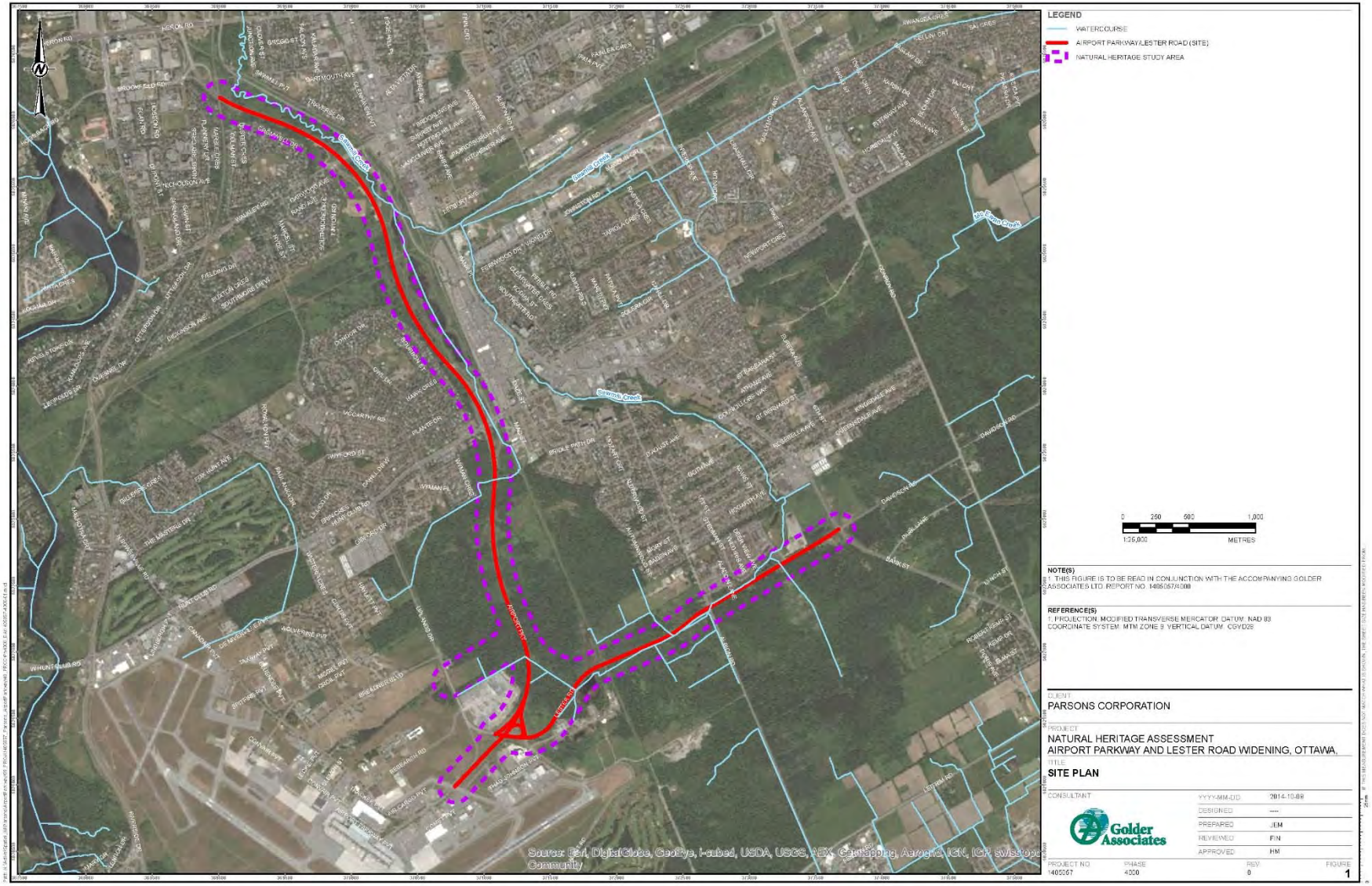
The surface water features located within the study area include Sawmill Creek, drains, and drainage ditches located within the Lester Road Wetland Complex (LRW). The study area is located within the Sawmill Creek Subwatershed (RVCA 2012). Sawmill Creek is the main surface water feature in the local landscape. Sawmill Creek is visible in Figure 3-33 running parallel to Airport Parkway before curving to the southeast.

Two watercourses cross the study area and feed into Sawmill Creek: the Alexander Drain and Cahill Tributary. Alexander Drain is a permanent cool-water feature that crosses the study area along Airport Parkway approximately 600 metres north of the intersection with Lester Road (MMM Group 2014). This watercourse then flows southeast and crosses Lester Road where it feeds into a large cattail wetland. The watercourse then flows east along the south side of Lester Road and feeds into the Sawmill Creek headwaters (MMM Group 2014).

The Cahill Tributary crosses Airport Parkway approximately 400 metres south of the Hunt Club Road intersection (MMM Group 2014). The watercourse then flows northward along the Canadian National Rail line to the east of the Airport Parkway. The watercourse parallels the Airport Parkway near Hunt Club Road, flowing north, until it veers east approximately 350 metres to the north (MMM Group 2014).

The Lester Road Wetland Complex is a group of contiguous and individual wetlands that lie within the Lester Road Wetland Catchment, which includes natural habitat that extends slightly to the west of Uplands Drive, north to the Hunt Club Road Parkway intersection, south east to the Lester Road, east along Lester Road, north east to Conroy Road, and south to Leitrim Road and the airport. This wetland complex has been assessed as Provincially Significant by MNRF. The LRW complex is primarily composed of wetlands but also contains three watercourses that are located within the Lester Road study area. These watercourses connect to the Alexander Drain and Sawmill Creek headwaters and likely form connections between wetlands within the LRW complex itself.

Figure 3-33: Watercourses in the Study Area



3.5.1.2 *Fish Habitat*

Sawmill Creek is the primary source of fish habitat in the study area and is classified as a cool-water system with 19 species of fish recorded during previous surveys (RVCA 2012). Common species observed in the creek include: Common Shiner (*Luxilus cornutus*), Creek Chub (*Semotilus atromaculatus*), Logperch (*Percina caprodes*), Blacknose Dace (*Rhinichthys atratulus*), Bluntnose Minnow (*Pimephales notatus*), Brook Stickleback (*Culaea inconstans*), Central Mud Minnow (*Umbra limi*), Fathead Minnow (*Pimephales promelas*), Finescale Dace (*Chrosomus neogaeus*), Bluegill (*Lepomis macrochirus*), Longnose Dace (*Rhinichthys cataractae*), Mottled Sculpin (*Cottus bairdii*), Northern Redbelly Dace (*Chrosomus eos*), Pearl Dace (*Margariscus margarita*), Pumpkinseed (*Lepomis gibbosus*), Rockbass (*Ambloplites rupestris*), Smallmouth Bass (*Micropterus dolomieu*), White Sucker (*Catostomus commersonii*), and Muskellunge (*Esox masquinongy*).

Fish have also been observed, though not identified, in wetlands and drainages in the southern portion of the Airport Parkway Natural Area (Hatch Mott Macdonald 2006) and the Lester Road Wetland Complex (Beacon 2010). The Airport Parkway Natural Area is an Ottawa-Carleton Natural Area identified in the Natural Environment Systems Strategy (NESS; Brownell and Larson 1995). It encompasses natural areas to the north east and east of the airport and overlaps with sections of the Lester Road Wetland Complex (Hatch Mott Macdonald 2006).

Similar fish species were identified in both Alexander Drain and Cahill Tributary. Additional fish species identified in Alexander Drain include Johnny Darter (*Etheostoma nigrum*), Fallfish (*Semotilus corporalis*), Blacknose Shiner (*Notropis heterolepis*), and a *Lepomis* species (MMM Group 2014).

