MEMORANDUM

Reference No.: 20009

BLOCK 27 MAJOR ROADS EA TERMS OF REFERENCE

May 14, 2021 Reference No.: 20009

TO: Block 27 Landowners Group Inc. / City of Vaughan

FROM: Irene Hauzar / Senior Project Manager / LEA Consulting
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RE: Block 27 Road Network MCEA Terms of Reference

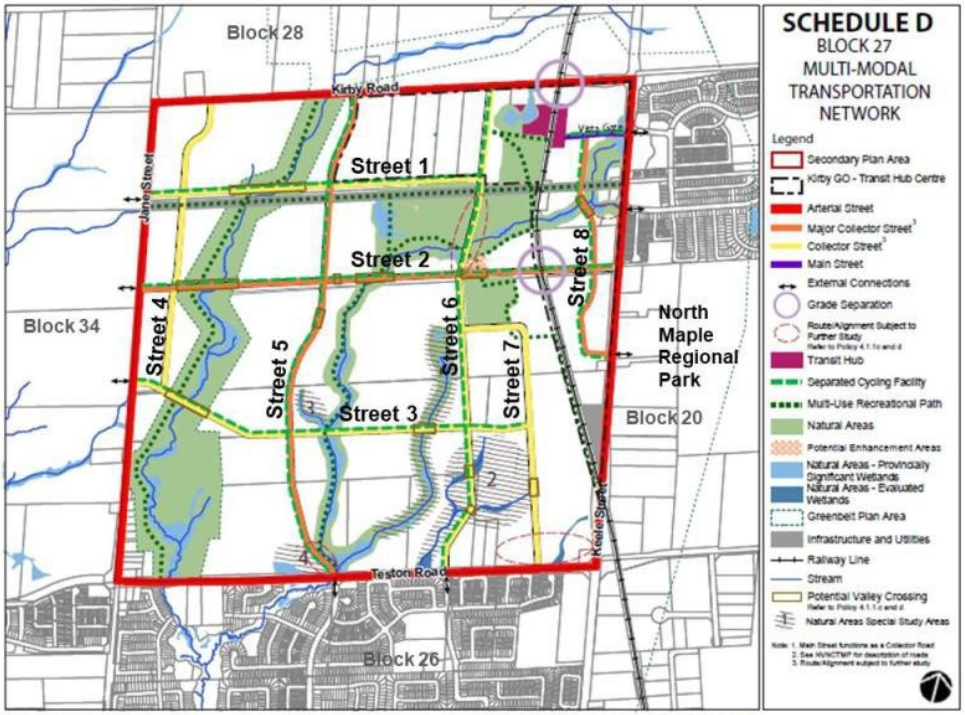
1 INTRODUCTION

The Block 27 Landowners Group Inc., in partnership with the City of Vaughan as a co-proponent, is undertaking and advancing a Municipal Class Environmental Assessment (MCEA) for the major collector road in the planned Multi- Modal Transportation Network (Schedule D Secondary Plan) for the New Community Block 27 Secondary Plan area in North Vaughan. In accordance with the York Region Official Plan the City of Vaughan began the planning process for a new Community Area known as Block 27, in January 2015. The Block 27 Secondary Plan was adopted by Vaughan Council in September 2018 and approved by York Region Council, with modifications, on April 18, 2019, to guide future development in this area to the year 2031 and beyond. Concurrent and in coordination with the Secondary Plan process, the City undertook the North Vaughan and New Communities Transportation Master Plan (NVNCTMP January 2019 as amended August 2019) study that was carried out and satisfied Phases 1 and 2 of the MCEA planning and design process for recommended transportation infrastructure improvements including for new community area Block 27. A Notice of Completion was issued on February 28, 2019.

Block 27 is located north of Teston Road (Regional Road 49), east of Jane Street (Regional Road 5), south of Kirby Road, and west of Keele Street (Regional Road 6). A map of the study area is shown below. It is currently comprised of mainly agricultural lands, Greenbelt, and natural heritage systems. It is designated as a New Community Area within the VOP 2010.

The Block 27 Secondary Plan is intended to result in development that is transit-oriented, compact, sustainable and diverse, with a robust natural heritage system. Plans for Block 27, as a result, include a mix of uses, such as low-rise and mid-rise residential housing, mixed use, retail, as well as a community hub. Community Hub is planned to include a community centre, schools, a park, library, and other community facilities. Open space areas are also integrated within the overall development plan having an overall net

positive environmental outcome. A system of multi-modal transportation facilities, including trailways, sidewalks, walkways, and cycling facilities, is planned as part of the overall development of the area.



Source: North Vaughan and New Communities Transportation Master Plan Final Report (Amended August 2019)

Figure 1: Block 27 Multi-Modal Transportation Network

2 PROJECT UNDERSTANDING

Purpose of the Study

The purpose of this MCEA study is to concurrently advance the planning and design process satisfying Phases 3 and 4 in accordance with the Municipal Class Environmental Assessment (MCEA) for the following major collector road projects.

Alternative design concepts for the following major collector and collector roadways within Block 27 will be considered:

- Street 1 (E-W Collector) - between Jane Street and Street 6
- Street 2 (E-W Major Collector) - between Jane Street and Keele Street (incl. grade separation with Barrie rail corridor)
- Street 3 (E-W Collector) - between Jane Street and Street 7
- Street 4 (N-S Collector) - between Kirby Road and Street 3
- Street 5 (N-S Major Collector) - between Kirby Road and Teston Road
- Street 6 (N-S Collector) - between Kirby Road and Teston Road
- Street 7 (N-S Collector) - between Street 6 and Teston Road
- Street 8 (N-S Major Collector) - between Vista Gate and Keele Street

Broadly, this MCEA will build upon the preferred alternative solutions identified by the NVNCTMP, as well as the policies and principles set forth by the Block 27 Secondary Plan. The transportation network for Block 27 will be designed to accommodate all modes of travel for all ages and abilities while prioritizing transit, cycling, and walking. The collector roads will be designed understanding their role as important linkages and thoroughfares within Block 27 that support the development of a new community that will be compact, vibrant, inclusive, healthy sustainable and diverse. Respecting this ole, this study will develop alternative design concepts and identify a preferred design for each of the collector roads, balancing the need for a connected and continuous, grid-like street network, while recognizing the constraints presented by the railway, TransCanada Pipeline, and Natural Areas.

2.1 OBJECTIVES AND DELIVERABLES

The objective of this study is to complete Phases 3 and 4 of the MCEA process for the proposed Schedule C projects within the subject lands. The overall objectives are to:

- Develop, assess, and identify a preferred multi-modal design concept for each roadway segment;
- Satisfies requirements for all crossings, including watercourses, natural heritage network and rail crossings;
- Provide 30% design for all crossings and bridge abutments;
- Roadworks would be completed to a 10% level of detail during the EA process, following the completion of the EA, 30% detailed design will be prepared;
- Ensure a fulsome public consultation and engagement process, meeting all requirements set out within the MCEA process;
- Address Environmental Study Report (ESR) comments;
- Respond to any Part II Orders; and,
- Establish preliminary designs that support multi-modal transportation for each of the collector road projects.

In achieving the above, the LEA team will also confirm Phases 1 and 2 of the MCEA process are satisfied based on the work completed through the NVNCTMP.

When the study is complete, a Notice of Completion will be issued and the Environmental Study Report documenting the study process will be filed for the 30-day-mandatory public review period in accordance with the Municipal Class Environmental Assessment Process.

It is noted that any Block Plan Schedule B and A projects that otherwise emerge through Block Plan component studies will be addressed through those respective studies (I.e.: MESP and Transportation Mobility Plan Study)

2.2 BACKGROUND and CONTEXT INFORMATION

There have been a number of recently completed studies, plans, and guidelines prepared by the City and its consultants, in addition to reports prepared by other government agencies, that are available and relevant to this project. These documents will serve as the planning context and framework for advancing this MCEA study t. These documents reviewed will include, but are not limited to, the following:

- City of Vaughan Transportation Master Plan-A New Path (2012) (currently being updated)
- City of Vaughan Pedestrian and Bicycle Master Plan (2020)
- City of Vaughan Active Together Master Plan (2018)
- North Vaughan and New Communities Transportation Master Plan (NVNCTMP) 2019
- York Region Official Plan (2010)
- VOP 2010 (currently undergoing a Municipal Comprehensive Review)
- Draft City of Vaughan Environmental Management Guide (2013)
- Block 27 Secondary Plan Study Report & Kirby GO Transit Hub Sub-Study
- New Community Area-Block 27 Secondary Plan Report, 2018
- City of Vaughan Stormwater Management Plan (2014)
- City of Vaughan Transportation Impact Study Guidelines (2018)
- City of Vaughan Zoning By-Law (2018)
- Green Directions Vaughan: Environmental Master Plan (Updated 2019)
- City of Vaughan Accessibility Plan and Policy (2013)
- City of Vaughan Tree By-Laws & Policies (2007)
- City of Vaughan Tree Protection Protocol (2018)
- City of Vaughan City-Wide Streetscape Manual (2014)
- City of Vaughan Pedestrian & Cycling Design Guidelines (underway)
- City of Vaughan Highway 400 North Employment Lands Secondary Plan (2011)
- City of Vaughan Design Criteria and Standard Drawings (2018)
- City of Vaughan Urban Design Guidelines Volumes 1&2 (2018)
- Metrolinx Barrie Rail Corridor Expansion Project TPAP EPR (2017)
- Metrolinx The Big Move (2008)
- Metrolinx Regional Transportation Plan (2018)
- York Region Transit Oriented Development (2006)
- York Region Transportation Master Plan (2016)
- York Region New Communities Guide (2013)

- York Region Pedestrian & Cycling Planning & Design Guidelines
- Provincial Policy Statement (2020)
- Growth Plan for the GGHS (2020)
- Greenbelt Plan (2017)
- Oak Ridges Moraine Conservation Plan (2017)
- Ontario Ministry of Transportation Transit-Supportive Guidelines (2012)
- Ontario Ministry of Transportation Cycle ON: Ontario's Cycling Strategy (2013)
- Ontario Ministry of Transportation Environmental Guide for Air Quality (2012)
- Ministry of Indigenous Relations and Reconciliation Consulting Indigenous Communities (2019)
- Environmental Noise Guideline (NPC-300), 2013
- Ontario's Climate Change Plan (2016)
- Considering Climate Change in EA process (2016)
- Management of Excess Soil (2016)
- Agricultural Impact Assessment (AIA) Guidance Document (2018)
- Block 27 Sub-watershed Study (2017)
- Kirby Road Extension MCEA (ongoing)
- Credit Valley Conservation (CVC) Wildlife Crossing Guidelines (2017)
- Toronto and Region Conservation Authority Crossing Guidelines (2015)
- Toronto and Region Conservation Authority Open Data and Information
- Toronto and Region Conservation Authority HDF Guidelines (2014)
- Toronto and Region Conservation Authority The Living Cities (2014)
- Toronto and Region Conservation Authority EIS Guidelines (2014)
- Toronto and Region Conservation Authority SWM Criteria (2012)
- Toronto and Region Conservation Authority LID SWM Guide (2010)
- Toronto and Region Conservation Authority Terrestrial Natural Heritage System (2007)
- Toronto and Region Conservation Authority Field Staking Protocol (2016)
- Toronto and Region Conservation Authority Forest Edge Management Guidelines (2004)
- Toronto and Region Conservation Authority Ecosystem Compensation Guide (2018)
- Natural Heritage Network Study (2016)

The below summarizes the key elements from some of the central plans and studies that will guide this study:

The **North Vaughan New Community Transportation Master Plan (*NVNCTMP)*** (2019) is a long-range plan that recommends policies, programs and infrastructure required to meet existing and future (2031) mobility needs and provide the context for transportation decisions within North Vaughan. The NVNCTMP identified the transportation requirements for the New Community Areas, Block 27 (NVNCTMP -Appendix A: Block 27 Transportation Network) and Block 41, ensuring the transportation networks for these communities are integrated and connected to the North Vaughan area. The study followed Approach #1 for the Transportation Master Plans (TMP), as outlined by the Municipal Class Environmental Assessment (MCEA) Guidelines (October 2000, as amended in 2007, 2011 and 2015). In doing so, the study results can serve as direct input to any subsequent Environmental Assessment (EA) studies for Schedule B and C infrastructure projects. The study satisfied Phases 1 and 2 of the five phase MCEA process, which includes the development of a Problem and Opportunity Statement, as well as the evaluation and selection of a preferred alternative planning solution. Both of which will be carried forward andbe used as part of this MCEA.

Specifically, the NVNCTMP *Problem and Opportunity Statement* was identified to be the following:

> *The NVNCTMP study area is in need of capacity and operational improvements with regards to transportation network supply for all travel modes. The rural nature of the area, limited transit service and limited active transportation facilities have resulted in the overwhelming automobile dependency by local residents. In addition, several network gaps, sub-standard road cross-sections, and challenging vertical alignments have reduced connectivity, safety, and led to overburdened east-west and north-south continuous links such as Major Mackenzie Drive and Highway 400.*
>
> *Through the development of the New Communities and the Highway 400 North Employment Area, opportunities exist to build upon existing plans to provide better connectivity and continuity by bridging gaps, connecting to the provincial highway network, eliminating jogs, expanding transit service to the study area, improving cross-sections and slopes, and providing active transportation facilities to reduce the reliance on the automobile.* (NVNCTMP, pg. 83)
>
> The NVNCTMP and more specifically Appendix A: Block 27 Transportation Network documents study background and recommendations for the transportation network in support of Block 27 Secondary Plan.

The ***York Region Official Plan*** (2010) represents York Region's ongoing collaboration with its partners and stakeholders in rethinking how communities are designed, serviced, and supported. The York Region OP states that local municipalities design street systems that have due regard to support all modes of transportation, including walking, cycling, transit, automobile use and the efficient movement of goods. It further encourages the development of a sustainable Region based on a

variety of community considerations including promoting active lifestyles and providing safe, accessible mobility systems. Based on these policies, this study will ensure that the road designs are developed in a way that accommodates all modes of transportation, encourage community vibrancy, and minimize the impact on climate change.

The ***VOP*** (2010) sets the overall vision for how the City of Vaughan is to develop over the long term. Specifically, it is developed around eight (8) goals/themes. Of the themes, the following are specifically applicable to this study:

- Developing **Strong and Diverse Communities**, enabling ways in which people can interact with one another on a daily basis
- **Moving Around without a Car**, resulting in cleaner air, more enjoyable streets, and increasing the use of active modes of transportation
- Ensuring **Design Excellence and Memorable Places**, leveraging the natural assets and the creation of a high quality built environment
- Encouraging **A Green and Sustainable City**, that supports sustainable development and allows for alternative transportation choices

Further, the ***Block 27 Secondary Plan*** is a component of the VOP and is designed to guide the creation of a complete community within Block 27. The plan establishes polices for a new community that will be compact, vibrant, inclusive, healthy, sustainable, and diverse, while being designed to have a net positive environmental outcome. The Block 27 Secondary Plan provides more detailed policies than the VOP with respect to land use, including height and density, urban design, the protection of cultural heritage and archaeological resources, transportation, community facilities, natural heritage, and open space. The Block 27 Secondary Plan Study implements the results of a detailed consultation process, while taking into consideration feedback from the Sub-Study for the Kirby GO Transit Hub, and the North Vaughan and New Communities Transportation Master Plan (NVNCTMP).

The ***Natural Heritage Network Study*** (2016) identifies the natural features consistent with the Provincial Policy Statement and proposes additional Natural Heritage Network areas to meet biodiversity and ecosystem function targets. The Natural Heritage Network Study includes an assessment and inventory of significant wildlife habitat, flora and fauna as well as headwaters evaluation.