Although aquatic surveys were not scoped as part of the 2015 field program, small-bodied fish were observed in the storm water management ponds along Airport Parkway during turtle surveys.

3.5.2 Terrestrial Environment

3.5.2.1 *Ecological Land Classification and Plant Community*

A high level desktop ecological land classification was completed using available imagery in combination with habitat information from previous reports of this area. The study area is comprised of a mosaic of plant communities including deciduous forest thickets, meadows, swamps, marshes, and small conifer plantations. It also includes residential and industrial lots, manicured lawn areas, roads and related infrastructure, and other disturbed areas. Overall, deciduous forest and deciduous swamp are the most dominant communities. Some of the forested areas are contiguous with larger forests outside the study area.

No sensitive or rare plant communities were identified during 2015 field surveys. Given the proximity of the road, the portions of the plant communities within the study area are already impacted from edge effect and human activities. Maps of the ecological land classifications found throughout the study area can be found in Figure 3-34 to Figure 3-37.

Figure 3-34: Ecological Land Classifications (Airport Parkway – North)

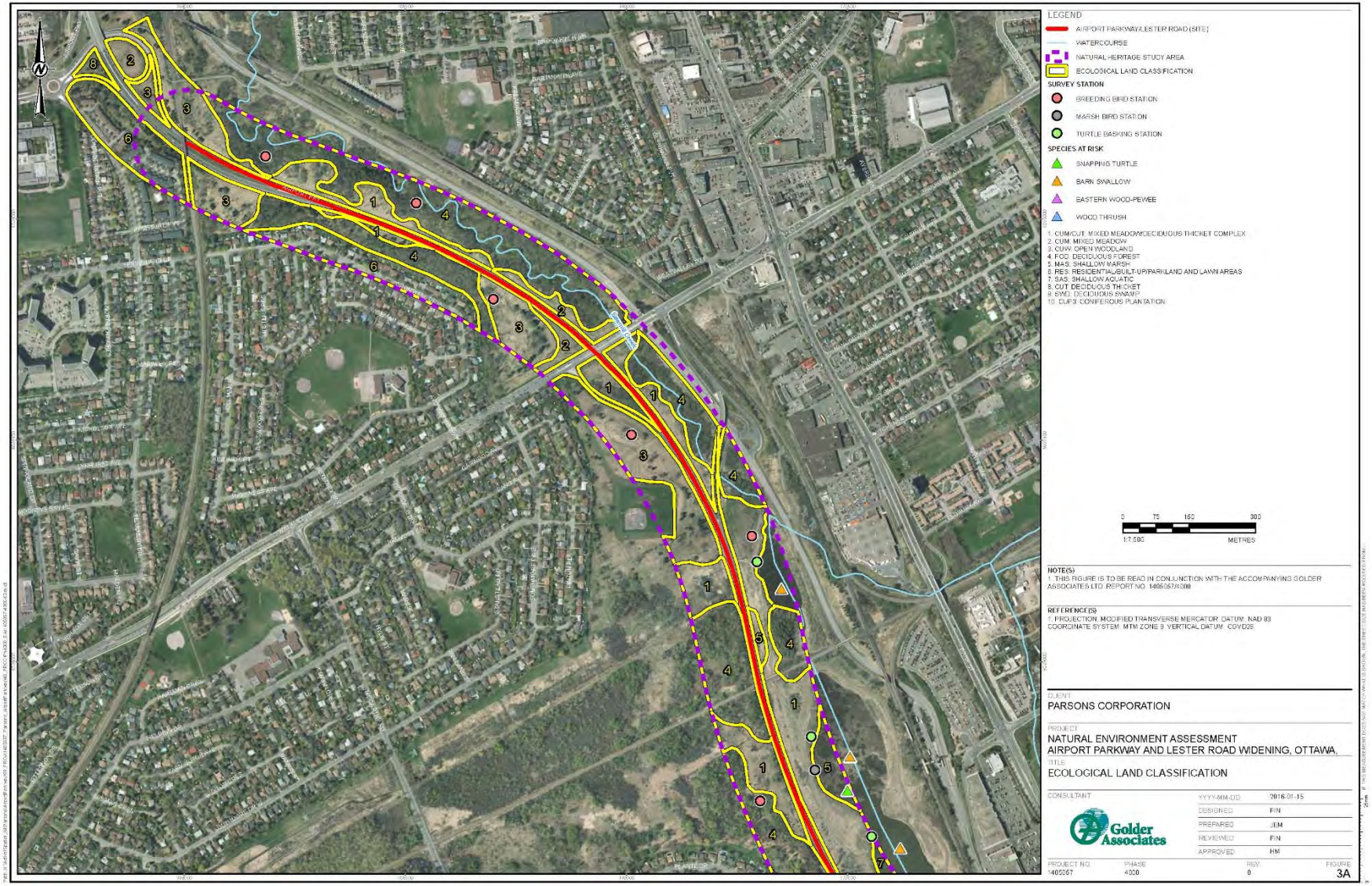


Figure 3-35: Ecological Land Classifications (Airport Parkway – Middle)

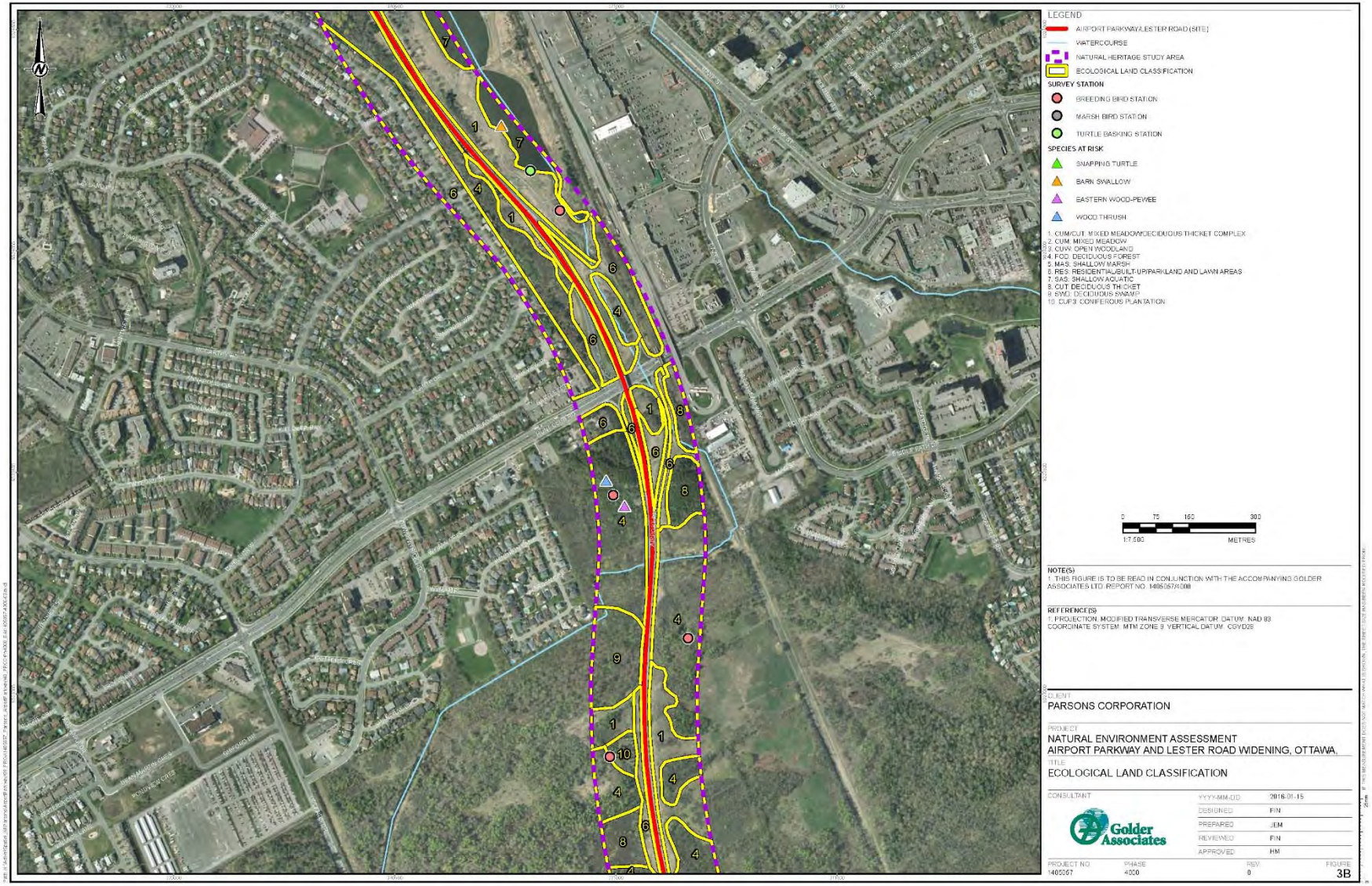


Figure 3-36: Ecological Land Classifications (Airport Parkway - South)

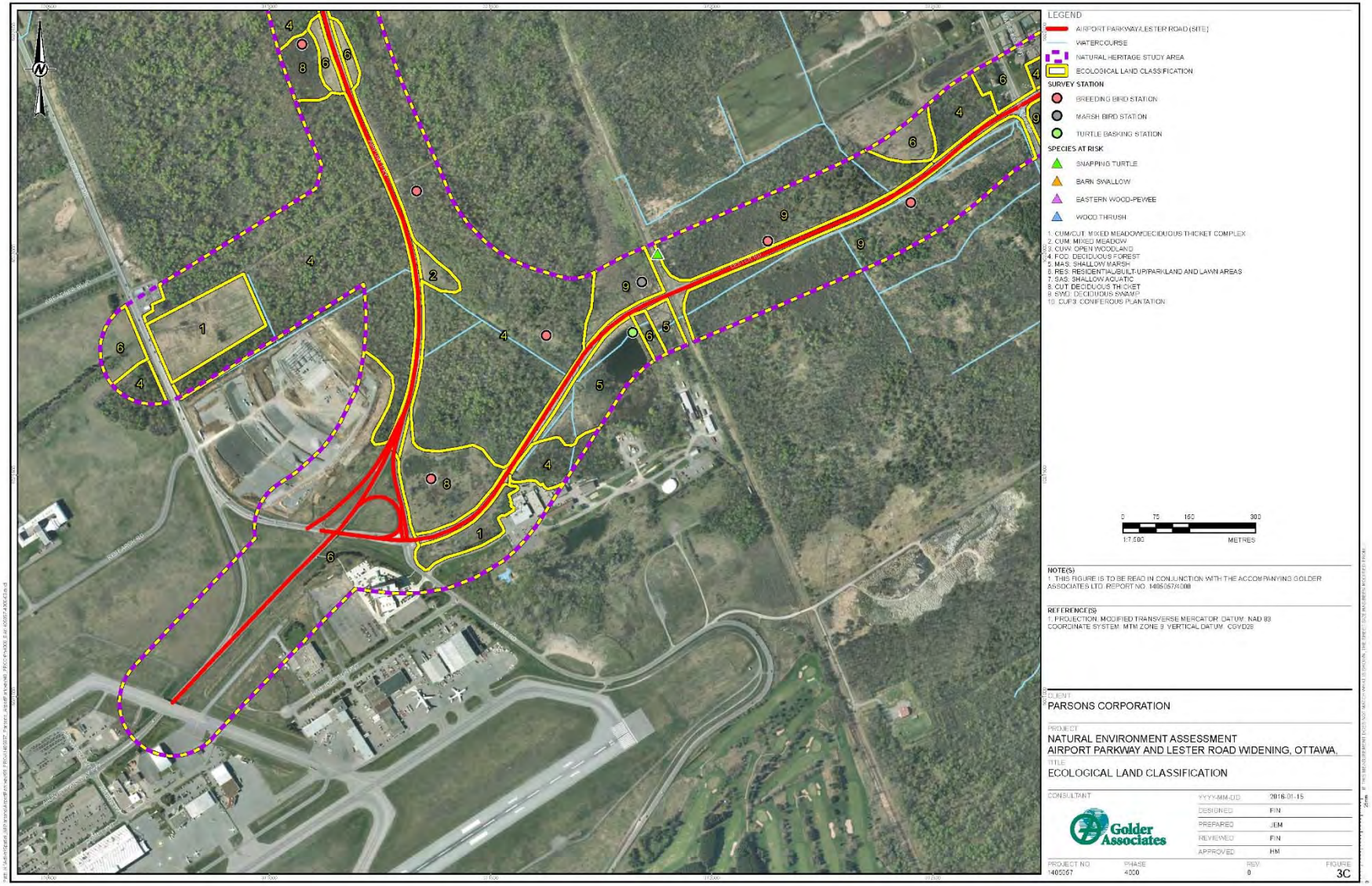
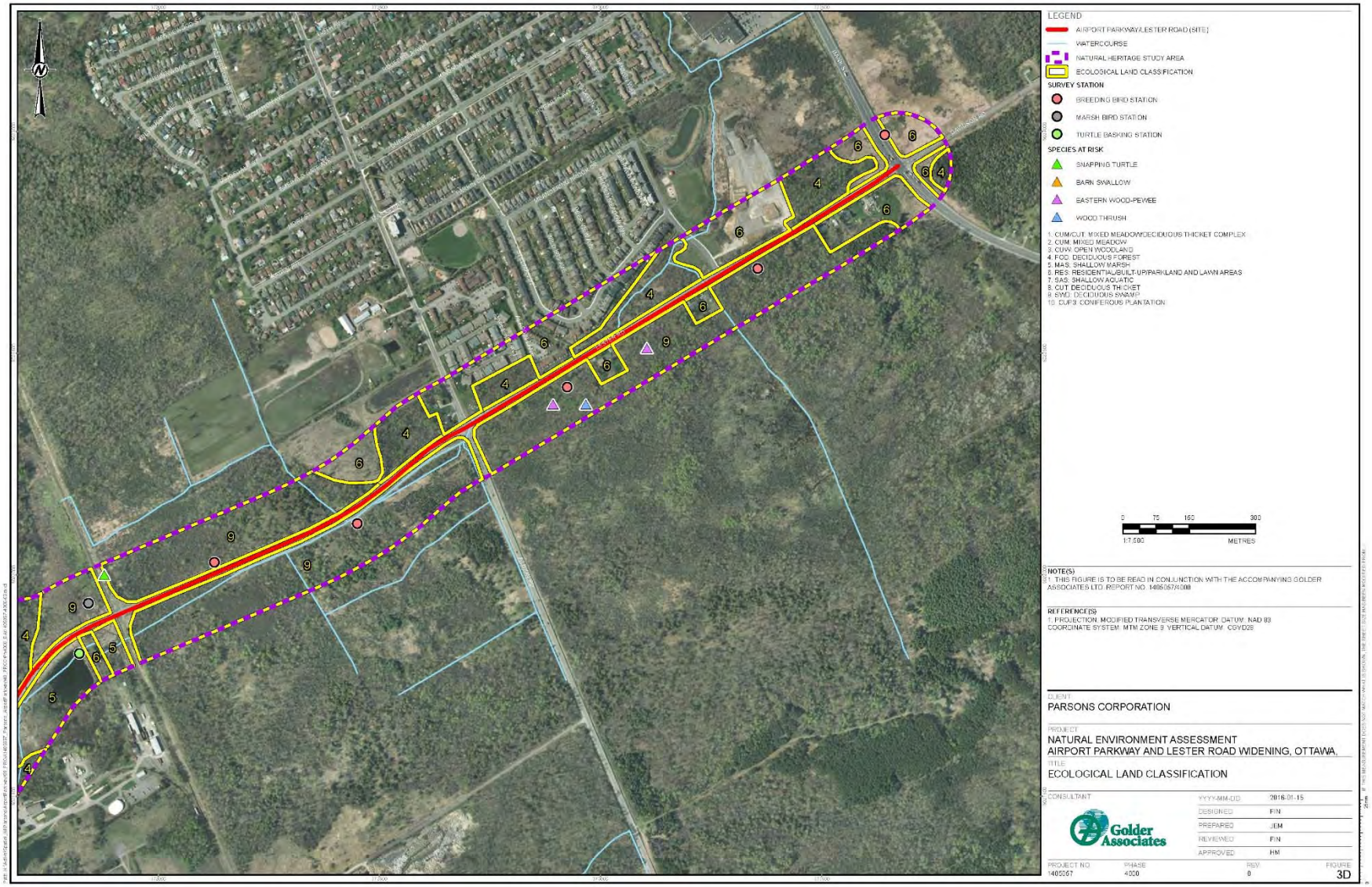