2.3 CHALLENGES AND CONSTRAINTS

In developing the study design for this project, the LEA team has identified a number of potential constraints and challenges that the project will need to overcome. These have been identified based on our preliminary review of the background materials and understanding of the area. As the study develops mitigation plans will be developed for each and monitored through to project completion.

Key Constraints

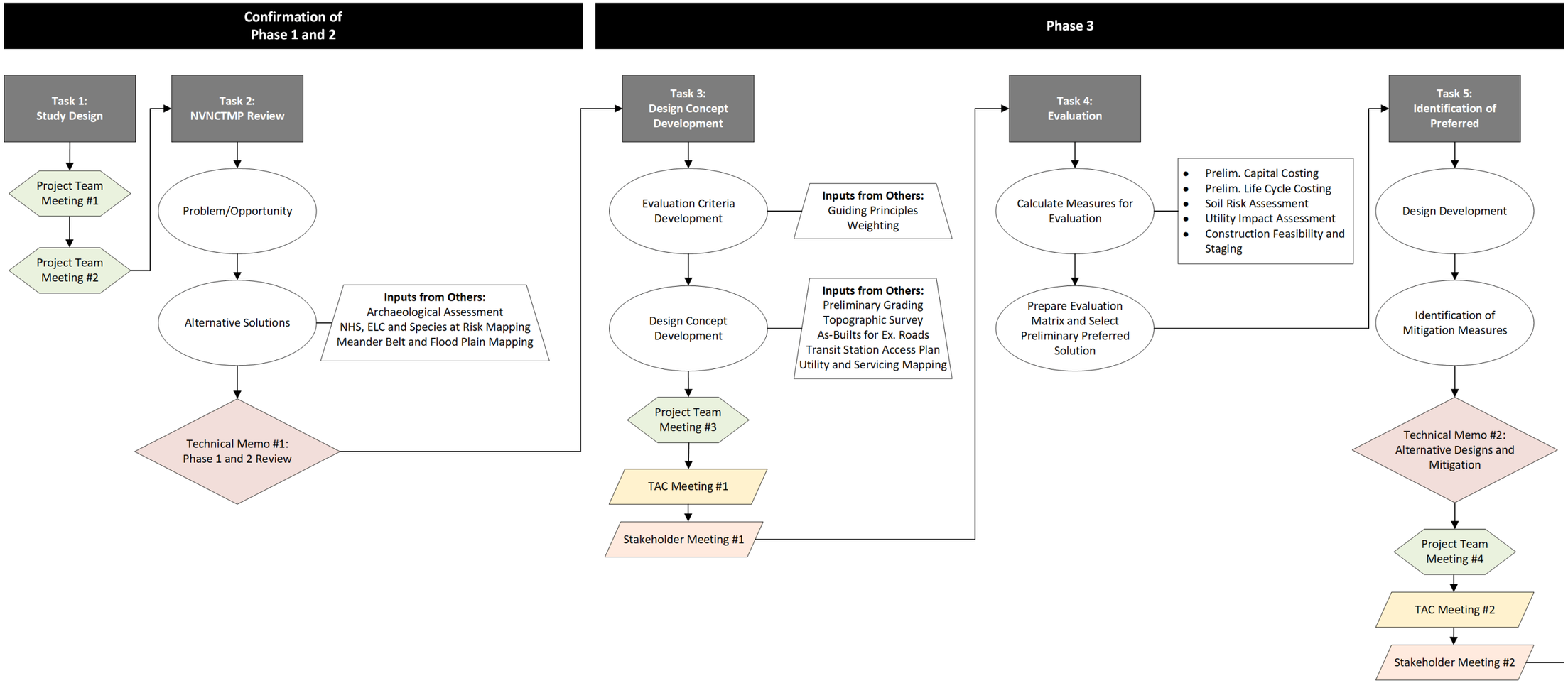
Key constraints identified below may limit options that can be developed as part of the study. Some of the constraints that have been identified at this early stage include:

1. Environmental Sensitivity
    - ✓ The planned road network within Block 27 will traverse multiple environmentally sensitive areas. This includes multiple watercourses, Provincially Significant Wetland areas, woodland areas and the Greenbelt. The designs will need to consider alternatives that minimize their impact not only by way of the physical footprint but the identification of a sensitive alignment. Studies completed as part of the Block Plan pertaining to wetland/water monitoring, including the Block 27 Subwatershed Study will be carefully examined during this EA.
2. Utility Corridors
    - ✓ Block 27 is traversed by a major utility corridor, the east-west TransCanada Pipeline (TC Energy) just south of Kirby Road. The TC Energy corridor acts as a physical barrier to development. While the major roads can cross the TC Energy corridor they will be subject to the design requirements set out by the TransCanada. Incorporating these requirements, while ensuring a seamless connection will be critical for the successful design of the proposed roads.
3. Grade Separation
    - ✓ The grade separation of the Barrie GO Rail Corridor is a critical component to achieve the east-west connectivity within the Block 27 community. In addition to confirming the proposed underpass, this study will need to address the design requirements associated with constructing a rail bridge with live rail traffic, as well as the potential stormwater drainage implications.
4. Coordination of Concurrent Studies
    - ✓ There are a number of ongoing and emerging studies that are being conducted in and around the Block 27 Study Area. These include, but are not limited to, the: Transit Hub Special Study; Kirby Road Widening EA; Teston Road IEA; Master Environmental and Servicing Plan (MESP) and Block 27 Block Plan Studies;.
    - ✓ Transit Hub Special Study will be focused on providing seamless multi-modal connections for regional and local transit, centred on a future GO station.
    - ✓ Kirby Road Widening EA (currently ongoing) will reconfirm the need and determine the preferred design for the widening, grade-separation and jog elimination along Kirby Road between Jane Street and Dufferin Street. Part of the Block 27 northern study limit abuts the Kirby Road widening study area.
    - ✓ Teston Road Individual Environmental Assessment (IEA) examines transportation improvements in the Teston Road area of the City of Vaughan between Highway 400 to Bathurst Street and between Major Mackenzie Drive and Kirby Road. Currently, a Terms of Reference has been approved to guide the future IEA.
    - ✓ The Master Environmental and Servicing Plan (MESP) is a supporting study that is required through the Block Plan application process and will be conducted as a separate study. As

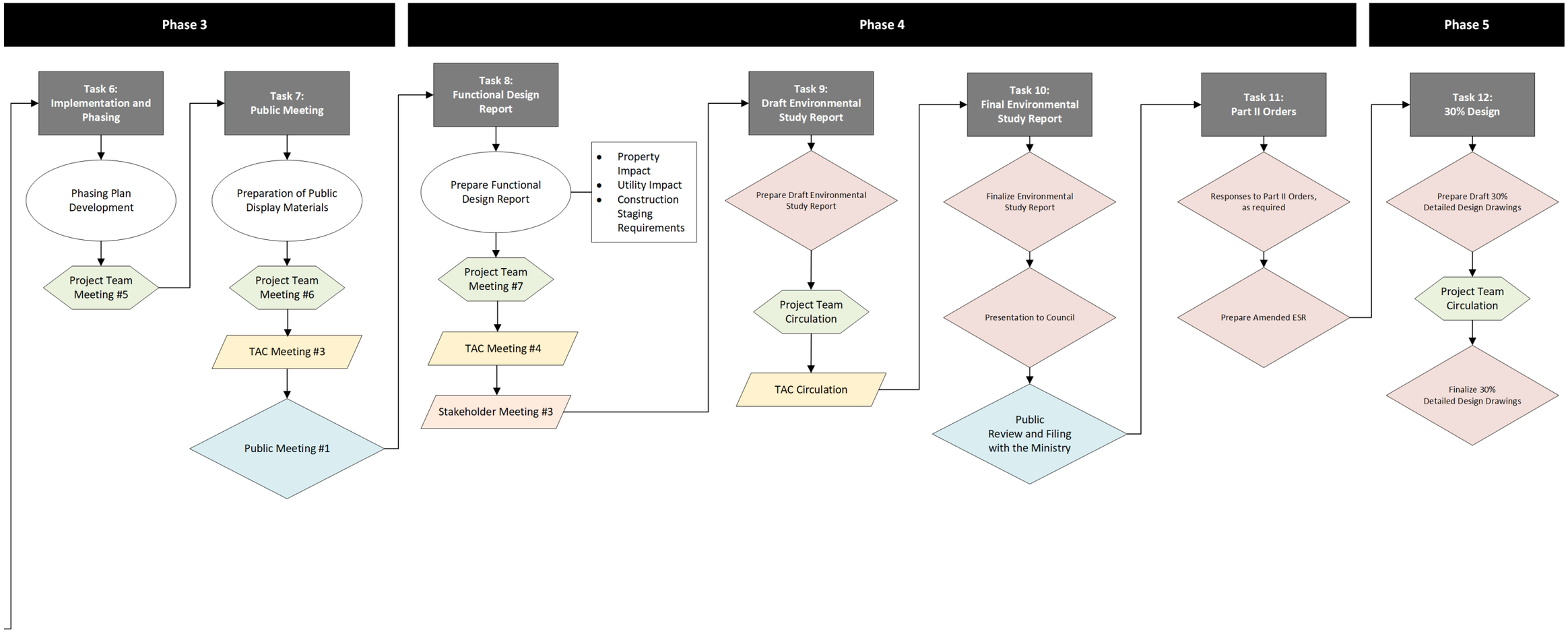
this study progresses, analysis and assumptions will need to be coordinated with the relevant surrounding studies to ensure that the preferred alternatives identified merge smoothly with the surrounding transportation network. The flowchart below shows how the study will proceed, incorporating input from the concurrent studies into the MCEA Schedule C process.

- ✓ Block 27 Block Plan Studies, currently ongoing including the Block Plan Report, Transportation Demand Management Plan, Urban Design and Architectural Guidelines, Cultural Heritage Resource Impact Study, Archaeological Assessment, Noise and Vibration Study, Environmental Site Assessment, Agricultural Site Assessment, Development and Infrastructure Phasing Plans, Sustainability Performance Metrics, Community Energy Plan, Community Services and Facilities Impact Study, and Implementation Plan. Each of the studies noted above will establish an updated existing conditions assessment for the Block 27 study area. This will be used as a benchmark in the evaluation of the Alternative Design Concepts. Furthermore, the recommendations put forth from the Major Roads EA will be incorporated into the development of the Transportation Study, as well as the development of the final block structure.

EA Task Workflow Diagram



EA Task Workflow Diagram (cont'd)



In addition to the design constraints identified above, the project team has also identified a set of potential challenges to the successful completion of the project. These include:

EA Schedule - While the NVNCTMP lists Street 2, 5, and 8 as Schedule C projects that need to satisfy the Phase 3 and 4 MCEA requirements, the other collector roads include potential valley crossings that require the completion of an environmental assessment (as per Block 27 Secondary Plan Policy 4.1.1.c). Recognizing these potential impacts, LEA is proposing to include all 8 streets as part of a single EA. While this results in a larger initial scope for the EA, it has the benefit of ensuring that designs of the structures and adjacent road grading is coordinated at an early stage. This can provide the benefit of minimizing the overall footprint of the road through environmentally sensitive areas as well as minimizing the required cut and fill to accommodate the proposed profile.

Multiple Stakeholders – The City of Vaughan and the Block 27 Landowners Group, Inc are co-proponents of the study, and as a result, both parties are required to be consulted throughout the study at all major decision points. LEA has gained significant experience in working with multiple co-proponents on EA studies, such as the Steeles East Bridge MCEA, which was jointly led by the City of Toronto, York Region, and Metrolinx. In addition, LEA is in the process of completing another MCEA that has a co-proponency arrangement, specifically with the Town of Whitby and a Landowners Group in the Brooklin area of Whitby.

Potential Mitigation Measures:

- *Developing a clear Study Design: Having a clear study design with the roles and responsibilities outlined will be critical to ensuring the expectations of both co-proponents are met. This will ensure each party is clear on when input will be sought and the type of input that will be required.*
- *Developing a Stakeholder Engagement Plan: Beyond the co-proponents, it will also be important to engage other parties and agencies that have an interest in the EA throughout the process. Developing a stakeholder engagement plan at the outset along with critical touch in points, for example strategically timed Technical Advisory Committee meetings, will be critical to ensuring constructive dialogue between the project team and these parties.*
- *Engaging the public through alternative methods: Given the ongoing realities of the COVID-19 pandemic, alternative forms of consultation beyond the traditional Public Open House will need to be utilized to satisfy the MCEA requirements. Public consultation was robust through the NVNCTMP and Block 27 Secondary Plan process and should be continued during the EA process. During the development of a Public Communications Plan, LEA will consider online and mailed surveys, digital engagement with community leaders and advisory groups, and online open house forums. LEA has experience using a variety of online tools to obtain public feedback, and will employ that expertise to facilitate the consultation process for the Major Roads EA.*

Road Geometry and Safety – The proposed alignments and geometry need to be designed to accommodate for all modes of transportation for each of the 8 road segments. Some of these roads

are expected to feature environmental constraints, such as natural watercourses or the protection of species at risk or built structures, which will require the right-of-way to be developed in a context sensitive approach. The key will be to identify existing physical constraints early in the process. Further, the study will also consider innovative solutions for modifying the standard road cross-sections and use of other mitigation mechanisms to preserve the existing features. These constraints identified are similar to those LEA experienced as part of the North Queen Street Extension MCEA and North Brooklin Major Roads MCEA in Whitby. This project experience will be used to address the safety and roadway geometry concerns of this EA Study.

Potential Mitigation Measures:

- *Minimize initial alignment impacts: LEA will review the NVNCTMP recommendations in areas with significant ROW requirements or environmental impacts and will consider alternative alignments to avoid these areas altogether, or context sensitive modifications to the road cross-section to reduce the roadway footprint.*
- *Minimize right-of-way: the proposed alignment options will reflect municipal and TAC standards and will consider best practices to minimize right-of-way requirements while satisfying the existing and future demands.*

Natural Environment – The study area is extensive and largely undeveloped, with significant portions identified for new development. While previous natural heritage reports such as the Block 27 Subwatershed Study have been completed as part of the NVNCTMP and Secondary Plan, additional field work is being conducted as part of the SWS Addendum and will be drawn upon for this study, specifically considering Top of Bank and Dripline Staking/Surveys, Bat investigations, and habitat/fluvial assessments in the alignment areas of the road segments. There are potential environmentally sensitive areas within and immediately adjacent to the study area, as well as the potential for issues regarding Species at Risk, Source Water Protection Areas, and Groundwater Recharge Areas.

LEA has experience in conducting Environmental Assessments in proximity to wetlands, such as the Algonquin Island Bridge EA, which included a habitat with endangered species and required careful consideration of the natural features within and adjacent to the study area. This experience will be vital to ensure the mitigation of potential environmental impacts of any alternative design concepts.

Potential Mitigation Measures:

- *Identification of existing habitats: Developing a robust existing conditions report will minimize the risk of impacts to the natural environment. LEA will review the previous area studies to identify any additional data required and will consult with the LOG and local and provincial authorities to identify the types of additional studies that need to be conducted.*
- *Identification of Impacts: The amount of impacts to the natural environment will be determined and considered together with other criteria as part of the overall evaluation of alternatives.*
- *Mitigation measures: The preferred design solution will possibly have unavoidable impacts, especially concerning impacts to vegetation or those that could arise during the construction period. Where impacts are unavoidable, LEA will focus on identifying ways to minimize the impacts. These may include LID stormwater controls, natural habitat restoration for any*

disturbed flora and fauna, and soil remediation.