Figure 3-37: Ecological Land Classifications (Lester Road)



3.5.3 Wildlife

During 2015 field surveys an inventory of wildlife was conducted. A total of 26 insects, nine (9) amphibians and reptiles, 62 birds, and thirteen (13) mammals were identified during these surveys. In addition to the Golder 2015 field inventory, a desktop review of records in the area and previous EAs identified a number of wildlife species in the general vicinity of the Project. A full list of wildlife observed in the area can be found in Appendix B - Supporting Reports.

3.5.4 Species at Risk

SAR screening was conducted to determine which species listed under the federal *Species at Risk Act*, 2002 (SARA), and/or Ontario *Endangered Species Act, 2007* have the potential to be located within the study area. The potential for SAR to occur was assessed based on species range information, known records, historic land use practices and the preferred habitat requirements of these species and in some cases, verified through field surveys conducted in 2015.

The potential for the species to occur was determined through a probability of occurrence. A ranking of low indicates no suitable habitat availability for that species in the study area and no specimens identified. Moderate probability indicates greater potential for the species to occur, as suitable habitat appeared to be present in the study area, but no occurrence of the species was recorded. High potential indicates a known species record in the study area (including during background data review) and good quality habitat is present. A table describing SAR screening can be found with the full Natural Heritage Report in Appendix B - Supporting Reports. This table also describes their status under provincial and federal legislation (i.e. endangered, threatened, etc.), as well as their habitat requirements.

Following field surveys, eleven (12) SAR were identified to have a moderate to high potential to occur within the study area. This includes butternut (*Juglans cinerea*), western chorus frog (*Pseudacris triseriata*), monarch butterfly (*Danaus plexippus*), barn swallow (*Hirundo rustica*), eastern woodpewee (*Contopus virens*), wood thrush (*Hylocichla mustelina*), Blanding's turtle (*Emydoidea blandingii*), snapping turtle (*Chelydra serpentina*), eastern milksnake (*Lampropeltis triangulum*), little brown myotis (*Myotis lucifugus*), northern myotis (*Myotis septentrionalis*), and tri-coloured bat (*Perimyotis subflavus*).

3.5.5 Designated Natural Heritage Features

The following section provides a discussion of the designated and/or significant natural heritage features in the study area as defined in Ontario's PPS and the Natural Heritage Reference Manual produced by the Ontario Ministry of Natural Resources (MNR now Ministry of Natural Resources and Forestry (MNRF) (2010). All key natural heritage features that have the potential to be impacted by the proposed road widening activities are discussed in the following sections. Figure 3-38 displays the various significant natural heritage features identified in the study area.

3.5.5.1 *Significant Wetlands*

Wetlands are designated provincially significant by the MNRF using evaluation procedures established by the province, specifically, the Ontario Wetland Evaluation System (MNRF 2013). These areas are afforded protection under the PPS.

The Lester Road Wetland Complex (LRW) is classified as a Provincially Significant Wetland (PSW). The LRW contains an area of approximately 434 ha of wetland habitat with the western boundary slightly to the west of Uplands Drive, the northern boundary along the residential areas south of Hunt Club Road, the eastern boundary along the residential areas west of Albion Road and at Conroy Road, and the south

boundary within the Pine Grove Natural Area (Beacon 2010; NCC 2013). Sixteen individual and contiguous wetlands have been identified as part of the LRW (Beacon 2010, MNRF 2011).

The LRW borders Lester Road and the southern portion of Airport Parkway as defined by the Greenbelt Master Plan (2013) (Beacon 2010, MNRF 2014). This area includes sections of the Airport Parkway natural area, Blossom Park Woods, and Pine Grove Forest Core Area (Hatch Mott MacDonald 2006; NCC 2013). Habitat types that have been identified in the LRW include old field meadow, cattail mineral shallow marsh, sugar maple-lowland ash deciduous forest, popular mixed forest, hemlock mixed forest, willow mineral thicket swamp, mineral deciduous swamp, and white elm lowland deciduous swamp (Hatch Mott MacDonald 2006).

3.5.5.2 *Significant Woodlands*

Significant woodlands are defined and designated by the local planning authority (MNRF, 2010), which for the study area is the City of Ottawa (City of Ottawa OP 2003). The City uses information from the Eastern Ontario Model Forest (EOMF 2014), as well as updated information from the MNRF significant woodland project conducted in 2008. General guidelines for determining significance of these features are presented in the NHRM for Policy 2.3 of the PPS (MNRF 2010).The study area crosses significant woodlands to the south of Lester Road between Albion Road and Bank Street. This area is part of the Pine Grove Forest Core Natural Area under the Greenbelt Master Plan (NCC 2013).

3.5.5.3 *Significant Valleylands*

Recommended criteria for designating significant valleylands under the PPS includes prominence as a distinctive landform, degree of naturalness, importance of its ecological functions, restoration potential, and historical and cultural values (MNRF 2010). Significant valleylands have been designated within the study area along the Sawmill Creek to the east of the Airport Parkway between Brookfield Road and Walkley Road.

3.5.5.4 *Areas of Natural and Scientific Interest*

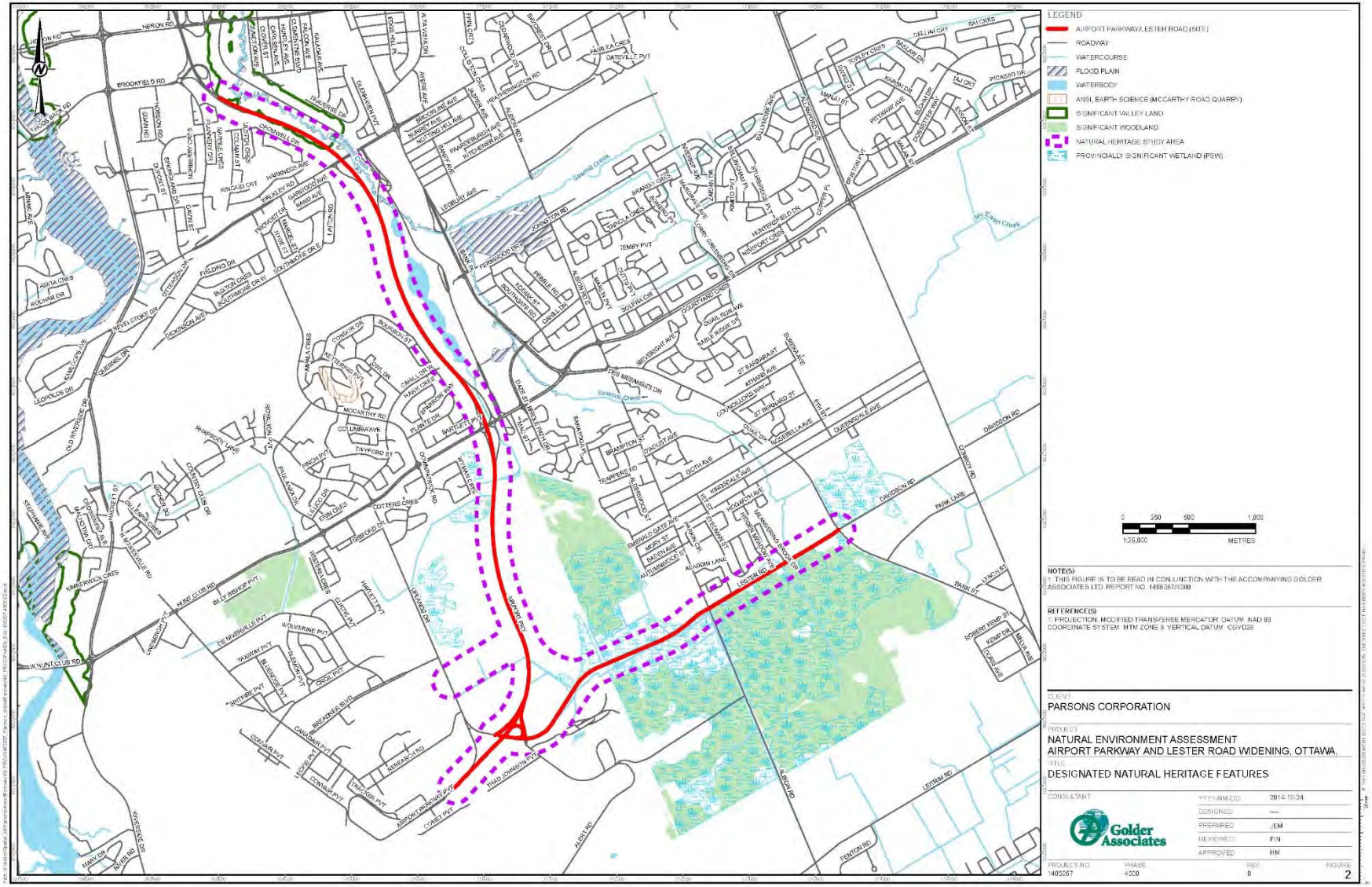
Areas of natural and scientific interest (ANSIs) are designated by the province according to standardized evaluation procedures. ANSIs are ranked by the MNRF as being either provincially or regionally significant. No provincially or regionally significant ANSIs have been identified to exist within the study area.

3.5.5.5 *Significant Wildlife Habitat*

Significant wildlife habitat (SWH) is one of the more complex natural heritage features to identify and evaluate. The Natural Heritage Reference Manual (MNR, 2010) includes criteria and guidelines for designating significant wildlife habitat. There are two other documents, the SWH Technical Guide (MNR, 2000a) and the SWH Decision Support System (MNR, 2000b), that can be used to help decide what areas and features should be considered SWH. More recently the MNRF has released draft SWH Ecoregion Criterion Schedules (MNRF 2015), which provide specific values and criteria for identifying SWH. Each of these resources was used in the analysis of SWH in this report to identify potential SWH in the study area.

There are four general types of significant wildlife habitat: migration corridors, seasonal concentration areas, rare or specialized habitats, and species of conservation concern. Species and their habitats that are already protected as threatened or endangered under the *ESA 2007*, are not considered in the assessment of SWH. All types of significant wildlife habitat are discussed below in relation to the study area.

Figure 3-38: Significant Natural Heritage Features



Seasonal Concentrations Areas

Seasonal concentrations areas are those areas where large numbers of a species congregate at one particular time of the year. Examples include deer yards, amphibian breeding habitat, bird nesting colonies, bat hibernacula, raptor roosts, and passerine migration concentrations. If a SAR, or if a large proportion of the population may be lost if significant portions of the habitat are altered, all examples of certain season concentrations areas may be designated.

Background studies have not identified any seasonal concentration areas in the study area. However, based on information collected in the desktop habitat assessment and 2015 field surveys, snags and potential cavity trees are present throughout the treed portions of the study area, in part due to the die-off of ash trees due to emerald ash borer. These snags and potential cavity trees could provide maternity colony habitat for bats.

Rare Habitats

This category includes vegetation communities that are considered rare in the province. Generally, communities assigned an SRANK (a rarity rank assigned to a species or ecological community) of S1 to S3 (extremely rare to rare-uncommon) by the Natural Heritage Information Centre could qualify. It is assumed that these habitats are at risk and that they are also more likely to support rare species and other features that are considered significant. No rare habitat was identified on or within the study area based on the information reviewed.

Specialized Habitats

Specialized habitats are microhabitats that provide a critical resource to some groups of wildlife. Examples include salt licks for ungulates and groundwater seeps for wild turkeys. Background studies indicate the potential for turtle nesting habitat and amphibian woodland breeding ponds to exist within the study area. 2015 field surveys confirmed the potential presence of this habitat throughout the study area, in particular associated with wetlands and ponds and adjacent lands (in the case of the turtle nesting).

The presence of turtles in the study area creates potential for turtle nesting habitat to be present in and adjacent to the wetlands and surface water features. Further, there were signs of pools and flooded areas throughout the forests and swamps which may provide amphibian woodland breeding ponds within the study area. No other specialized habitats were identified from background studies or during 2015 field surveys.

Species of Conservation Concern

Species of conservation concern includes four types of species: those that are rare, those whose populations are significantly declining, those that have been identified as being at risk to certain common activities, and those with relatively large populations in Ontario compared to the remainder of the globe.

Rare species are considered at five levels: globally rare, nationally rare, provincially rare, regionally rare (at the Site Region level), and locally rare (in the municipality or Site District). This is also the order of priority that should be attached to the importance of maintaining species. Some species have been identified as being susceptible to certain practices, and their presence may result in an area being designated SWH. The final group of species of conservation concern includes species that have a high proportion of their global population in Ontario. Although they may be common in Ontario, they are found in low numbers in other jurisdictions.

Seven (7) species of conservation concern were identified through the desktop screening and field surveys to be present or to have a moderate or high potential to occur in the study area. These include wood thrush, eastern wood-pewee, monarch butterfly, snapping turtle, eastern milksnake, western chorus frog and tri-coloured bat. Where federal lands occur within the study area (e.g. NCC lands), tri-coloured bat is protected under the *SARA*.

4.0 Evaluation of Alternative Solutions

As has been confirmed in Section 2: Project Need and Opportunities, there is a transportation deficiency within the study area as well opportunities to improve the visual and natural environment. This section summarizes the project need/opportunity and the evaluation of alternative solutions.

4.1 Summary of Needs/Opportunities

The transportation study need/opportunity for the planning horizon to 2031 can be summarized as follows:

- There is an opportunity to provide walking and cycling facilities in the Airport Parkway and Lester Road corridors, in keeping with OP and TMP designations;
- There is an opportunity to develop the Airport Parkway corridor as a Scenic Entry Route, in keeping with the OP designation;
- Under current conditions, traffic is congested within the Airport Parkway and Lester Road corridors at certain times of day and during certain circumstances;
- There is a growing record of vehicle accidents in each corridor that can be associated with the growth in traffic volumes and corresponding traffic conditions;
- Predicted traffic volumes are expected to exceed the existing single travel lane per-direction capacity of both the Airport Parkway and Lester Road corridors even with anticipated increases in transit ridership and all of the other transportation investments in the TMP (within the planning horizon); and
- The OMCIA has a long-term plan for a new northerly road connection to a future/expanded air terminal building.