Socio-Economic Environments – South and east of the study area features established residential neighbourhoods, while the northern portion includes natural and undeveloped lands, including agricultural lands. As was done for the Liberty Village New Street MCEA study completed by LEA for the City of Toronto, alternative design solutions for this EA Study will reflect the unique context of the study area and will consider pedestrian and cycling movements, improved neighbourhood connectivity, and mitigation of negative impacts to noise and air quality.

Approach to be considered:

- *Identification of existing conditions: minimize residential land acquisition: The study will minimize the risk of impacts to neighbouring properties by considering alternatives that minimize additional land requirements and avoid designated or significant heritage features.*
- *Identification of Impacts: The potential amount of land required will be identified for each alternative under consideration and be documented as part of the overall evaluation of alternatives.*
- *Community benefits: Any construction period will have impacts to the existing community users. Therefore, the study will include additional improvements to the study area, including aesthetic, beneficial infrastructure for pedestrians and cyclists and recreational uses.*

COVID-19 and Related Impacts – Public consultation will occur virtually for the foreseeable future. As such, the LEA team will plan for all meetings to occur online, using various online collaboration tools, such as WebEx, Zoom, or other online meeting tools. LEA will work with the City of Vaughan to host the public meetings. The virtual public consultation process can include extended public material review periods, due to the increased accessibility associated with viewing virtual materials 24/7.

Potential Mitigation Measures:

- *Virtual consultation: Our project team now designs consultation and meeting documents with a specific emphasis on ensuring they work well in the digital environment. This includes utilizing software that is accessible and easy to understand. This also includes putting in place alternative methods in the case technology fails at critical moments like during project meetings or public consultations. In addition, with the implementation of virtual online public information centres, the timeline for public consultation can be extended for 2-3 weeks to allow for a thorough review by the public.*
- *Public health awareness: LEA has an internal Task Force that is focused on staying up to date with the latest public health developments. This group is a cross-functional committee with various employees and includes individuals dealing with important areas like Facilities, IT, HR, and Communications. They help inform our Transportation Planning Practice Area regarding up-to-date standards and best practices.*

2.4 PROJECT MANAGEMENT

Our project management methods focus on being proactive, moving the schedule along, and delivering the project in accordance with the client's requirements, policies, and procedures. While LEA will manage the completion of the project, decisions on key project components will be made subject to the co-proponents

Project Managers' approval prior to proceeding onto the next component. Effective project management and communications with the project team is critical to the successful completion of any project. Effective control of a project can only be achieved by breaking it down into its component activities. With the baseline budget/schedule prepared, the status of the project will be measured at any time, and early warnings of either cost or time overruns will be identified so that appropriate action can be taken.

Specifically, LEA regularly reviews the following components to ensure the successful completion of the project:

- Scheduling internal reviews well in advance and working to the milestone dates;
- Ensuring that all participants understand their responsibilities, the desired outcome of the review, and the timeline to address any comments;
- Briefing information and review packages will be prepared in advance, where possible, to ensure that all meeting participants can offer meaningful input and work toward the necessary decisions; and,
- Quality Control Plans and checklists will be used for the reviews to provide a consistent approach and to allow ease of the review process.

Our Project Manager, Kenneth Chan, will take a leading role in ensuring the Study adheres to the schedule and budget. Ken will serve as a direct point of contact responsible for all communication to the City and Block 27 Landowners Group Inc, will participate in daily decision-making, and will provide direction to the project team.

3 TEAM QUALIFICATIONS & RESOURCES

The following sections outline the proposed team resources and qualifications. CV's can be found for all team members in **Appendix A**. The organization chart for the proposed team is included in **Appendix B**.

3.1 ABOUT LEA

LEA Consulting Ltd. (LEA) is a privately held, Canadian-owned consulting firm providing planning, engineering design and construction administration services for urban infrastructure projects. LEA's clients and partners include public sector agencies at all three levels of government across Canada, major developers, architects, contractors, and law firms. LEA Consulting Ltd. is part of the LEA Group of companies, which includes LEA Associates South Asia Pvt. Ltd, and has been providing consulting and advisory services in a variety of disciplines since the mid-1950's.

In Canada, LEA has offices in Markham, Toronto, Stratford, and Timmins, Ontario and currently employs over 180 professionals. LEA is an active and influential member of all the key engineering, transportation and planning associations, such as Professional Engineering of Ontario, Consulting Engineers of Ontario, the Association of Consulting Engineering Companies-Canada, and the Canadian Security Association. LEA holds a valid certification of authorization from Professional Engineers Ontario (PEO)-CofA #10903658.

LEA CONSULTING LTD.

LEA's services are extensive and cover a range of aspects as they relate to delivering transportation master planning and infrastructure design, including planning studies and preliminary and detailed design, in accordance with the Municipal Class Environmental Assessment process. LEA has provided Environmental Assessment expertise for both public sector and private sector clients.

For the Block 27 Major Roads EA, our core related services include:

Environmental Assessments (EAs): Through a focus on a detailed technical understanding and developing relationships with key stakeholders, LEA has emerged as a trusted source for providing EA services for high profile projects, with its Senior Management involved in every step of the way. LEA regularly deals with projects that are both technically complex and contextually sensitive. LEA is known for our approach of advancing detailed engineering studies like geotechnical and subsurface utility investigations, usually left to the detailed design process, during the initial planning process as inputs developing alternative options. Some examples of our recent successes include the Steeles Avenue East Grade Separation MCEA, North Queen Street Extension MCEA, and the Liberty Village New Street MCEA.

Active & Sustainable Transportation Solutions: Designing transportation systems and corridors for active transportation to encourage a healthy lifestyle and reduce carbon emissions is a central objective for LEA. We embrace that people are looking to choose healthy travel options to replace the traditional automobile. LEA has been very active in this transformation, working with architects, planners, and urban designers to plan and design accessible multi-modal pathways, corridors and public spaces in accordance with Complete Streets guidelines. LEA approaches this transformation understanding there are several factors that contribute to the success of active transportation solutions including strategic parking supply, availability of infrastructure, and different expectations of the infrastructure from a wide user base.

Traffic Modelling and Operations Analysis: LEA has extensive experience in developing and calibrating traffic models for travel demand forecasting. Macro-, Meso- and micro-simulation of travel demands are modelled using the latest software such as EMME, TransCAD, VISSUM and AIMSUN, allowing a dynamic assignment of trips through a network to identify operational impacts and determine infrastructure requirements. Some examples of our successfully completed projects include the Pan/Parapan AM Games Transportation Micro Modelling Study, St. Clair West Railway Underpass and Road Improvements Functional Planning Study, and the Mayfield West Phase 2 Secondary Plan.

Integrating Multi-Modal Analysis in Transportation Planning: Designing transportation corridors for multi- modal transportation encourages a healthy lifestyle and reduces carbon emissions. LEA's Transportation Master Plan (TMP) studies have included multi-modal analyses to evaluate existing and proposed street networks. For the Scarborough Centre Transportation Master Plan (SCTMP), LEA conducted a quantitative multi-modal assessment to evaluate the existing performance of all transportation facilities within the study area. This included quantifying the demand, utilization, comfort, convenience, conditions, and level of service (LOS) for pedestrians, cyclists, transit riders,

and automobile drivers within Scarborough Centre. This assessment provided a comprehensive understanding of the transportation needs and challenges in the study area and was used to plan Scarborough Centre as a multi-modal urban centre. Having conducted multi-modal analyses in the past, LEA is well equipped to provide recommendations for incorporating multi- modal analysis into road projects and decision-making for the Block 27 EA.

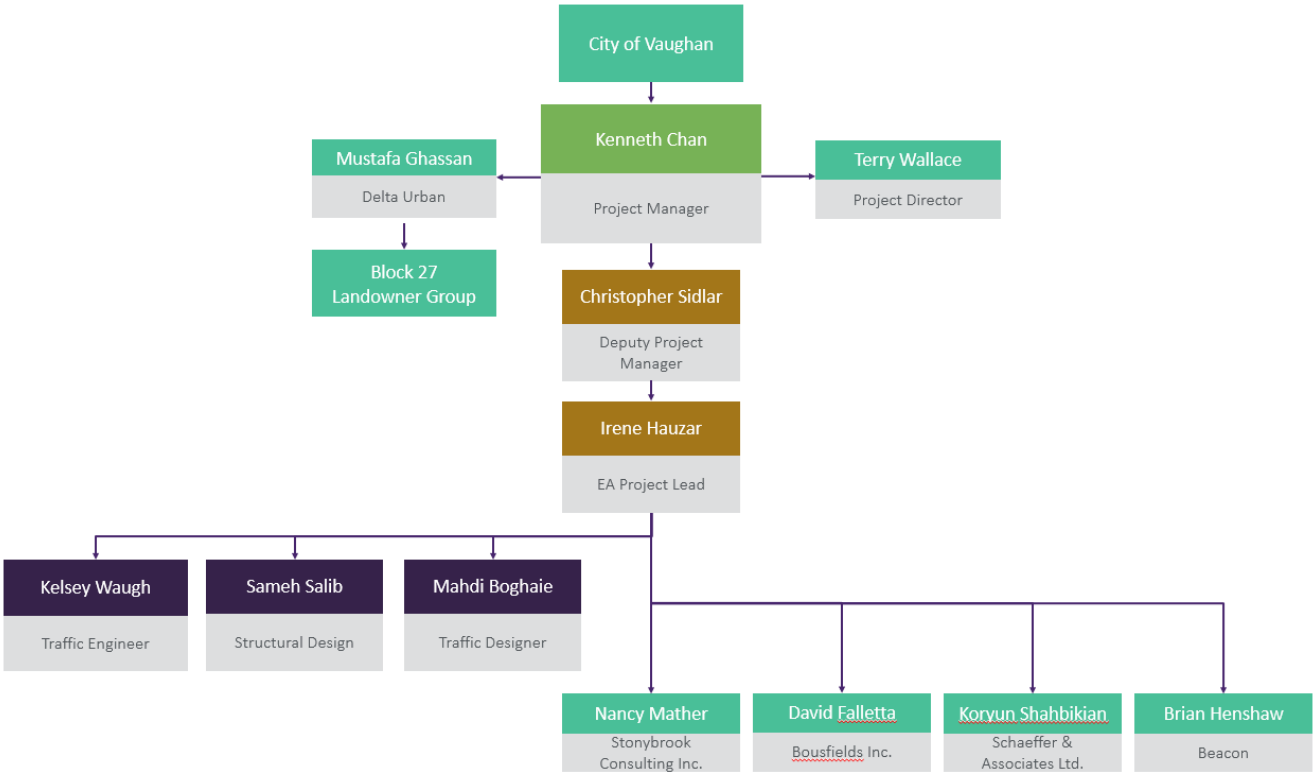
Structural Design: LEA's structural team has been providing engineering and design services in the transportation industry since 1953. We have established ourselves as leaders in the industry, both locally and overseas, by offering a broad range of structural design, rehabilitation and construction services, including: bridge design and construction, highway and rail tunnels, transit guideways and terminal design, earth and water retaining structures, structural condition assessment and predesign evaluation, rehabilitation for both bridge and underground transit facilities, and structural BIM modelling. Locally, our team has experience on a diverse range of projects including detail design of the Labelle Tunnel and Underpass at Hwy 3 South Service Road as part of the Herb Gray Parkway project.

3.2 PROPOSED PROJECT TEAM

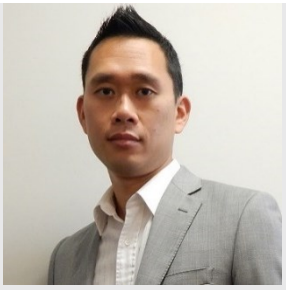
LEA has assembled a team of experts in transportation planning, engineering, environmental assessments, and design to undertake this proposed study. The below organizational chart identifies the key individuals on the project team and the proposed reporting structure, while brief descriptions of the qualifications for each individual are presented in the following sections.

In addition to LEA's wealth or experience, LEA will also call on the expertise and knowledge of multi-disciplinary leaders in the fields of natural heritage support to be provided by Beacon Environmental, hydrogeological services will be provided by RJ Burnside, civil engineering and stormwater expertise to be provided by Stonybrook and Schaeffers, and geotechnical support TBD. LEA has teamed with many of these specialists on other similar EA studies, and are comfortable working together for this assignment. Subconsultants that will be required but are not currently identified will be arranged, and retained, by the Landowners group based on scope outlined by LEA. This scope will be reviewed and agreed upon by the project team.

LEA Organizational Chart



3.3 PROJECT MANAGER – KENNETH CHAN, P.ENG., PTOE, PMP



18+ years of experience – Kenneth Chan is a Senior Transportation Engineer and Vice President of Transportation at LEA Consulting Ltd. As a managing senior associate in the firm, Kenneth has daily experience in managing and working with multi-disciplinary staff on a variety of transportation and design related projects. Kenneth is also a certified Project Management Professional (PMP) and has a proven ability to manage transportation project teams on complex, multi-disciplinary projects. Kenneth's project management approach is proactive, and he is capable of demanding high-quality deliverables while also providing staff the freedom and flexibility to excel at their work. He is a certified Professional Traffic Operations Engineer (PTOE) with the Transportation Professional Certification Board Inc., a licensed professional engineer (P.Eng.) with Professional Engineers Ontario (PEO), and a member of the Institute of Transportation Engineers (ITE).

Kenneth's project management and engineering experience includes project managing the Downtown Richmond Hill Transportation and Parking Study, and the Red Maple and High Tech Road Operations Review, leading traffic engineering efforts on the Toronto Transit Commission Eglinton Crosstown Light Rail Transit, and Toronto Transit Commission Finch West Subway Station. Kenneth also possesses significant EA experience on a range of transportation projects and overseeing roadway construction projects throughout the GTA. Kenneth's traffic engineering work includes future traffic projection, intersections operations analysis and optimization, traffic safety review, integration of active transportation modes, traffic signal warrant analysis, and coordination of traffic signal design and installation.

Kenneth has extensive experience in overseeing transportation design and has been involved with operational studies concerning transit signal phasing, traffic calming as well as construction management. Utilizing his in-depth knowledge of the planning process, environmental assessment process, design standards, construction, as well as municipal approval permit processes. Kenneth has demonstrated his outstanding leadership and management skills by collaborating with multi-disciplinary teams and providing solutions that meets his clients' needs and interests.

Kenneth has also implemented various strategies to engage constructive and effective communication with stakeholders to gain their inputs and obtain their support.

Key Related Projects:

- **Downtown Richmond Hill Transportation and Parking Master Plan**
- **Red Maple & High Tech Road Operations Review**
- **Front Street Reconfiguration EA**
- **Dufferin Bridges EA**
- **Algonquin Island Bridge MCEA**
- **Steeles Ave. E. Grade Separation Technical Advisory Services**

3.4 PROJECT DIRECTOR – TERRY WALLACE, P.ENG.

30+ years of experience – Terry Wallace is the President of LEA Consulting Ltd. Over the past 30+ years, Terry has been involved in projects requiring extensive transportation planning, traffic operations engineering, functional and detailed design for EA studies, civil and municipal engineering design, Official Plan reviews, Secondary Plans, corridor/traffic impact studies, major utility relocations and feasibility and cost: benefit studies. He has been extensively involved in the Civil design aspect of major rail and transit infrastructure projects, including conceptual design, planning and public consultation, environmental assessments, detailed design of road and transit infrastructure, utility relocations, traffic/construction management plans, traffic/transit operations analysis, pedestrian and cycling studies and travel demand forecasting.