On this basis, this study identifies the need/opportunity for:

- The equivalent transportation capacity of one additional travel lane in each direction within the Airport Parkway corridor between Lester Road/Uplands Drive and Brookfield Road;
- The equivalent transportation capacity of one additional travel lane in each direction within the Lester Road corridor between the Airport Parkway to Bank Street;
- A high capacity intersection between Albion Road and Lester Road;
- A high capacity intersection between the Airport Parkway and Lester Road;
- Appropriate connections between the Airport Parkway at Brookfield Road, Walkley Road, and Hunt Club Road; and
- A new connecting road link from the Airport Parkway to Uplands Drive, providing for a possible long-term further extension to a future/relocated air terminal building.

These needs/opportunities are identified to provide additional transportation capacity within the 2031 planning horizon to/from planned growth in communities south of the NCC Greenbelt and to/from the OMCIA and its surrounding employment sector, and to/from the central portion of the City.

The work in Section 2 also identified needs/opportunities within the study area for improving valued environmental components including:

- An opportunity to improve the cycling and pedestrian environments within the study area;
- An opportunity to improve/enhance Scenic Entry Routes to/from the City;
- An opportunity to improve/enhance natural heritage features and function; and
- An opportunity to coordinate the planning and design of transportation infrastructure in the Airport Parkway and Lester Road corridors with other planned infrastructure including the Trillium Line Extension project.

4.2 Description of Alternative Solutions

A list of alternative solutions were developed that have some potential to address the project needs/opportunities, at least in part. These are described in Table 4-1 below.

Table 4-1: List of Alternative Solutions Evaluated

Alternative		Description
1	Do Nothing in the Corridors	Provide no new transportation infrastructure in the corridors, and rely on other transportation infrastructure investments outlined in the TMP not in the corridor including: • Trillium Line Extension • New or expanded Park and Ride Facilities • Widening of other Arterial Roads • Multi-Use Pathways • Etc. (Note: The TMP investments outside the corridors within the planning horizon are included in all alternative solutions considered).
2	Only provide New Walking and Cycling Infrastructure in the Corridors	Maintain existing two-lane Airport Parkway and Lester Road and provide new walking and cycling infrastructure in the corridors.
3	Only provide New Walking, Cycling, and Transit Priority (bus-only lanes) in the Corridors	Maintain existing two-lane Airport Parkway and Lester Road and provide new walking and cycling infrastructure as well as bus-only lanes in the corridors.
4	Only enact Enhanced Transportation Demand Management (TDM) Strategies	Enact additional TDM strategies above those planned in the TMP. These might include enhanced policies, programs and/or promotions that influence travel behavior, including those related to teleworking, carpooling, and location/distribution of jobs and housing.
5	Only provide Additional Park and Ride Capacity	Maintain existing two-lane Airport Parkway and Lester Road and provide additional Park and Ride lot capacity over and above that planned in the TMP.
6	Only Widen Airport Parkway	Widen Airport Parkway to four-lanes and maintain existing two-lane Lester Road.
7	Only Widen Lester Road	Widen Lester Road to four-lanes and maintain existing two-lane Airport Parkway.

Alternative		Description
8	Widen Other Arterial Roads	Maintain existing two-lane Airport Parkway and Lester Road and widen other Arterial Roads serving north-south travel demand, over and above the widenings planned in the TMP. Other potential road widenings may include: • River Road • Riverside Drive • Limebank Road • Albion Road • Bank Street • Conroy Road
9	Construct a New North-South Arterial Road	Maintain existing two-lane Airport Parkway and Lester Road and construct a new parallel Arterial Road in an alignment to the east, such as a road following the Trillium Line and Sawmill Creek corridor.
10	Construct a Reversible Lane in the Airport Parkway Corridor	Construct one new travel lane and operate the road corridors as three-lane reversible lane facilities.
11	Widen and Connect both Airport Parkway and Lester Road	Widen both the Airport Parkway and Lester Road to four-lanes, improve connectivity between the two roads, and provide a new road connection between the Parkway and Uplands Drive.

This long list of alternative solutions was subject to a two-step screening/evaluation process. The first step involved a screening of the ability of each alternative to sufficiently meet the project need/opportunity. If the alternative passed that screening, it was then carried forward for a more holistic evaluation.

4.3 Screening of Long List of Alternative Solutions

Screening criteria were developed to assess the applicability of the long list of conceivable alternative solutions listed in Table 4-1. The results of the study of existing conditions and needs/opportunities can be used to inform this screening. As noted, the first step in the evaluation process is a screening of alternative solutions based on their ability (or not) to sufficiently achieve the identified transportation capacity. The results are shown in Table 4-2.

Table 4-2: Results of Screening of Long List of Alternative Solutions based on Project Need/Opportunity

Alternative		Effect	Result
1	Do Nothing in the Corridors	Does not sufficiently address the need/opportunity	Screened out, but carried forward for comparison purposes
2	Only provide New Walking and Cycling Infrastructure in the Corridors	Does not sufficiently address the need/opportunity	Screened out
3	Only provide New Walking, Cycling, and Transit Priority (continuous lanes) in the Corridors	Does not sufficiently address the need/opportunity	Screened out
4	Only enact additional TDM Strategies	Does not sufficiently address the need/opportunity	Screened out
5	Only provide Additional Park and Ride Capacity	Does not sufficiently address the need/opportunity	Screened out
6	Only Widen Airport Parkway	Does not sufficiently address the need/opportunity	Screened out

Alternative		Effect	Result
7	Only Widen Lester Road	Does not sufficiently address the need/opportunity	Screened out
8	Widen Other Arterial Roads	May address the need/opportunity	Carried forward for further evaluation
9	Construct a New North-South Arterial Road	May address the need/opportunity	Carried forward for further evaluation
10	Construct a Reversible Lane	Does not sufficiently address the need/opportunity	Screened out
11	Widen and Connect both Airport Parkway and Lester Road	Will address the need/opportunity	Carried forward for further evaluation

Of the eleven (11) alternative solutions identified and evaluated, four (4) were carried forward for further evaluation. The Do Nothing alternative (Alternative 1) does not address the transportation capacity, but was carried forward as an alternative solution for comparison purposes. Enhanced TDM measures (Alternative 4), do not on their own address the needs/opportunities. They are however, an important consideration and are considered part of all of the solutions considered. Similarly, new walking and cycling infrastructure will be provided in any preferred solution, in keeping with the corridors' OP and TMP designations.

4.4 Evaluation of the Remaining Short List of Alternative Solutions

The Four (4) alternative solutions that had at least some potential to sufficiently address the need/opportunity were carried forward for further evaluation. Each was subject to a high level environmental impact assessment based on transportation need, social, biological, physical and economic criteria:

1. **The ability of the alternative to fully address the project need.** Alternative solutions must provide transportation capacity for all modes to meet the transportation needs in the study area during the planning horizon.
2. **Adherence to policies, regulations, and local standards of practice.** Alternative solutions should comply with provincial/federal policies or municipal regulations or policies.
3. **Consideration of Environmental Impacts.** Alternatives should result in impacts on the various environmental conditions that are minimal or that have a likelihood of being able to be managed and/or mitigated through design, or have a positive effect. The ability to avoid/reduce/minimize impacts was considered.

The evaluation results are provided in Table 4-3.

Table 4-3: Results of Evaluation of Short List of Alternative Solutions

Criteria		Do Nothing	Widen other Arterials	New North-South Arterial	Widen and Connect Airport Parkway and Lester Road
1	Transportation Need Ability to meet travel demand of all modes throughout the planning horizon	Does not address the need related to vehicular travel demand. Transit users would be served by the Trillium Line Extension and	In order to address the need the following arterials may need to be widened as noted: • River Road	Partially addresses the need. General purpose vehicles would be accommodated on the two-lane Airport Parkway	Addresses the need. General purpose vehicles would be accommodated on a four-lane Airport Parkway and Lester Road.

Criteria		Do Nothing	Widen other Arterials	New North-South Arterial	Widen and Connect Airport Parkway and Lester Road
		Airport Spur lines. Cycling and pedestrians may be accommodated in corridors outside the Airport Parkway and Lester Road corridors.	• Riverside Drive • Limebank Road • Albion Road • Bank Street • Conroy Road Transit users would be served by the Trillium Line Extension and Airport Spur lines. Cycling and pedestrians may be accommodated in corridors outside the Airport Parkway and Lester Road corridors. Provisions for future/alternative connectivity to the airport would not be accommodated.	and Lester Road and on a parallel road link. Transit users would be served by the Trillium Line Extension and Airport Spur lines. Cyclists and pedestrians would be accommodated within the study area corridors (adjacent to the parallel roadway). Provisions for future/alternative connectivity to the airport would not be accommodated.	Transit users would be served by the Trillium Line Extension and Airport Spur lines. Cyclists and pedestrians would be accommodated within the study area corridors. Accommodates opportunities for future/alternative connectivity to the airport.
2	Policies, Regulations, and Standards Supports planned function to accommodate growth and policies and/or standards of municipal, provincial, and federal authorities	Does not address the planned function to accommodate growth.	Would only partially address the planned function to accommodate growth. The widening of other arterials was considered as part of TMP review as well as the Joint Study to Assess Cumulative Effects of Transportation Infrastructure on the National Capital Greenbelt and further widenings in these corridors through the Greenbelt are not supported.	Would only partially address the planned function to accommodate growth. The TMP review as well as the Joint Study to Assess Cumulative Effects of Transportation Infrastructure on the National Capital Greenbelt do not support a new road corridor through the Greenbelt.	Would address the planned function to accommodate growth. Widenings were evaluated as part of TMP and Cumulative Effects of Transportation Infrastructure on the National Capital Greenbelt and allowed subject to mitigating environmental impacts.
3 a	Social: Minimizes impact on	No physical impacts. Congestion	Significant physical impacts associated with	Few corridors available in the study area. One	Physical impacts associated with additional travel

Criteria		Do Nothing	Widen other Arterials	New North-South Arterial	Widen and Connect Airport Parkway and Lester Road
	existing and planned communities/ development/ conservation lands including downstream impacts. Opportunity to enhance the visual environment and create a gateway to and character for the corridor	impacts to motorists and businesses including the airport. May add additional traffic on upstream and downstream collector and arterial roads. No opportunity to enhance the existing visual environment or create a gateway to and character of the roadways.	unplanned road widenings for additional travel lanes. As above, additional lanes required in areas where not previously identified and through established communities and open space corridors. Existing and planned land uses may be displaced. May add unplanned additional traffic on upstream and downstream collector and arterial roads. No opportunity to enhance the existing visual environment or create a gateway to and character of the roadways.	hypothetical corridor includes Trillium Line/Sawmill Creek Corridor. May add unplanned additional traffic on upstream and downstream collector and arterial roads. Will require an engineered solution that may not achieve aspirations for an enhanced visual environment or character for the new corridor or existing corridor and may result in diminishing the existing visual environment and open space corridor.	lanes. Additional lanes along Airport Parkway and Lester Road can likely be accommodated with minimal impact to adjacent development lands and communities. May add additional traffic on upstream and downstream collector and arterial roads. Greatest opportunity to enhance the visual environment and character of Airport Parkway and Lester Road.
3 b	Biological: Minimizes impact on natural heritage features including designated Core Natural Areas and Natural Links, Significant Wetlands, Species at Risk, surface water and aquatic habitats.	No physical impacts. Increased congestion could result in greater emissions.	Physical impacts associated with additional unplanned arterial road widenings. Existing ROW adjacent to urban natural/environmental areas (Riverside Drive, Conroy Drive, River Road corridors) natural core areas and links (through greenbelt lands) as well as provincially significant wetlands (Albion Road).	Significant physical impacts associated with a new transportation corridor including implications for stormwater management and ecological footprint of a new corridor through provincially significant wetlands and greenbelt designations.	Physical impacts associated with additional travel lanes. Implications for stormwater management and displacement of provincially significant wetlands. Displacement of Core Natural Areas and Links, and significant wetlands would be at edges with opportunities for a compact design to mitigate impacts.

Criteria		Do Nothing	Widen other Arterials	New North-South Arterial	Widen and Connect Airport Parkway and Lester Road
3c	Physical: Minimization of impacts related to geotechnical considerations (geology and hydrology)	No impacts.	Physical constraints may be variable.	Physical constraints within the study area include high water table requiring for designs to be at or above grade.	Physical constraints within the study area include high water table requiring for designs to be at or above grade.
3d	Economic: Minimization of capital construction cost as well as land acquisition costs.	No capital cost.	Additional study requirements likely to accommodate unplanned widenings outside the study area. Land acquisitions required for widenings may be deemed unaffordable as many corridors are within established communities and areas not presently protected for widenings.	Considerable capital cost anticipated to construct a new two lane arterial in addition to considerable federal land acquisitions and engineering solutions required within identified corridor. Cost of connectivity to east-west arterials would be significant as would the cost of re-creating displaced stormwater management facilities and watercourses.	Moderate capital cost anticipated (compared to a new north-south arterial) with some land acquisition anticipated including some federal land acquisition.
	Conclusion	Does not address the need and introduces additional impacts on motorists and surrounding communities. Not Recommended	Significant impact on existing communities and corridors including cumulative effects on transportation facilities through the greenbelt considered too great. May not successfully add capacity and connectivity in the corridor and may lead to longer travel distances. Not Recommended	Significant impact of land requirements for a new corridor including cumulative effects on transportation facilities through the NCC Greenbelt and provincially significant wetlands, the Sawmill Creek corridor, and cost considered too great. Not Recommended	Best accommodates the needs/opportunities within identified corridor and gives the greatest potential to manage/minimize environmental effects as well as opportunities to improve or enhance the visual environment and open space character of the corridors. **Recommended Solution**

4.5 Preliminary Preferred solution

Based on the preceding analyses, the Preliminary Preferred Solution is to widen both the Airport Parkway and Lester Road to four lanes, and provide additional connectivity within the arterial road network.

This Preliminary Preferred Solution was evaluated to best meet the transportation needs/opportunities required in these corridors within the planning horizon and provides the greatest flexibility in the long term. Transit would be accommodated in the planned Trillium Line Extension and Airport Spur projects. Planned cycling and pedestrian facilities would also be accommodated in the corridors for which they are identified. This solution also gives the greatest opportunity to enhance the visual environment and character of the roadways and minimize the environmental footprint of both facilities.

4.6 Stakeholder Consultation

4.6.1 Consultation Group Meetings

Consultation group meetings (Agency, Business and Public) were held on December 3rd and 4th, 2015. The Study Team, including members from the City of Ottawa and the consultant team, were available to discuss the study and answer questions in a round table forum. At these meetings, participants were presented with information that was to be communicated at the first public open house including: confirmation of project need and opportunities for the widening, an overview of existing conditions, the evaluation of alternative solutions, and the preliminary preferred solution. Input received at these meetings included discussion on the following topics:

- Growth and development in the surrounding communities;
- Connectivity and access to the Airport terminal building and the surrounding employment lands;
- Truck route designations;
- Need for analysis of downstream impacts;
- Project phasing (as noted in the TMP);
- Influence of the Trillium Line extension;
- Pre-engineering of existing crossings to accommodate a widening;
- Additional connectivity at Walkley Road;
- Effect of project on potential widening of Albion; and
- Modal shares and incentives for shifts.

For a full account of discussion from these consultation groups, refer to Appendix A - Consultation Record.