Key Related Projects:

- **Liberty Village New Collector Road Schedule "C" MCEA**
- **Steeles Avenue East Grade Separation Schedule "C" MCEA**
- **McNicoll Avenue Extension Schedule "B" Class EA**
- **North Yonge Street Corridor EA Transit Peer Review**

3.5 DEPUTY PROJECT MANAGER AND ACTIVE TRANSPORTATION SPECIALIST – CHRISTOPHER SIDLAR, M.SC.PL., MCIP, RPP

14+ years of experience – Christopher Sidlar is an Associate and the Manager of Transportation Planning at LEA Consulting Ltd. Christopher has a wealth of experience in carrying out municipal class environmental assessments (MCEAs) and leading consultation efforts of public, community, and special interest groups. Specifically, Christopher's experience focuses on environmental assessment (EA) processes, multi- modal transportation planning and modelling, road design, and municipal engineering projects. Christopher is regularly engaged in a project management role, requiring him to coordinate multi-disciplinary teams while ensuring that project services and deliverables are completed according to pre-determined schedules and budgets.

Christopher is perceptive and thoughtful and has developed a specialized understanding of multi-modal transportation planning in urban settings, particularly within the City of Toronto. He is accomplished in developing effective policies and implementation plans and is often called upon to assess the needs of pedestrians and cyclists and promoting mode shifts to non-auto uses.

Christopher's personable approach to public engagement – built around ensuring both a relatable message and the fostering of two-way communication – has proven to be a critical element to the success of his projects. Christopher is well-versed in the MCEA requirements for public consultation and has demonstrated experience in developing public consultation plans that exceed these requirements to foster meaningful input from the public on municipal transportation and infrastructure projects.

Christopher has been extensively involved in the management of multiple EAs and transportation projects, including projects located within an urban context and at varying scales and complexities, such as the Steeles Avenue East Grade Separation EA and Algonquin Island Bridge EA. Through this

experience, Christopher has demonstrated strong communication skills and a keen ability to coordinate with multi-disciplinary teams to develop reports and design solutions that address the needs of municipalities, agencies, public and private stakeholders, and end users.

Chris brings extensive experience in urban transportation projects, MCEAs, and facilitation among a complex combination of interests of internal departments, external agencies, and stakeholder groups. He will be responsible for attending project meetings, the completion of each deliverable, and ensuring project timelines are met.

Key Related Projects:

- **Steeles Avenue East Grade Separation MCEA**
- **Brooklin North Major Roads MCEA**
- **Algonquin Island Bridge MCEA**
- **Steeles Avenue East Grade Separation Technical Advisory Services**

3.6 EA PROJECT LEAD - IRENE HAUZAR, MCIP, RPP, AICP

20+ years of experience – Irene Hauzar is a Senior Project Manager at LEA Consulting Ltd. Irene has a wealth of experience in carrying out municipal class environmental assessments (MCEAs), feasibility studies, and managing multi-disciplinary teams. Irene has been the Lead Environmental Planner for numerous environmental assessments, both in Ontario and throughout the New England states. Irene has planned for and participated in over 300 different consultation events that were held with various stakeholders. Irene has extensive experience in the consultation, evaluation, and documentation of the Municipal Class Environmental Assessments, individual environmental assessments, MTO Class Environmental Assessments, and transit project assessment process (TPAP) environmental assessments.

Irene has been involved in the management of numerous transportation EA studies. Through this experience, Irene has demonstrated strong organizational and communication skills that help to foster meaningful input from the public on various municipal transportation and infrastructure projects. Irene is well-versed in the MCEA requirements with regards to the documentation and public consultation requirements and has successfully delivered dozens of EAs at both the municipal and federal levels, in addition to completing federal EAs while working in the United States.

Irene will be the EA Lead and contact at LEA for liaison with the City of Vaughan and the Block 27 Landowners Group, Inc., along with various external agencies. She brings extensive experience in facilitation among complex combination of interests from internal departments, external agencies, and stakeholder groups. She will be responsible for attending project meetings, the completion of each deliverable, and ensuring project timelines are met.

Key Related Projects:

- **Detroit River International Crossing EA**
- **Don Mills Crossing MCEA**
- **Heart Lake Road Feasibility Study**

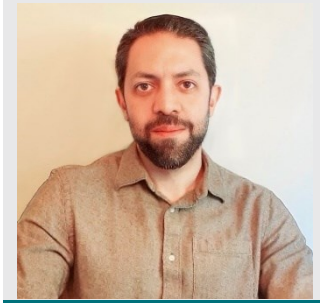
3.7 STRUCTURAL DESIGN - SAMEH SALIB, PH.D., P.ENG., BDS, P.E.

25+ years of experience – Sameh Salib is a Project Manager and Structural Engineer with over 25 years of extensive experience in the design of new transportation structures, bridges, tunnels, and subway stations, as well as the evaluation and rehabilitation of existing structures. His structural engineering experience includes the construction and design of award-winning highway bridges, and transportation structures such as tunnels and subway stations for rail, vehicles and LRT traffic. A selection of the structures he has designed include, New Burgoyne Bridge in St. Catharines, TTC's Runnymede, Sheppard, and Bay Subway Stations, Metrolinx's New Oriole Station to accommodate RER, Ottawa LRT Extension, West Toronto Diamond, Sea to Sky Project in Vancouver, Turcot Interchange in Montreal, and New Quito International Airport.

Key Related Projects:

- **New Burgoyne Bridge, St. Catharines, ON**
- **Main Street Bridge, Cambridge, ON**
- **New Burgoyne Bridge, St. Catharines, ON**
- **Main Street Bridge, Cambridge, ON**

3.8 TRAFFIC DESIGNER – MAHDI BOGHAIE



12+ years of experience – Mahdi Boghaie is a Transportation Designer at LEA Consulting Ltd. Mahdi has over 12 years of experience in transportation planning and engineering and has been involved in preliminary and functional designs, rehabilitation, and Environmental Assessment studies for local and regional municipalities. Mahdi is proficient in the use of AutoCAD Civil 3D, MicroStation V8i, and Power InRoads.

Key Related Projects:

- **Centennial Drive and Front Street Reconstruction EA, City of Orillia**
- **Mayfield Road EA, Peel Region**
- **Edward Street Extension Schedule "C" EA, Town of Whitchurch-Stouffville**
- **Leslie Street EA, York Region**

3.9 TRANSPORTATION ANALYST – KELSEY WAUGH, P.ENG., RSP1

6+ years of experience – Kelsey Waugh is a Transportation Engineer at LEA Consulting Ltd. with over 6 years of experience, and a road safety and engineering professional with experience in Master Plans and Environmental Assessments. She has gained experience in both large-scale public-sector project coordination and private sector transportation planning studies. Her duties have included the preparation of Environmental Assessment study reports, transportation demand management studies and multi-modal analysis and report writing. Her active transportation experience includes the development and evaluation of pedestrian and cycling facilities in both urban and suburban areas.

Key Related Projects:

- **Steeles Avenue East Grade Separation MCEA**
- **Brooklin North Major Roads MCEA**
- **Keele-Finch Plus Transportation Study**
- **Richmond Hill Residential Parking Permit Program**

3.10 STAFF REPLACEMENT STRATEGIES

The proposed staff members are committed to, and will be present throughout, the project. However, should any unforeseen events occur, LEA will inform the Block 27 Landowners Group Inc immediately and will propose at least two (2) replacement staff members with equivalent or greater experience and qualifications. The Proponent can then review the CV's of the staff members, meet and interview them if preferred, and choose their preferred replacement.

4 DETAILED TASKS, MILESTONES & PROJECT SCHEDULE

4.1 GUIDING PRINCIPLES

A series of key guiding principles has been developed that LEA will use to lead the Municipal Class Environmental Assessment (MCEA) process through Phases 3-4 to ensure a high level of quality control. These guiding principles are as follows:

- Provide a traceable, defensible, and quantifiable design that includes the involvement of public, stakeholder, and agency in a way that supports the development a **strong and diverse community**;
- Focus on providing designs and reports that address concerns about sensitive environments that support **a green and sustainable city**;
- Ensuring that the designs developed accommodate users of all ages and abilities for all modes of transportation facilitating residents **moving around without a car**;
- Build upon knowledge gained from previous studies in the area, updated to existing conditions, and current studies including the Kirby Street Widening EA; and
- Submit a preliminary design that is in compliance with the Region's and City's Design Criteria and Standards for Design Submissions and exhibits the highest degree of **design excellence**.

4.2 PUBLIC, STAKEHOLDER AND INDIGENOUS COMMUNITIES CONSULTATION

The public consultation process for this study will be undertaken by LEA, in coordination with the City of Vaughan and the Block 27 Landowners Group Inc. While Public Communications and Stakeholder Engagement Plans will be developed at the outset of the project, the below section summarizes the key components for the overall Consultation Plan.

Stakeholder Engagement Extensive public and stakeholder consultation efforts have been undertaken during the Block 27 Secondary Plan process. A Technical Advisory Committee (TAC) was created that comprised of members of the public sector, provincial and regional governments, technical agencies and authorities, and utilities participated in the Secondary Plan process. In addition, Landowners and Landowners' Representatives participated in the Block 27 public consultation process. Broader public consultation has also occurred through a general consultation program for surrounding communities, including ratepayer groups, and non-governmental groups. Through this study, the stakeholders that previously participated in past will be included as part of the consultation effort for this study. In addition, new public and private stakeholders will be invited to participate. LEA has significant experience developing consultation plans and engaging multiple stakeholders and will ensure that all voices are heard and participate in a meaningful manner. In addition to issue specific consultation with the stakeholders, LEA is proposing three (3) stakeholder meetings and four (4) Technical Advisory Committee meetings to occur at strategic decision points throughout the study.

Key participants in the consultation process will include, but are not limited to:

- City Council
- Relevant Provincial Agencies, including the Ministry of Environment, Conservation, and Parks, and Ministry of Natural Resources and Forestry
- The Block 27 Technical Advisory Committee (TAC)
- The Block 27 Participating Landowners Group (LOG)
- Residents/landowners in the surrounding communities, and those who registered for communications as part of the NVNCTMP, Block 27 and/or Kirby Road EA
- Metrolinx
- Utilities
- TransCanada Pipeline
- York Region District School Board
- York Catholic District School Board
- Conseil scolaire catholique Mon Avenir

Study Webpage – LEA will ensure that all necessary information is provided in Word and PDF formats to be uploaded to the project website maintained on the City's website. The materials will be accessible as per the City's standards. LEA has experience in preparing public consultation materials that meet WCAG 2.0 Compliance, including the Steeles Avenue East Bridge EA and the Scarborough Centre Transportation Master Plan.

Project Team Meetings (7) – LEA expects at least 7 Project Team meetings, along with 36 bi-weekly Skype/MS Teams/phone meetings over the duration of the study

Technical Review Coordination – LEA will submit all submissions to both the City of Vaughan and the Block 27 Landowners Group Inc, and provide review periods of at least 2 weeks. Additional review agencies and stakeholders will be involved when required, including Technical Advisory Group members. Communications and any comments received will be logged to maintain records.

Indigenous Communities Engagement – LEA will work alongside the City of Vaughan and the Block 27 Landowners Group Inc, to ensure that Indigenous Communities consultation will be appropriately conducted, through a meaningful role in the consultation process. The study team will work with the city of Vaughan staff to coordinate the Indigenous Communities Engagement. The city is in the process of developing an Indigenous Communities Engagement protocol, and the study team will work with the city in implementing the protocol once it has been approved. The project team will notify MECP about this project, and will engage with the list of Indigenous Communities that MECP provides.

4.3 WORK PLAN AND DELIVERABLES

To support the development of Block 27, LEA has developed the below work plan to develop and select preferred alternative designs for the required street network. The proposed work plan is discussed below and includes all requirements of the MCEA process, plus the preliminary preferred design of the preferred design alternative solution, including:

- Review of the existing conditions studies and satisfying any gaps in knowledge identified;
- Identification and assessment of alternative design concepts;
- Selection of the preferred design alternative ;
- Engagement of the public;
- Final documentation (ESR); and
- Development of the preliminary preferred designs and preliminary capital and life cycle cost estimates.

In describing the proposed work plan, it should be noted that the MCEA process has recently been subject to major amendments, however the full replacement of the MCEA will take some time. Considering the uncertainty of the timing of these changes, the roadways are being proposed to proceed under the current Schedule C EA process. Should the process change during the course of the EA, the potential to change schedule will be considered at that time.

The EA process will determine the horizontal and vertical alignment of the road including, watercourse and natural heritage network crossing infrastructure, active transportation infrastructure and consider spacing between intersections, connections with adjacent blocks and minimizing impacts to natural features. The EA process as part of the identification of reasonable range of alternatives and will also include comprehensive evaluation of the natural heritage features.

4.3.1 Task #1: Study Design

Upon initiation of the project key members of the project team will attend a virtual kick-off meeting with City of Vaughan Staff and members of the Block 27 Landowners Group Inc, (Block 27 LOG). Prior to the project kick-off meeting, LEA will obtain the stakeholder list from the City of Vaughan (previously utilized by the City of Vaughan for the Block 27 Secondary Plan and NVNCTMP). LEA will prepare a Consultation Plan and detailed workplan to confirm the project deliverables, which concludes with one ESR prepared for the entire study, including an updated project schedule. These can be discussed at the project team meeting and will be finalized subject to comments from the project team and the co-proponents.

Consultation Plan

During the initial stage of the project, on of the key deliverables will be the project's Consultation Plan. This plan will be continually reviewed and updated throughout the project but is intended to guide how and when the stakeholder groups and the general public are engaged.

The Consultation Plan is proposed to include at least 3 points of public contact as specified in the Municipal Class Environmental Assessment Process, specifically with:

- First mandatory public contact being issued after introducing the project (Notice of Commencement).
- Second mandatory public contact being the notice for the Public Information Centre. As noted previously due to the ongoing COVID-19 situation, LEA anticipates delivering a virtual PIC that will satisfy the Municipal Class EA requirements. Virtual PIC can be customized to include a presentation and a facilitated question and answer session. One potential virtual online engagement platform that the City of Vaughan may engage with is Bang the Table. This online engagement platform may be part of the consultation process for this study. The virtual PIC will give members of the public the opportunity to learn more about the alternatives under consideration. PIC #1 will primarily focus on the Identification of Project and Alignments, evaluation of alternatives, and preliminary preferred alternative.
- Third mandatory public contact being the completion of the Environmental Study Report (ESR), when the document is placed on public record by publishing the Notice of Completion of the Environmental Study Report While the minimum requirement is 30 days, given the ESR will be made available in digital format only, LEA would propose to extend this period to provide for a more thorough review in account of the COVID disruptions. During this time, the public and other stakeholders will be invited to review the ESR and provide their comments.

In addition to the mandatory public contact, LEA will develop content to be made available on the City's website. This is expected to include background materials, stakeholder communications, and regular general project updates. The Consultation Plan will also identify when meetings with of the Technical Advisory Committee (TAC) (comprised of technical experts from various City departments in the City of Vaughan, and various external agencies, as agreed to by City Staff) should be scheduled. To document the outcomes of the consultation activities, LEA will collect all comments made by the public, stakeholders, and agencies regarding the study and will prepare responses to all key issues and comments made. The consultation components of this study will be documented into a consultation record and will become part of the Environmental Study Report (ESR) at the conclusion of the study.

**COVID-19 Considerations: As previously noted with communities continuing to practice social distancing, project related meetings, team meetings, stakeholder meetings, TAC meetings, etc. may be hosted using online meeting software (e.g. Microsoft Teams, Zoom, WebEx). Our team would schedule, facilitate, and provide notetaking during these sessions.*

Indigenous Communities Engagement Plan

Also critical at the outset of the project is the development of a list of Indigenous Communities that will be engaged as part of the study. This list will be verified through correspondence with MECP and City of Vaughan staff. Aside from the list, the Indigenous Communities Engagement Plan will include details of how and when the communities will be contacted. This is expected to include a variety of forms of contact including but not limited to email communications, phone calls, register mailings, and meetings.