4.6.2 Public Open House #1

Public Open House #1 was held on Tuesday, January 27, 2015 at the Jim Durrell Recreation Centre from 6:00 to 8:30pm. The open house included a series of display boards that informed the public of the work completed to date. Study team members were present to answer questions in an informal setting. The information included on the display boards was also given as a presentation to the public at 7:00 pm followed by a question and answer period. The material presented at the Public Open House included information on:

- Study Overview and Purpose
- Environmental Assessment Process
- Study Schedule and Consultation Activities
- Overview of Existing Conditions
- Needs and Justification Findings
- Alternative Design Development
- Design objectives for Transportation Facilities through/along wetlands
- Alternative Design Evaluation Criteria
- Alternative Cross-Section Development

- Opportunities for a renewal in the corridors
- Evaluation of Alternative Solutions
- Downstream Impacts
- Preliminary Alternatives Design for the Airport Parkway/Lester Road Connections

Notification of the Open House occurred through advertisements in daily citywide newspapers on the following dates:

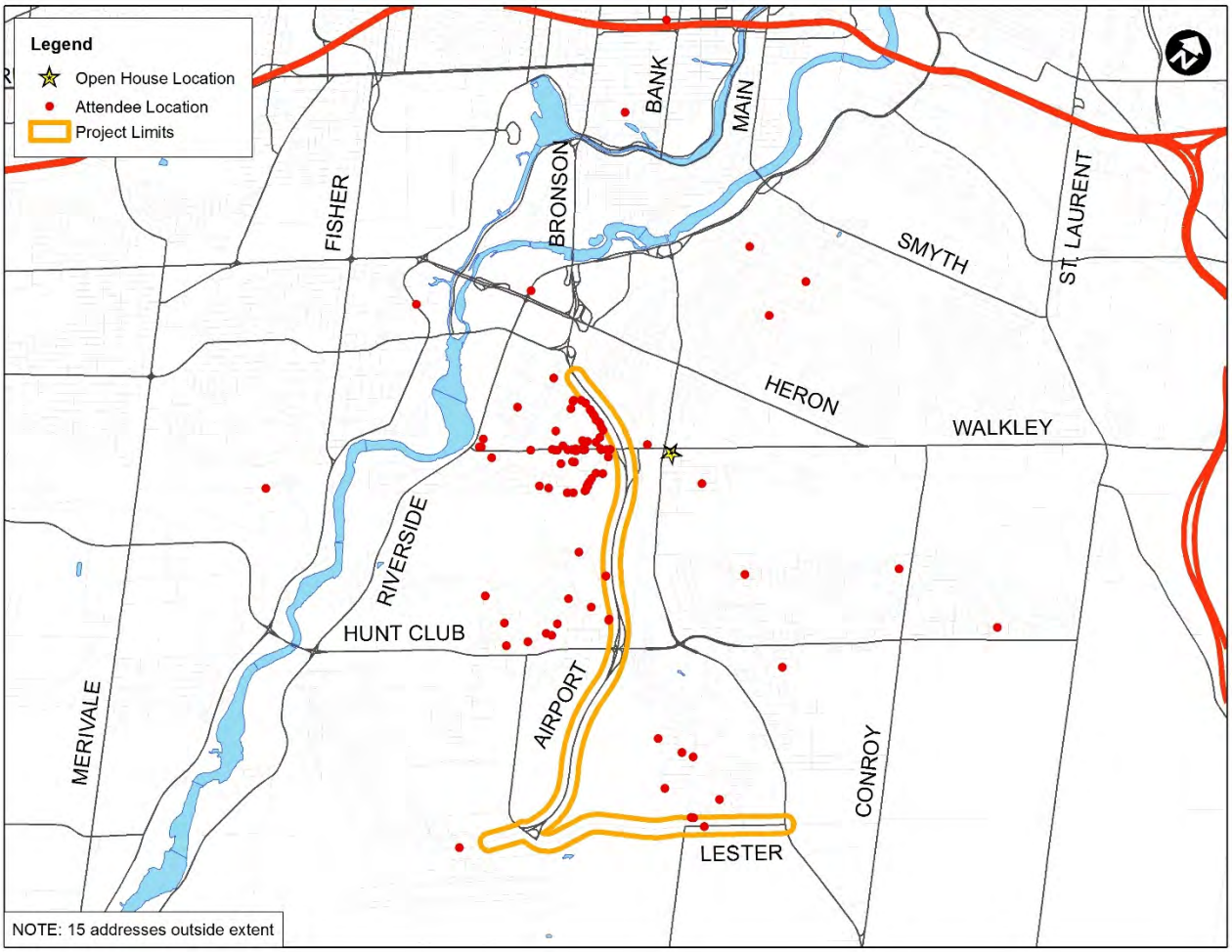
- EMC News, Thursday, January 15th, 2014 and Thursday June 22nd, 2015
- Le Droit, Friday January 16th, 2014 and Friday, June 23rd, 2015

An email notification was sent on January 16th to all persons on the study's master mailing list and included members of the ACG, BCG and PCG, those listed on the Aboriginal contact list at that time. A reminder email was also sent the Friday prior to the Public Open House

A resource table was also provided with background materials available for review by members of the public. This material included copies of the City of Ottawa Official Plan and Transportation Master Plan, the Ontario *Environmental Assessment Act*, the Pedestrian Plan and Cycling Plan, and the Municipal Class Environmental Assessment Process.

A total of 95 people signed-in over the course of the evening. Based on the addresses provided, individuals attending the Public Open House were largely located along the within the study area in proximity to the Airport Parkway and Lester Road corridors (Figure 4-1).

Figure 4-1: Distribution of Open House #1 Participants



To further assist in obtaining feedback from attendees, a Comment-Questionnaire was distributed at the Public Open House. Members of the public were encouraged to provide written comments via the Comment-Questionnaire and submit them either before leaving the Open House or by fax, email or regular mail. Some of the questions asked during the presentation, and the answers provided by the study team were:

- It was suggested that improving the connectivity of Walkley Road to the Airport Parkway would be beneficial. *It was noted that this would be studied.*
- It was asked whether the widenings and the transit extensions are both needed. *It was noted that the TMP has taken a comprehensive approach to transportation and both projects have been identified. It was further noted that the two on-going studies for the widenings and the extension of the Trillium Line are coordinated.*
- It was asked what the impacts on a widened Parkway would be on the Bronson Corridor. *It was noted that the Airport Parkway is part of an Arterial Road Network and that there are points of connectivity throughout. Not everyone is destined to downtown.*
- It was asked whether a reversible lane was considered. *It was noted that the concept of a reversible lane was evaluated as a solution but has limited compatibility with this corridor.*

- It was asked why Albion Road is not being widened at this time. *It was noted that Albion Road is not included in the City's Affordable Network. The intersection of Lester Road and Albion Road will be analyzed for improvements.*
- It was suggested that the Trillium Line Extension be constructed first and then re-evaluate the need for the widenings. *Noted.*

When asked if the Public Open House has given a better understanding of the project, the results were:

Yes	–	19
No	–	0
Somewhat	–	8
No response	-	3

For a full account of all comments received during this open house, refer to Appendix A - Consultation Record.

4.7 Preferred Solution

In accordance with the conclusion of the preceding sections, consideration of the comments received through consultation with affected stakeholders, the TMP recommendation for a widening of the Airport Parkway and Lester Road as well as new road connections to Walkley Road and Uplands Drive was confirmed as the Preferred Solution.

Given the clear need to widen Airport Parkway and Lester Road and provide appropriate connectivity to the road network, the development and evaluation of alternatives designs will focus on alternative alignments and cross-sectional elements and will address matters such as:

- rural versus urban cross-section;
- lane widths;
- roadway division (or not);
- access management (including medians);
- intersection/interchange treatments (including roundabouts);
- turn-lane and storage requirements;
- cycling/pedestrian facilities;
- servicing and utilities;
- roadway and pathway lighting;
- roadside safety;
- corridor drainage; and
- landscaping.

Also, given the valued environmental features abutting the corridors, reducing the physical footprint of these facilities will be a major design objective. In addition, considerations will need to be made on how to integrate the facilities to the area transportation network including providing access to the airport employment lands while maintaining an efficient route to access the terminal building for travel.

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