Project Team Meeting #1: Study Kick-off

Project Team Meeting #1 will focus on the goals and objectives of the project, refine the project scope and proposed schedule, develop a key stakeholder list and obtain all relevant background data that pertains to the study. The meeting is expected to discuss the immediate next steps, and to confirm or discuss project management, public consultation plan and risk management and mediation strategies moving forward.

Deliverables:

- Study Design (with updated schedule)
- Consultation Plan
- Indigenous Communities Engagement Plan

4.3.2 Task #2: Background and Phase 1 and 2 (NVNCTMP) Review

The success of the EA Study will be contingent on the completion of various site investigations and field reviews to understand the study area conditions and potential impacts of the alternatives. It is known that several background reports have been prepared within the study area, either by the City's or the Block 27 Landowner Group Inc consultants. The project team will conduct comprehensive reviews of these studies and identify if there are any gaps in the knowledge of existing conditions. The following studies will be reviewed, summarized as part of Technical Memo #1, and included in the Final ESR as documentation (as required, some will be updated through the study process).

North Vaughan and New Communities TMP (NVNCTMP) – provides a long- range plan that supports policies, programs and infrastructure required to meet existing and future mobility needs for transportation decisions within North Vaughan, including conducting a review of the roadway functions and jurisdictional transfer opportunities for the Block 27 Secondary Plan area. The NVNCTMP establishes the need and justification for proposed collector roads, as well as the framework for the street network. With respect to the content of the NVNCTMP, LEA will review the following:

Phase 1 (Problem or Opportunity) – the Problem and Opportunity Statement will be reviewed and confirmed to ensure that it satisfies the MCEA requirements and continues to be applicable to the Schedule C projects being reviewed. If modifications are required to better relate to the proposed undertaking, these will be clearly documented and justified.

Phase 2 (Alternative Solutions) Review – LEA will review the NVNCTMP Appendix A: Block 27 Transportation Network, including the evaluation of the Block 27 street network to ensure that it satisfies the MCEA requirements by completing the following:

- Review the evaluation process and criteria (transportation, natural environment, socio- economic, and cost and implementation)
- Review all background studies and supporting study documentation
- Conduct a high-level summary of site investigations, reviews and reports completed as part of the NVNCTMP and identify any missing investigations or investigations

that will need to be updated.

Stage 2 Archaeological Assessment (AA) – The Archaeological Assessment must meet the standards as per the Ministry of Heritage, Sport, Tourism and Culture Industries and Guidelines for Consulting Archaeologists. Stage 1 Archaeological Assessment was prepared as part of the background documentation for the Block 27 Secondary Plan. As documented within the Secondary Plan, Block 27 has the potential for the presence of significant pre-contact or Euro-Canadian archaeological resources. Any further developments, beyond those areas that have already been assessed and cleared of any further archaeological concern, will be proceeded by a Stage 2 archaeological assessment. To inform the development of the alternative designs, LEA will work with the City of Vaughan to arrange for an archaeological consultant, to review the areas subject to a Stage 2 AA and identify any further studies that may be required to identify potential impact. In addition, the City of Vaughan will help facilitate the coordination with Indigenous Groups to participate in fieldwork. This study will be coordinated with the Master Environmental and Servicing Plan (MESP) archaeological investigations.

Natural Heritage Investigation – The natural heritage investigations completed as part of the NVNCTMP are intended to be updated by the Block 27 Landowners Group Inc as part of the Master Environmental and Servicing Plan. This will include updated field surveys, including identifications of ecological communities (flora, fauna, and wildlife) and updates to the regulatory area.

Subsurface Utility Engineering Assessments – The Study Area is crossed by a major utility corridor, the east- west TransCanada Pipeline. LEA foresees the need to expand on the utility corridor work done as part of the NVNCTMP, to at least the completion of a Subsurface Utility Engineering Quality Level C, which involves contacting utility providers, and consolidating all utility information into a single drawing for reference during the design phase of this EA study.

Multi-modal Transportation Study – LEA will review the NVNCTMP and the existing conditions traffic study prepared as part of the Block Plan report. This will form the basis of the Transportation Report for the EA and will be expanded to incorporate newly developed traffic forecasts. The traffic modelling will be undertaken using the NVNCTMP EMME model, and updated to reflect the current Block Plan development. The future constraints will be used to identify and confirm the multi-modal needs and justifications for the collector roads under study. A detailed scope of work for the multi-modal transportation study has been provided in the Block Plan Terms of Reference.

Air Quality Impact Assessment – LEA will consider the existing available air quality reports prepared as part of previous assessments. Given that the development of the Study Area will significantly alter existing uses, increasing negative impacts on local air quality, it is likely additional, detailed work will be needed to support the collector roads that comprise this EA. This will involve conducting an Air Quality Assessment for the study area to assess the potential for air quality impacts on sensitive land uses such as residences due to changes in vehicular traffic volumes. Should additional assessments be required, LEA will advise the Proponents to retain a qualified air quality consultant at that time.

Socio-Economic Environment Review – The Socio-Economic review will consider the existing social, economic, and policy review of the area to inform the project of any areas of potential impact. This will form the basis for the evaluation of the alternatives and impacts to the socio-economic status of the study area.

Noise Impact Assessment – A Noise and Vibration Background Study was completed as part of the Block 27 Secondary Plan. LEA will review its contents, and ensure that it adheres to the latest Ministry of the Environment, Conservation and Parks (MECP) requirements, as well as all appropriate and applicable noise policies. The noise assessment will include a qualitative review to assist the project team in identifying the preferred design from a noise perspective. In addition, the Noise and Vibration Study that will be conducted for the MESP will be reviewed to ensure that there is consistency in the approach undertaken to determine noise impacts and mitigation measures.

Drainage and Stormwater Management Assessment – LEA will oversee the development of a draft Stormwater Management Memorandum in coordination with the design team, including hydrological, hydrogeological and geotechnical specialists. Stormwater Management will be further coordinated with the work conduced as part of the MESP, including ensuring that the road crossing designs are consistent between the two studies. Reference will be made to the TRCA's Valley & Stream Corridor Crossing Guide for crossing designs. All applicable design criteria set forth by the City of Vaughan, Region of York, and the Toronto and Region Conservation Authority will be adhered to.

Geotechnical Investigation – LEA will consider all existing available geotechnical and hydrogeological investigation reports prepared by the Block 27 Landowner Group, Inc., including the Geotechnical Assessment prepared as part of the MESP. This will involve identifying geotechnical considerations applicable to the roadway design,i there is any additional work needed for the EA Study, LEA will advise the Proponent to retain a geotechnical consultant at the onset of the study.

Cultural/Built Heritage Assessment – A preliminary cultural heritage resource assessment was undertaken as part of the Secondary Plan Study process, which identified a number of cultural heritage resources and landscapes that warrant the potential for conservation. Additional cultural heritage studies were recommended as part of the Block Plan study and will be coordinated was part of this EA and also with the MESP as part of this study.

Source Water Protection – It is understood that Class EAs are subject to a Source Water Protection review as they may have potential to impact sources of drinking water in vulnerable areas. As a result, this review will include an identification of the source protection area, proximity to the sources of drinking water, and any vulnerable areas. If there are activities that pose a risk to the source water protection area, then the appropriate Source Protection Authority will be contacted.

Project Team Meeting #2: Existing Conditions and Background Review

Project Team Meeting #2 will review the findings of the existing conditions reports and background review. Through this exercise any modifications necessary to the conclusions of the NVNCTMP will be identified and discussed.

Deliverables:

- Technical Memo #1: Existing Conditions and Background Review
- Stage 2 Archaeological Assessment (as required)
- Natural Heritage Investigation
- Subsurface Utility Engineering Assessment
- Existing and Future Background Multi-modal Transportation Study
- Air Quality Impact Assessment
- Socio-Economic Assessment
- Source Water Protection review;
- Noise Impact Assessment
- Existing Drainage and Stormwater Assessment
- Geotechnical Investigation
- Cultural/Built Heritage Assessment

4.3.3 Task #3: Development of Alternative Design Concepts

Following the review of Phases 1 and 2, screening criteria will be developed based on the alternative impacts with respect to the natural environment, design perspectives (e.g. cyclist/pedestrian, motorist, overall neighbourhood), technical (e.g. feasibility of space, accessibility for maintenance and operation, construction requirements), and economic considerations (e.g. high-level capital and lifecycle cost). As required by Phase 3 of the MCEA process, a detailed inventory of natural, socio-economic and environmental factors will be conducted, in addition to identifying the impact of alternative designs on the environment and identifying mitigation measures. As previously discussed, alternative design concepts for the following major collector and collector roadways within Block 27 will be considered:

- Street 1 (E-W Collector) - between Jane Street and Street 6
- Street 2 (E-W Major Collector) - between Jane Street and Keele Street (incl. grade separation with Barrie rail corridor)
- Street 3 (E-W Collector) - between Jane Street and Street 7
- Street 4 (N-S Collector) - between Kirby Road and Street 3
- Street 5 (N-S Major Collector) - between Kirby Road and Teston Road
- Street 6 (N-S Collector) - between Kirby Road and Teston Road
- Street 7 (N-S Collector) - between Street 6 and Teston Road
- Street 8 (N-S Major Collector) - between Vista Gate and Keele Street

While the north project limit for Street 8 is Vista Gate as, the alignment and preliminary preferred design will protect and not preclude a future extension north to intersect with Kirby Road and inherently opportunity for access, connectivity and mobility to the Transit Hub and Kirby GO Station.

As part of the work to be completed for Task 3, and where required, additional field data will be collected, which includes the following:

- Documentation of the natural heritage, hydrological features and open space features necessary to identify the impact of the proposed alignments. This includes the delineation of the natural heritage and hydrological features and establish Natural Heritage System (i.e., delineation of physical and stable top-of- bank areas regulated by Toronto and Region Conservation Authority

(TRCA) and/or limits of elements of the Natural Heritage Network). Finally, evaluate the impacts the roadway development on the Natural Heritage Network and identify mitigation measures where appropriate.

- Conduct a Cultural Heritage review, including cultural heritage landscapes within the study area. If any existing or potential Cultural Heritage Landscapes within the study area exist, a Cultural Heritage Impact Assessment will be completed, including mitigation options, should any of the cultural heritage features be impacted by the proposed roadways. Any proposed works as part of this study will require Cultural Heritage review and applications, as per Section 42 of the *Ontario Heritage Act.* The Cultural Heritage Assessment report will recommend an appropriate intervention approach to the heritage resources as per policy 6.3.3.2 of the VOP 2010.
- Conduct a grading assessment (to ensure grading will not adversely affect adjacent land uses) to ensure proper drainage. Grading plan will illustrate proposed storm water run-off, surface drainage patterns and sub-surface storm water servicing requirements.

The EA will propose crossing designs at the rail corridor, waterbodies, drainage features (streams) and the TransCanada pipeline corridor. Opportunities where crossings may be co-located with other infrastructure structures, including active transportation linkages or utility crossings, will be explored and the requirements incorporated into the proposed design concepts.

In developing the alignment and design alternatives for the collector road network, LEA will consider the planned land use context (ie. Parks, schools locations, etc), including the location of park blocks consistent with the provisions of the Block 27 Secondary Plan, including the provision of appropriate frontage, servicing, access, parking, and programming elements to the satisfaction of the Park and Forestry Operations.

This task will also include the preparation of screening criteria to assess connections between the physically separated in-boulevard cycling/pedestrian infrastructure and the adjacent open space multi-use recreational trail system as identified in the NVNCTMP, Vaughan Super Trail concept, the 2020 Pedestrian and Cycling Master Plan, and the provisions of the Block 27 Secondary Plan.

Pedestrian and cycling options will be included in all scenarios of the road cross-sections. Proposed cycling infrastructure will incorporate design measures geared to improving the safety of all road users, provide connectivity and appropriate and convenient crossings to the local multiuse recreational trail network, and will work in concert with the complimentary Community Design Guidelines and Landscape Master Plan documents for the Block 27 Planning area. Proposed pedestrian and cycling infrastructure designs will account for Vaughan's all ages and abilities framework, which requires physically separated infrastructure to be included on all collector and arterial roadways.

LEA will develop alternative designs to establish potential physical and operational impacts, and develop suitable mitigation measures, including the preparation of a comprehensive cost estimate.

The alternative design development will be structured to address (at a minimum):

- Alignment (including horizontal and vertical alignment)
- Right-of-way
- Cross-sections (mid-block and intersection)
- Intersection designs

- Property impact
- Utility impact
- Soil management impact
- Traffic impact
- Grade Separation Design for the proposed Barrie corridor rail crossing (e.g. foundation type, substructure type, girder size, deck size, retaining wall requirement)
- Pedestrian and cyclist infrastructure for all ages and abilities
- Transit infrastructure (as applicable)

A plan and profile for the preliminary preferred design for all 8 road projects that sets the horizontal, vertical alignment and cross section for the establishment of collector road right-of-way. Please note that the general locations of the roadways in the NVNCTMP will be followed, however the team will determine through this MCEA study what the final alignment and preliminary preferred design will be for all roads examined in this study.

Project Team Meeting #3: Design Development and Evaluation

Project Team Meeting #3 will review the development of the alternative designs for each roadway under consideration and proposed evaluation criteria. The evaluation criteria and methodology to be used in the evaluation will then be circulated to the TAC for input and comment.

TAC Meeting #1- Design Development and Evaluation

The initial TAC meeting will, summarize the design development and review the evaluation procedure of the alternative designs. The goal of the initial TAC meeting is to obtain input from members regarding the following:

- Existing conditions review
- Problem/Opportunity Statement Review
- Proposed Evaluation Criteria
- Other information or considerations

Stakeholder Meeting #1

Stakeholder Meeting #1 will provide a summary of the development of the alternative designs. In addition, stakeholders will be informed of the evaluation process and the development of evaluation criteria. The goal of this stakeholder meeting is to obtain input pertaining to the development of the alternative designs, the evaluation criteria proposed, and any other information that would be useful to the team as they proceed with the design of alternative alignments. Given that the duration of COVID-19 restrictions remains unknown, LEA will ensure there is a contingency plan in place to conduct relevant public and stakeholder meetings virtually. This will include conducting meetings through applications such as Skype, MS Project, WebEx or another agreed upon software package.

4.3.4 Task #4: Evaluation of Alternative Designs

Based on the evaluation criteria confirmed by the TAC and Stakeholders, LEA will undertake a detailed evaluation and assessment of each alternative design. That being said, the evaluation criteria is expected to include:

- Transportation
    - Connectivity, Mobility and Accessibility for all modes
    - Active Transportation
    - Transit
- Natural Environment
    - Natural Areas
    - Environmentally Significant Areas
    - Habitat Areas
    - Surface Water and Groundwater
- Socio-Economic Environment
    - Cultural and Archaeological Resources
    - Support for Employment Areas
    - Active and Healthy Community
- Implementation
    - Capital Costs
    - Maintenance/Operational Costs

The evaluation criteria suggested above contains similar criteria from that developed in the NVNCTMP evaluation. The detailed review of alternative design concepts will be summarized in an evaluation matrix for inclusion in the project documentation. The evaluation matrix will include a comparative assessment of each of the alternative design concepts, as well as identifying the magnitude of each alternative's impact.

Deliverables:

- Evaluation Matrix for the Alternative Designs

4.3.5 Task #5: Identification and Assessment of the Preferred Alternative Design

Following the evaluation of alternative design concepts, the preferred alternative design concepts will be identified for each of the streets and all crossings (under consideration to ensure that negative environmental impacts are minimized. The Preliminary Preferred Design will be refined through the development of potential mitigation measures to address impacts identified in Task #3, including property requirements, utilities, stormwater management facilities, rail operations, and the overall existing conditions.

LEA will also consider any environmental factors that have been identified and will refine the Preliminary Preferred Design to ensure that negative environmental impacts are minimized where unavoidable. An impact study will be developed to identify impacts to environmental factors and mitigation measures that can be implemented throughout the projects' phases, including detailed design, construction and operation. The final report will include an itemized list of identified impacts, which will be categorized in to short-term and long-term horizons corresponding with their respective mitigation measures.

As part of the preferred alternative design evaluation, LEA will circulate a plan and profile of the preliminary preferred alternative to utility agencies (e.g. TransCanada, Bell, Hydro, etc) for detailed mark-up and coordination. LEA will obtain plan, cross-section and profile drawings for the identified above and below grade utility plants. The preferred alternative will be developed to a 30% preliminary design level, in accordance with the City's standards for 30% design submissions, for the bridge structures, while the streets will be prepared to a 10% level of design. Following the completion of the EA process the 30% detailed design process will be initiated and circulated to the City for review.

LEA will oversee the design engineer for Block 27 in preparing plan, profile, and cross-section drawings showing details on property and grading impacts, intersection controls, mid-block and intersection cross-sections, utility relocations, pavement marking, access modifications and proposed structures associated with the preferred design. The design will incorporate proposed urban design/landscape, road drainage and stormwater features into the drawings. The evaluation will identify affected properties and LEA will coordinate with the City to contact individual property owners about property impacts associated with the preferred design.

Technical Memo #2: Preferred Alternative Design

Technical Memo #2 will summarize the alternative designs proposed, describe the selection of criteria developed, evaluation of the alternative designs, and selection of the preliminary preferred design. A summary of the findings of Stakeholder Meeting #1 will be included. A description of the methodology used to evaluate the alternative designs proposed will also be included.

Project Team Meeting #4: Alternative Designs and Mitigation

Project Team Meeting #4 will include a review of the selection of the preferred alternative design and potential requirements for mitigation.

TAC Meeting #2- Design Development and Evaluation

TAC Meeting #2 will include a review of the evaluation of alternatives, and the selection of the preferred alternative design.

Stakeholder Meeting #2

Stakeholder Meeting #2 will focus will include a review of the evaluation of alternatives, and the selection of the preferred alternative design. Feedback gathered will be incorporated into any refinements to the preferred alternative design.

Deliverables:

- Technical Memo #2: Preferred Alternative Design
- Multi-modal Transportation and Traffic Analysis Report;
- Safety Assessment Report;
- Stormwater Management Report (including sub-watershed modelling);
- Geotechnical Report;
- Hydrogeological Report, including Surface and Hydrogeological Environment Mapping (watercourses, valleys, and wetlands);
- Environmental Impact Study Report (Natural Environment Report);

  - Surface and Hydrogeological Environment Mapping (watercourses, valleys, wetlands)
  - Aquatic Environment Conditions;
  - Terrestrial Environment Conditions
- Fluvial Geomorphological Report;
- Arborist Report (if required);
- Air Quality Impact Assessment;
- Indigenous Engagement Plan;
- Stage 2 Archaeological Assessment;
- Socio-Economic Environment Assessment Report
- Subsurface Utility Investigation-Level C;
- Proposed Watermain System Requirements
- Preliminary Preferred Design Package (10% Detailed Design);
  - Design Brief(s);
  - Plan and Profile Drawings (including street lighting design, grading, etc.);
  - Drainage Plans;
  - Utility Conflicts and Relocation Plan;
  - General Arrangement Drawings for Structures;
  - Property Report and Plans;
  - Construction Cost Estimate;
  - Life Cycle Strategy.
- Consultation Plan and Report
- Project Management and Quality Control (QC)

4.3.6 Task #6: Implementation and Construction Phasing Plan

LEA will assess the time required to design, construct, and recommend infrastructure (including property acquisition), relocate utilities, and conduct any site remediation deemed necessary. The construction phasing plan will also illustrate traffic detour plans for road and rail traffic, maintaining acceptable levels during each stage of construction, as required. Phasing of construction will consider traffic improvements, including current or planned capital works in the study area undertaken by the City of Vaughan, York Region, Metrolinx, or other governments or third parties. Traffic performance will be assessed during the implementation of the infrastructure elements to ensure that all transportation modes are maintained. LEA will design and propose construction techniques for both temporary and permanent relocation/modification of interfering private utilities and public services. The staging for the construction of the rail crossing will be determined in consultation with Metrolinx. The design for all affected City of Vaughan/York Region infrastructure (e.g. watermain servicing, sanitary servicing, and storm water conveyance) will be part of the construction phasing plan. The Implementation and Construction Phasing Plan will include a preliminary streetscape plan including conceptual renderings.

It should be noted that the Block Plan study is not expected to be finalized until the completion of Collector Roads EA. Construction phasing of the collector roads may be further refined during the Block Plan process to reflect development phasing and the anticipated full buildout of the study area.

Project Team Meeting #5: Construction Staging

Project Team Meeting #5 will include a review of the construction staging alternatives and estimated construction costs, with the outcome including the selection of a preferred construction staging plan.

4.3.7 Task #7: Public Information Centre (PIC) #1

A Public Information Centre (PIC) will be held at the conclusion of Phase 3 to solicit feedback on the Preliminary Preferred Design. LEA will prepare draft notices, related handout materials, and PIC displays for review by the City, along with related web site content for the PIC #1. The notice for the PIC #1 may be submitted at the same time as the Notice of Commencement (to be determined by study team at time of first Project Team meeting). Input received from Project Team Meeting #6 and TAC Meeting #3 will be used to refine the PIC presentation materials as required.

Project Team Meeting #6: PIC #1

Project Team Meeting #6 will involve reviewing and finalizing PIC #1 materials including incorporation of comments on the PIC #1 displays and any social media advertisement.

TAC Meeting #3 - PIC #1

The goal of TAC Meeting #3 will be to present the presentation and displays that will be used at the public information centre. Preliminary feedback will be received, and any final changes made prior to the PIC.

Public Information Centre #1

PIC #1 will be a virtual public meeting with presentation, combined with web-accessed panels posted via the City's website. The content of the PIC display panels will include an explanation of the development of the alternative design concepts, the evaluation matrix, and the preferred design. Any potential impacts associated with each of the alternatives will be identified, along with the proposed mitigation measures. The virtual PIC panels will also present the initial construction phasing plan for the preferred alternative design.

Project team members from both LEA and the City will be available following the presentation for an online Question and Answer period, should any members of the public wish to ask questions or make comments at that time. Any questions that were not addressed during the session will be included as part of the Consultation Record, and answers presented on the City's website.

Deliverables:

- Notice of Commencement and Public Information Centre
- Public Meeting Materials (Displays and Presentation)
- Public Consultation Summary

4.3.8 Task #8: Functional Design Report

The Functional Design Report summarizes the development and evaluation of the alternative design concepts and describes the Preliminary Preferred Design (at 10% design) for all roadway segments under evaluation. The report will document the property, building, and utility impacts associated with the preferred design and include the identification of the alignments and municipal right-of-way property requirements including at crossing structures, overlayed on parcel fabric. It should be noted that all drawings will include a qualifying note indicating the findings are subject to detailed design and engineering. It will also document the proposed construction staging requirements. The report will be included as a subcomponent of the draft ESR discussed in Task #9. Following the circulation to the TAC and Affected Agencies, the Functional Design Report will be made available for all landowners to review and comment.

Project Team Meeting #7: Functional Design

Project Team Meeting #7 will include reviewing all the components of the functional design, to ensure all aspects of it are covered.

TAC Meeting #4- Summary and Functional Design

TAC Meeting #4 will include a discussion and summary of all the comments received at PIC #1. In addition, a review of the functional design will be discussed for TAC members comment.

Stakeholder Meeting #3: Affected Agencies

Stakeholder Meeting #3 will include agency stakeholders that represent major utilities such as pipeline, hydro, water and communications, in addition to Metrolinx. The affected agencies will receive a summary of the preliminary construction phasing plan at the meeting and will be provided with a summary of the proposed functional design and potential impacts.

Deliverables:

- Functional Design Report

4.3.9 Task #9: Draft Environmental Study Report

To complete Phase 4 of the MCEA process, LEA will prepare an Environmental Study Report (ESR) documenting all components of the study, including background and existing conditions reviews, a description of the alternative solutions developed and evaluated as part of the Phases 1 and 2 stages of the MCEA, and the evaluation of alternative design concepts during Phase 3 of the MCEA process. The ESR will also include a detailed cost estimate of the preferred design solution along with capital and lifecycle cost analysis. The ESR will also contain the Consultation Record, which includes copies of all notices and summaries of all interactions with the public. Finally, the ESR will identify an implementation and mitigation plan including identifying required permits and approvals, and present all collected technical data and analysis results. A single ESR report will be prepared for all Schedule C collector street projects within Block 27.

The draft ESR Table of Contents will be circulated to the Project Team and TAC prior to ESR documentation to ensure it covers all aspects of the study. A draft ESR will be circulated to the Project Team, TAC and Stakeholders for review.

Deliverables:

- One (1) Draft Environmental Study Report

4.3.10 Task #10: Final Environmental Study Report

Based on the comments received from Project Team and TAC, comments will be incorporated into the ESR documentation. The final ESR will then be circulated to the Project Team for final review. Once the ESR is final, LEA will assist City Staff to develop a staff report and presentation detailing the recommendations of the EA to be made to Council. LEA staff will be available to either make the presentation to Council or answer any questions from the Council or public at that time. Following the Council meeting and receipt of a positive direction from Council, the final ESR will be made available for public review in accordance with the MCEA process. It should be noted that due to releasing the ESR online, it would be recommended that the review period be increased from the typical 30 days to a review period of 60 days.

Deliverables:

- One (1) Final Environmental Study Report
- One (1) Presentation to Council

4.3.11 Task #11: Part II Orders

During the public review period, LEA will review any comments provided by interested parties and facilitate the discussions between the interested parties and the project team. Should through this process a reasonable solution not be achievable, and the interested party issue a Part II Order, LEA will prepare all required responses to the MCEP. This includes the preparation for and attendance at any meetings requested by the MCEP.

Deliverables:

- Responses to Part II Orders, as required

4.3.12 Task #12: 30% Design

Following the completion of the EA and acknowledgement from the Ministry that there are no Part II orders the Landowners group will initiate the 30% design for the streets subject to this EA. This design will be based on the 10% preliminary design drawings for the streets and 30% detailed design drawings for the structures

prepared as part of the EA. The 30% design drawings will be prepared in accordance with the City of Vaughan's Engineering Design Criteria and Standard Drawings.

The 30% detailed design drawings will be submitted to the City for review and approval prior to proceeding to further levels of design.

Deliverables:

- 30% Detailed Design Drawings

5 PROJECT REFERENCES

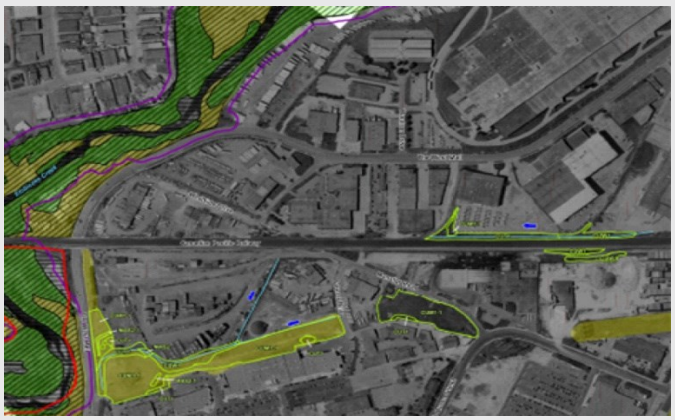
LEA Reference #1 - Steeles Avenue Grade Separation at Stouffville GO Transit EA Study			
CLIENT	City of Toronto/ Metrolinx/York Region	**NUMBER OF YEARS WORKING TOGETHER**	Over 20 years
LOCATION	Toronto and Markham	**DURATION OF INVOLVEMENT**	2015-2017

Project Summary: LEA was retained as the lead consultant to conduct a Municipal Class Environmental Assessment to investigate the grade separation of Steeles Avenue East at the Stouffville GO Rail Corridor. Following the evaluation of alternatives, a 6-lane underpass option was identified as the preferred solution as it was determined to provide the greatest benefit in terms of traffic and transit operations. Preliminary design for the selected alternative was conducted by LEA, which incorporated pedestrian bridges and elevator/stair enclosures to enhance accessibility at all four quadrants of the rail corridor and Steeles Avenue East. Throughout the project, the public was consulted with on numerous occasions to identify key considerations relating to the relationship of the grade separation to the surrounding land uses. The project was initiated in September 2015 and was completed in March 2017.

Relevant Services Provided: Project Management, Environmental Assessment, Site Investigation, Transportation Planning, Structural Design, Municipal Servicing, Preliminary Design, Public Consultation

PROJECT CONTACT	**ANSON YUEN,** Project Manager Anson.yuen@toronto.ca, 416-338-0667
ADDRESS	CITY HALL, 100 QUEEN STREET WEST, TORONTO, ON, M5H 2N2
CLIENT'S URL ADDRESS	WWW.TORONTO.CA/COMMUNITY-PEOPLE/GET-INVOLVED/PUBLIC-CONSULTATIONS/INFRASTRUCTURE-PROJECTS/STEELES-AVENUE-EAST-BRIDGE-ENVIRONMENTAL-ASSESSMENT/

LEA Reference #2 - North Queen Street Extension MCEA			
CLIENT	City of Toronto	**NUMBER OF YEARS WORKING TOGETHER**	Over 20 years
LOCATION	Toronto	**DURATION OF INVOLVEMENT**	2009 – 2014



Project Summary: LEA was retained to undertake a MCEA for the planned extensions of North Queen Street to The West Mall and The Queensway. The problem addressed in this study was the lack of continuous east/west or north/south public roads west of North Queen Street. This situation was further challenged by the intersection of multiple hydro transmission lines intersecting within the study area. In addressing the need to provide improved connectivity and accessibility of the study area, LEA surmised it was critical to accommodate all modes of transportation. Specifically, improving cycling and pedestrian environments. Lastly, the study also highlighted the need for changes to develop a transportation environment that fulfills the urban design objectives of creating vibrant public spaces that are not only attractive from a design perspective, but also to foster a sense of community and neighborhood character.

Relevant Services Provided: Multi-Modal Transportation Planning, Environmental Assessment, Structural Assessment, Functional Planning, Project Management

PROJECT CONTACT	**UWE MADER,** Senior Engineer, City of Toronto umader@toronto.ca, 416-396-5151
ADDRESS	NORTH YORK CIVIC CENTRE, 5100 YONGE STREET, TORONTO, ON, M2N 5V7
CLIENT'S URL ADDRESS	WWW.TORONTO.CA

LEA Reference #3 – Liberty Village New Collector Road Schedule "C" MCEA			
CLIENT	City of Toronto	**NUMBER OF YEARS WORKING TOGETHER**	Over 20 years
LOCATION	Toronto	**DURATION OF INVOLVEMENT**	2010 – 2017

Project Summary: LEA was retained by the City of Toronto to study the potential for a new east-west connection between Dufferin Street and Strachan Avenue. LEA considered improvements to the entire transportation network, exploring options that include connecting sidewalks, providing improved streetscapes, and connecting dead-end streets for improved vehicular movements. All of the resulting urban design concepts and functional roadway designs reflect the unique context of the King-Liberty Village area. LEA considered community engagement to be paramount for this study, and so designed an extensive public consultation process exceeding the base requirements. LEA used an introductory workshop to identify key issues before the commencement of the study, and several Public Open House sessions to address comments, design reviews, and community concerns. In the course of the study, LEA coordinated with key stakeholders, including Metrolinx/GO Transit, TELUS, City of Toronto planning, urban design, and public works departments, various cyclist and pedestrian groups, Toronto Police Services, and local landowners.

LEA developed a variety of solutions for implementing the required road right-of-way between heritage features and a rail corridor, while accommodating a multi-use path and improved connectivity to the Exhibition GO Station and reconstruction of the Dufferin Street Bridges. Study included the development of a macro-level transportation model and an extensive public consultation process that in addition to a series of stakeholder meetings included pre-EA workshop, two public meetings and a design review panel presentation.

Relevant Services Provided: Transportation Planning, Environmental Assessment, Functional Planning, Preliminary Design, Project Management

PROJECT CONTACT	**LORNA ZAPPONE,** Project Manager, Infrastructure Planning, City of Toronto Lorna.zappone@toronto.ca, 416-392-8650
ADDRESS	100 QUEEN STREET WEST, 24TH FLOOR EAST, TORONTO, ON, M5H 2N2
CLIENT'S URL ADDRESS	WWW.TORONTO.CA

LEA Reference #4 – Algonquin Island Bridge Schedule "C" MCEA			
CLIENT	City of Toronto	NUMBER OF YEARS WORKING TOGETHER	Over 20 years
LOCATION	Toronto	DURATION OF INVOLVEMENT	2013 – 2014

Project Summary: LEA completed a Schedule 'C' MCEA for the Algonquin Island Bridge, which was originally built as a timber bridge and was showing signs of deterioration as a result of age and exposure to its surrounding environment. A number of potential solutions were explored, ranging from minor rehabilitation of the existing bridge to construction of a new bridge structure. The EA Study involved a particularly substantial natural heritage component given the bridge's location in close proximity to habitats and within a Provincially Significant Wetland. An extensive public consultation process, where the community was strongly involved, also took place and aided in the selection of the preferred alternative solution. Recognizing that the Bridge enjoys an iconic location on the Toronto Islands, LEA developed a robust public stakeholder program that included a Public Information Centre. Communicative graphics were developed to help visualize the deteriorating elements of the bridge and the options with regards to materials and structural design that were being considered for each bridge design element in relation to the engineering drawings provided. In addition to leading the public consultation plan for the study, LEA assisted the City of Toronto through their Indigenous consultation program. The Algonquin Island, and Toronto Islands in general, were noted to be frequented by many Indigenous groups and being used for both hunting as well as communal activities. As a result, the area was noted to hold both archaeological potential and spiritual significance for the Nation Huronne-Wendat and the Mississaugas of the New Credit First Nation.

Project Challenges and Efficiencies: The Algonquin Bridge's prominent location connecting Algonquin and Ward's Islands within the larger Toronto Islands area presented both an opportunity to deliver an iconic and culturally sensitive design as well as challenges with respect to the bridge's importance in the local and broader Toronto community and its proximity to environmentally sensitive features. ***Specifically:*** The bridge is located in an environmentally sensitive area close to natural habitats and within a Provincially Significant wetlands; and,

The timber structure is prominent within the community and provides a connection between Algonquin Island and Ward's Island for both visitors and residents of the island. The ability to effectively translate technical elements of the structural and material design of the bridge was key to ensuring effective public engagement and reducing the possibility of intense opposition as a result of misinformation.

To address these challenges, the LEA team developed a robust public consultation strategy to address the public's concerns and ensure the public felt effectively and adequately engaged throughout the process. Communicative graphics were a key consultation component to help bridge the gap between technical engineering design and public understanding for a culturally and environmentally sensitive project.

Relevant Services Provided: Environmental Assessment, Transportation Planning, Functional Planning, Structural Design, Project Management

PROJECT CONTACT	**DAVID KUPERMAN,** Program Manager, Transportation Planning, City of Toronto dkuperm@toronto.ca, 416-894-0823
ADDRESS	YORK CIVIC CENTRE, 5100 YONGE STREET TORONTO, ON, M2N 5V7
CLIENT'S URL	WWW.TORONTO.CA
ADDRESS	

enclosed: Attachment 1: Team Member Resumes
Attachment 2: Organizational Chart
Attachment 3: Schedule

ATTACHMENT 1

Team Member Resumes

Kenneth Chan, P.Eng., PTOE, PMP

Vice President, Transportation Engineering and Planning

Kenneth Chan is a Transportation Engineer and Vice President of Transportation Engineering and Planning at LEA Consulting Ltd. He is a certified Professional Traffic Operations Engineer (PTOE) with the Transportation Professional Certification Board Inc., a licensed professional engineer (P.Eng.) with Professional Engineers Ontario (PEO), a member of the Institute of Transportation Engineers (ITE) and a certified Project Management Professional (PMP).

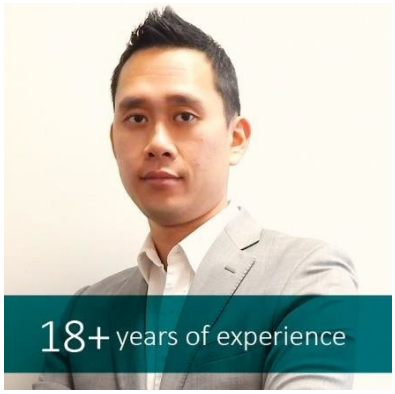
Kenneth has managed various types of projects from traffic operation analysis, transportation master plans, traffic modelling and simulation, Class Environmental Assessments, detail design, and construction management. Specifically, Kenneth has managed over 700 transportation projects for both private and public sector clients, providing transportation consulting services at various stages of planning, designing, as well as construction stages of the projects. Utilizing his in-depth knowledge in planning process, environmental assessment process, design standards, construction, as well as municipal approval permit processes, Ken has demonstrated his outstanding leadership and management skills by collaborating with the multi-disciplinary team and providing solutions that would meet clients' needs and interests.

Through his involvement in stakeholder consultation/ engagement, Ken has implemented various strategies to engage constructive and effective communication with stakeholders to gain their inputs while get their buy-ins.

Transportation & Master Plans| Key Project Experience

Downtown Transportation and Parking Study, Town of Richmond Hill

Building upon the Town's TMP EMME model, Kenneth led a team to expand the Downtown transportation model and focus on the implementation of the Town's vision for a comprehensive network of linkages and mews. Kenneth was responsible for managing and facilitating a variety of workshops and technical advisory meetings with Staff and key stakeholders. Under Kenneth's direction, the study established a wide range of linkage topologies for a linked system of courtyards and mews that complimented a range of active pedestrian focused design that would accommodate parking and loading needs to support the Town's vision for the Downtown.



Expertise

- Transportation planning and engineering
- Traffic forecast, modelling, and simulations
- Transportation operations analysis and optimization
- Transportation functional plan, preliminary design, and detail design
- Construction and traffic management
- Traffic safety review, flows analysis, and traffic signal warrant analysis
- Transportation demand management and parking studies
- Public Transit Infrastructure Projects

Education

- Bachelor of Applied Science, Department of Civil Eng., University of Waterloo, 2003

Certifications & Memberships

- Professional Engineers Ontario, PEO
- Institute of Transportation Engineers
- Professional Traffic Operations Engineer
- Project Management Professional (PMP)

Background

2002 – Present | LEA Consulting Ltd.
VP of Transportation Engineering and Planning

Previous roles:

- Senior Transportation Engineer/Project Manager
- Transportation Engineer
- Transportation Analyst/Designer
- Junior Transportation Engineer

Hewitt Secondary Plan Study, City of Barrie

Kenneth led a LEA team that was retained by the Secondary Plan Area Landowner Group to prepare a comprehensive traffic study in support of the Phase 1 of the Hewitt Secondary Plan area by building upon the City of Barrie Aimsum Traffic Model. The entire secondary plan area consists of 12,000 residential units and LEA prepared a traffic model that would allow the landowner group to test various level of development and determine the resultant traffic impacts throughout the City of Barrie. This level of traffic analysis flexibility permitted the landowner group to apply for the initial phase of development due to traffic capacity constraints. This traffic model platform would be beneficial as additional phases of development proceeds, a determination of infrastructure improvement trigger can be provided.

2000 – 2001 | Marshall Macklin Monaghan Ltd.
Junior Transportation Engineering Designer and Contract Administrator

2000 | Ministry of Transportation (MTO)
Traffic Manager Assistant

Class Environmental Assessment | Key Project Experience

Front Street Reconfiguration Municipal Class Environmental Assessment

Ken led the transportation operational analysis, alternative development, and preliminary design component of the Class Environmental Assessment to create safe and vibrant pedestrian spaces within the constrained road allowance along Front Street in front of Union Station. As part of the exercise, Ken undertook extensive traffic data collection that provided unique characteristics of activities in and around the major mobility hub, a gateway to the prestige employment area, as well as the tourist attraction area. Based on these traffic data, Ken provided engineering design principles to materialize the urban design through his assessment of pedestrian desire lines and interactions between various road users in relation to building entrances as well as intersections. Through the exercise and intensive collation with stakeholders, Ken provided a preliminary design which integrates vibrate, functional, yet safe pedestrian focused design while accommodating the needed vehicular cycling circulations in and around the Union Station.

North Queen Street Extension Municipal Class Environmental Assessment

Ken led the transportation assessment as well as the design for this Schedule 'C' Municipal Class Environmental Assessment study to increase transportation connectivity for all transportation modes at the west end of City of Toronto. As part of the exercise, Ken assessed the transportation needs for all modes of transportation users including cyclists and pedestrians in this area. Through this exercise, Ken created a strong linkage to integrate urban design to the transportation design as creating vibrant public spaces would foster a sense of community and neighbour character that would invite and encourage active transportation users.

Municipality-Wide Projects | Key Project Experience

Peel Region Cordon Count Study, Region of Peel

Kenneth oversaw the region-wide collection of traffic data across almost 250 stations within a limited window from April to June. A variety of data collection included heavy vehicle type and occupancy, Kenneth was responsible for the deployment of over 70 surveyors, which collected data constantly from 5:30AM to 8:30PM. Kenneth was also responsible for the quality assurance and data reduction phases. This included the inspection of data from all count stations against the field sheets, raw data, and historical surveys.

Residential and Commercial On-Street Parking Study, Town of Whitchurch-Stouffville

Under Kenneth's direction, LEA undertook a review of the residential and commercial on-street parking conditions within the Town of Whitchurch-Stouffville. This review included an extensive consultation process with Town staff and key stakeholders, detailed policy review, gap analysis and development of policy recommendations. Through this study, the Town initiated a parking permit program for visitors alleviating the concerns of a number of neighbourhoods throughout the Town.

Neighbourhood Traffic Calming Study, City of Brampton

Kenneth managed the examination of the existing traffic conditions and identifying concerns to neighbourhood in particular cut-through traffic on Worthington Avenue, Brisdale Drive, Conestoga Drive and Wexford Road in the City of Brampton. Kenneth was responsible for the review of existing turning movement counts, ATR data, collision data, and O-D license plate trace survey data. Through this process, Kenneth made a recommendation on the type and design of traffic calming devices required to mitigate the identified impacts. Kenneth was also responsible for the development of functional and detailed design drawings, cost estimates and tender document packages for the implementation of the recommended measures.

Public Transit Infrastructure Improvements | Key Project Experience

Hurontario-Main Light Rail Transit – City of Mississauga, City of Vaughan

Ken managed the LEA team responsible for conducting the off-line capacity analysis for all parallel routes to determine the impacts of reducing through traffic lanes along Hurontario Street and Main Street. Kenneth's responsibilities included being the liaison with project team and the municipalities, coordinating the use of the regional traffic model, overseeing traffic diversion adjustments and operational analysis that was undertaken for a variety of analysis scenarios.

Eglinton Crosstown Light Rail Transit, Toronto Transit Commission

Ken managed the traffic operations analysis using the EMME output to determine general traffic pattern and assimilation of City traffic counts and determine traffic impacts associated with the reduction of through traffic lanes along the Eglinton Avenue corridor during the construction stage. As part of this project, Kenneth was responsible for preparing a Synchro model examining traffic impacts along 87 intersections from Black Creek Drive to Boulevard to Laird Drive.

Transportation Safety, Operations Assessment & Data Collection| Key Project Experience

Traffic Operations Analysis, Finch Station West, Toronto – York-Spadina Subway Extension

Responsibilities included the preparation of a detailed traffic impact study that examined the traffic impacts associated with the Finch West station construction. LEA prepared traffic projection and traffic impacts associated with the lane reduction in the area and prepared documentation for the TTC in discussion with the City of Toronto on roadway geometry designs Furthermore, technical analysis and designs were provided for negotiations with affected land owners to incorporate existing development access onto the new proposed roadways.

PanAm Games Event Site Microsimulation, Ministry of Transportation, Ontario

Retained as part of a broader planning and design team, Kenneth managed the development, validation, and calibration of a microsimulation model around two event venues for the Pan/Parapan Am Games being held in the Toronto Region in 2015. The transportation analysis included the evaluation of background, spectator and games traffic to identify and test potential mitigation measures. Measures tested included regulatory, physical, transit signal priority. The models utilized both VISSIM and VISUM packages. In addition to the microsimulation, Kenneth managed the project wide data collection, collecting a variety of different types of data including Bluetooth, travel times, and turning movement counts.

Red Maple Road and High-Tech Road Operations Study, Town of Richmond Hill

Kenneth was responsible for conducting an operations review for two segments of Red Maple Road and High-Tech Road in the Town of Richmond Hill. As part of this study, Kenneth developed a project plan that included an extensive policy review, data collection process, traffic analysis, and functional design. Critical to the success of this project was Kenneth's recognition of the variety of user groups of this corridor to ensure the recommended improvement best served the required purpose of these roads.

Terry Wallace, P.Eng.

Director & President

Terry has worked in the fields of transportation planning, traffic operations engineering, environmental assessment, civil design and construction. He has also managed numerous multi-disciplinary transportation infrastructure projects from the planning stage to implementation.

Over the past 30 years, Terry has been involved in projects requiring extensive transportation planning, traffic operations engineering, functional and detailed design for EA studies, civil and municipal engineering design, Official Plan reviews, Secondary Plans, corridor/traffic impact studies, major utility relocations and feasibility and cost: benefit studies. He has been extensively involved in the Civil design aspect of major rail and transit infrastructure projects, including conceptual design, planning and public consultation, environmental assessments, detailed design of road and transit infrastructure, utility relocations, traffic/construction management plans, traffic/transit operations analysis, pedestrian and cycling studies and travel demand forecasting.

On transportation matters, Mr. Wallace has provided expert testimony to the Ontario Municipal Board on many occasions. Throughout his career, he has utilized and analyzed transportation-related operations and computer modelling techniques with specific reference to traffic engineering and transportation planning.

Transit Studies & Environmental Assessments | Key Project Experience

The following studies have involved transportation planning, traffic operational analyses, environmental assessments, preliminary and detailed design in relation to planned transit and road infrastructure:

- Liberty Village New Collector Road Schedule 'C' Municipal Class Environmental Assessment – City of Toronto
- Steeles Avenue East Grade Separation Schedule 'C' Municipal Class Environmental Assessment – City of Toronto
- McNicoll Avenue Extension, Schedule B Class EA *Environmental Assessment* – City of Toronto
- North Yonge Street Corridor Environmental Assessment *Transit Peer Review*
- Extension of LRT service between Dufferin Street and Roncesvalles Avenue – TTC *Environmental Assessment*
- Extension of LRT service from Exhibition Place Loop to Dufferin Street – TTC *Environmental Assessment Modification*
- Bremner/Fort York Boulevard LRT Service, Union Station to Exhibition Place – TTC *Transit Environmental Assessment*

Expertise

- Municipal & Civil Engineering
- Development Engineering
- Utility Coordination
- MTO Highways
- Transit Infrastructure

Education

- B.Eng., Department of Civil Engineering, Ryerson Polytechnic Institute, 1989
- Advanced Intersection Analysis with Computer Models, University of Florida, 1994
- Geometric Design, Northwestern University Traffic Institute, 1999

Certifications & Memberships

- Professional Engineers Ontario, PEO
- Institute of Transportation Engineers
- Designated Consulting Engineer

Background

2017 – Present | LEA Consulting Ltd.
President, LEA Consulting Ltd.
Director, LEA Group

2003 – 2016 | LEA Consulting Ltd.
Director, LEA Group
Vice President, LEA Consulting Ltd.

1995 – 2002 | LEA Consulting Ltd.
Project Manager

1989 – 1995 | LEA Consulting Ltd.
Transportation Engineer

1988 – 1989 | Terraprobe Geotechnical Engineering Consultants
Field Engineer

- Lake Shore Boulevard West Dedicated LRT Right-of-Way – TTC *Preliminary Planning Report for Environmental Assessment*
- Relocation of Lake Shore LRT Station and Loop from Legion Road to Park Lawn Road – TTC *Environmental Assessment Modification and Detailed Design*
- Finch West and Sheppard East LRT Feasibility Studies – TTC
- Transit in a Dedicated R.O.W. along Lakeshore Boulevard West – TTC *Traffic Operations Study and Parking Analysis*
- Steeles West Subway Station (incl. two bus terminals, PPUDO, Roads, Commuter Parking Lot) – TTC
- Dufferin Station Design, ESC-LRT – Metrolinx/TTC
- ESC-LRT – Metrolinx/TTC *Conceptual Stations Design and Functional Analysis*
- ESC-LRT – Metrolinx/TTC *Corridor Transportation Study*
- Eglinton Avenue Subway Expansion, Allen Road Station, Rapid Transit Expansion Program – TTC *Traffic Management Plan*
- Gardiner/Highway 427/QEW/Brown's Line Interchange Modifications Class C (Group B) *Environmental Assessment Study*

Traffic Operations Analysis | Key Project Experience

The following projects involve the use of computerized modelling techniques to assess the traffic operations along road corridors.

- Eglinton Avenue Subway Expansion, Allen Road Station, Rapid Transit Expansion Program – TTC Traffic *Management Plan*
- Trafalgar Road Corridor – Regional Municipality of Halton *Transportation Study*
- Bank of Montreal, City of Scarborough, ON – Bank of Montreal *Master Plan Transportation Study*
- Yonge Street, Town of Newmarket, ON – Loblaw Properties Ltd. *Traffic Signal Relocation*
- Main Street/Nipissing Road, Milton, ON – Adason Properties Ltd. *Traffic Signal Design*
- Sheppard/Allen Area, Toronto, ON – Idomo International *Traffic Impact Assessment*
- Parkway Place Corporate Centre, North York, ON – TD Investment Real Estate *Transportation Study*

Travel Demand Forecasting | Key Project Experience

The following representative projects have involved the use of computerized modelling techniques for travel demand forecasting and traffic operations assessment. Projects include transportation studies for Official Plans, Secondary Plans and Development Site Impact Assessment.

- Town of Innisfil *Official Plan Review and Growth Management Study*
- North Oakville, Oakville, ON – North Oakville Landowners Group *Secondary Plan*
- North Leslie, Richmond Hill, ON – Bayview East Landowners Group *Secondary Plan Transportation Assessment*
- Gardiner/Hwy 427/QEW Interchange Modifications Class, Toronto, ON – City of Toronto *Environmental Assessment Study*
- Waterfront-West LRT Extension EA, Toronto, ON – TTC *Transportation Planning*
- Concord Adex Developments, Blocks 24, 25, 26E, 26W and 29/ Railway Lands, Toronto, ON
- North York City Centre, North York, ON – Yonge Street Developers Group *Transportation Analysis*
- Sherway Centre – City of Etobicoke *Secondary Plan Transportation Assessment*
- Carlingwood Mall Shopping Centre, Ottawa, ON – Trilea Centres *Traffic Impact Study*

Terry Wallace, P.Eng.

Director & President

Special Studies and Peer Reviews for Pubic Agencies and Institutions | Key Project Experience

- Markham Traffic Calming Strategy, Markham, ON – Town of Markham
- Halton Recycling Transportation Study, Newmarket, ON – Halton Recycling
- Warwick Landfill Site EA, Lambton County, ON – County of Lambton Works Dept. *Transportation Peer Review*
- Transportation Peer Reviews for Developments in the Town of Innisfil, ON – Town of Innisfil
- Mayfield West Community Transportation Plan, Caledon, ON – Town of Caledon Planning Dept. *Peer Review*
- Trump Plaza Development, Toronto, ON – National Club of Toronto *Peer Review*
- Highway Reconstructions in Northern Ontario – MTO *Transportation and Traffic Safety Assessments*
- Financial Drive School, Brampton, ON – Le Conseil Scolaire de District du Centre-su-ouest *Transportation Study*
- Enterprise Drive Environmental Assessment, Markham, ON – York Region School Board *Peer Review*
- Hanlon Business Park, Guelph, ON – Cox Construction *Peer Review*

Transportation Planning – Site Development, Traffic Impact Studies | Key Project Experience

The following projects have involved traffic engineering/planning and operations assessment for the creation and development of new land uses, including commercial, industrial, retail and residential locations.

Projects include traffic impact studies for new developments, traffic signal operations assessment, traffic management plans, and some projects involved the preparation of transportation-related evidence for the Ontario Municipal Board.

- Redevelopment of the Don Mills Shopping Centre, Toronto, ON – Cadillac Fairview Corporation
- Yonge-Dundas Redevelopment Project, City of Toronto, ON – City Works Services.
- Melrose Industrial Park Transportation Study, Oakville, ON – Melrose Investments Inc.
- Tapscott Industrial Lands Transportation Study, Toronto, ON – Tapscott Industrial Landowners Group.
- Transportation Study for Redevelopment of the TSTT Lands, Toronto, ON – Canderel Stoneridge Equity Group.
- Morningside Heights Transportation Review, Scarborough, ON – Morningside Heights Landowners Group.
- New Province Homes Residential Development, Oakville, ON – Metrus Development Inc.
- Transportation and Parking Studies for OMNI South Residential Development, Toronto, ON – Tridel
- Warehouse Distribution Centre, Mississauga, ON – Metrus Development Inc.
- Bronte Transportation Update, Oakville, ON – Regional Municipality of Halton.
- 85 Bloor Street East Residential Development Traffic Impact Study; City of Toronto, ON – Lakeburn Land Capital Corporation.
- Traffic Impact and Parking Study for the First Euro-Pacific Centre, Hotel and Commercial Development, Town of Markham, ON – Kyser-Pacific Group.
- Traffic Impact Study for Yonge/Spring Garden Development, North York, ON – Bramalea Ltd.
- South Winston Park Industrial Development, Site Access Study, Mississauga, ON – The Goldman Group.
- Traffic Impact Statement for the Skypoint Business Centre, Dixie Road, Mississauga, ON – The Georgian Group.
- Traffic Impact Study for the Clearview Shopping Centre, Oakville, ON – Kaneff Properties Ltd.
- Traffic and Parking Studies for Carlingwood Mall Shopping Centre, Ottawa – Trilea Centres.
- Traffic Impact Study for shopping plaza at 2094 Brimley Road, Scarborough, ON.
- Lawrence/Port Union Residential Development Traffic Impact Study, Scarborough, ON – Bramalea Limited.
- Traffic Impact Study for Elaine Plaza Development, Eglinton Avenue East, Scarborough, ON – Lamvid Inc.
- Transportation Analysis for the Kennedy/Progress Industrial Area; Scarborough, ON.
- Traffic Impact and Access Study for Old Mill Mixed- Use Development, Etobicoke, ON.
- Traffic Impact and Access Study for Princess Gardens Residential Development, Etobicoke, ON.

- Traffic Impact Assessment for the Heath Park Mixed-Use Development; Toronto, ON – Bedford Green Estates Ltd.
- Traffic Impact Study for Monogram Office Park; Etobicoke, ON – IPCF Properties Inc.
- Traffic Impact Study for Rebecca Hills Mixed-Use Development; Town of Orangeville, ON – Goldfan Holdings Ltd.
- Traffic Impact Studies of Retail Warehouse Applications – Consortium of Major Ontario Food Retailers.
- Traffic Impact and Parking Study for Redevelopment of Weston Bakery Site, Toronto, ON – IPCF Properties Inc.
- Zooview Development Traffic Impact Study; Scarborough, ON – Bratty and Partners.
- Traffic Impact Assessment for the Proposed Residential /Commercial Development, 1749 Dundas Street East, Mississauga, ON – Ontario Landtrust.
- Transportation Assessment for the Blue Mountain Mall, Collingwood, ON – The Citation Group Inc.
- Transportation Assessment for a Development Consisting of 1,500 Residential Dwelling Units, Richmond Hill, ON – H & R Developments.
- Functional Planning of Road Infrastructure Improvements for a Foodstore Development, Barrie, ON – IPCF Properties Inc.
- Traffic Impact Study for a Parking lot in Downtown Toronto, 85 Bloor Street East, Toronto, ON – Lakeburn Land Capital Corporation.
- Secondary Plan Traffic Report - Meadowvale Village, City of Mississauga, ON – Bramalea Ltd.
- Traffic Impact Study for a Loblaws Foodstore, Oakville, ON – IPCF Properties Inc.
- Traffic Impact and Parking Study for Commercial Development, Gibb Street, City of Oshawa, ON – IPCF Properties
- Traffic Impact Study for Sheppard/Easton Residential Development, City of North York, ON – G&S Regal.
- Traffic Certification for Empress Gate Residential Development, City of North York, ON – Grubner Krauss, Barristers & Solicitors.
- Transportation Improvements, Loblaws Development, Town of Milton, ON – Adason Properties Ltd.
- Traffic Assessment and Functional Design for Expansion of Loblaws Foodstore, Newmarket, ON – Loblaw Properties Ltd.

Functional Planning and Design | Key Project Experience

The following projects involved functional planning and design, and/or preparation of contract drawings, for transportation infrastructure.

- St. Clair Avenue West Underpass Functional Planning Study
- Park Lawn Streetcar Loop – Detailed Design and Contract Drawings, Toronto, ON – Toronto Transit Commission.
- Bathurst Street Bridge Closure Traffic Management Plan, Toronto, ON – Metro Transportation.
- Loblaws Food Store Expansion and Driveway Improvements, Newmarket, ON – Loblaw Properties Ltd.
- Main Street/Nipissing Road Traffic Signal Design and Road Improvements, Milton, ON – Adason Properties Ltd.
- West Toronto Railway Connection, Toronto, ON – Canadian Pacific Railway.
- Traffic Signal Improvements, Bolton Zehrs Foodstore, Caledon, ON – Loblaw Properties Ltd.
- Gardiner/Highway 427/QEW/Brown's Line Interchange Modifications, Toronto, ON – City of Toronto.
- Morningside Heights Transportation Improvements, Toronto, ON – Morningside Heights Landowners Group.
- Rotherglen School Driveway Improvements, Oakville, ON – Rotherglen School.
- Tapscott Industrial Lands Road Improvements, Toronto, ON – Tapscott Industrial Landowners.

Christopher Sidlar, M.Sc.Pl., MCIP, RPP

Manager, Transportation Planning

As the Manager of Transportation Planning at LEA Consulting Ltd., Christopher has a wealth of experience coordinating and managing master plans, environmental assessments, transportation operations studies, public meetings and stakeholder engagement.

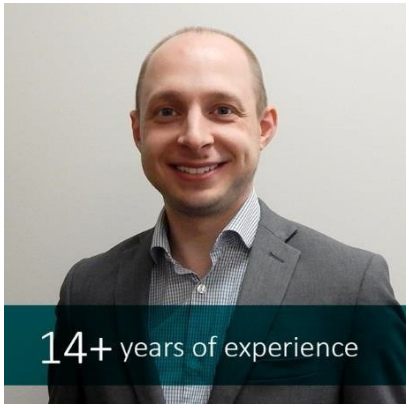
Christopher has been instrumental in the project management for a number of major transportation projects and has developed a comprehensive understanding of multi-modal transportation planning and the interconnectedness of land use planning and transportation planning. This experience has provided him with a balanced understanding of travel behavior and traffic operations, particularly how it is affected by land use planning, urban design, heritage preservation and the environment.

He also has extensive experience working closely with municipal and agency staff on consultation activities, and enjoys the development of solutions that, through a combination of complex interests, can meet the needs of a wide number of residents, agencies, and other stakeholders.

Transportation Planning and Environmental Assessments | Key Project Experience

Yonge Street North Transportation Master Plan Update – City of Toronto *(ongoing)*

- As the **Project Manager**, lead a multi-disciplinary team to prepare a Transportation Master Plan in accordance with the Municipal Class Environmental Assessment process Approach #2.
- The focus of the Master Plan was critically review the transportation system in response to the planned subway extension from Finch Station to York Region. This review includes establishing new linkages to support future Transit-Oriented Developments, address any safety concerns in the study area, improve the planned active transportation network in the area, and provide a full suite of Transportation Demand Management strategies including shared mobility, mobility as a service, emerging technologies, and parking management strategies.
- The exercise included the preparation of a mesoscopic transportation model to test the effectiveness and utilization of the proposed links.
- Provided strategic guidance for all deliverables and solutions developed. Directly oversaw the development of the evaluation and assessment of the alternative solutions.



Expertise

- Transportation Planning
- Environmental Assessment
- Master Planning
- Public Consultation

Education

- Master of Science in Planning, University of Toronto, 2009
- Honours Bachelor of Arts, (Specialist) Urban, Economic and Social Geography, (Major) Urban Studies, and (Minor) Geographic Information Systems, University of Toronto, 2006

Certifications & Memberships

- Registered Professional Planner
- Full Member of the Canadian Institute of Planners

Background

2016 – Present | LEA Consulting Ltd.
Manager, Transportation Planning

2015 – 2016 | LEA Consulting Ltd.
Associate, Senior Transportation Planner

2010 – 2015 | LEA Consulting Ltd.
Associate, Transportation Planner

2008 – 2010 | LEA Consulting Ltd.
Transportation Planner

2006, 2007 – 2008 | LEA Consulting Ltd.
Junior Transportation Planner

2006 | University of Toronto
Teaching Assistant, Transportation Geography

- Public engagement plan included two public meetings that were integrated with the planning study that was ongoing in the area and series of specific stakeholder meetings.
- Scope included providing City Staff additional support services during the conceptualizing and drafting of the amendments to Secondary Plan, development of an implementation plan, and prioritization of the recommended projects and initiatives.

Scarborough Centre Transportation Master Plan – City of Toronto

- As **Project Manager**, lead a multi-disciplinary team including transportation engineers/planners, urban designers, structural engineers, heritage specialists, archaeologists, and geotechnical engineers, oversaw the development of a transformational multimodal transportation vision for Scarborough Centre focused around capitalizing on the subway extension investment in the area.
- Championed the establishing of an urban grid for the area and the removal of auto-oriented features including ramps and overpasses which are barriers to walking and cycling in the area.
- Oversaw the development of a multi-modal transportation model, inclusive of a macro-level network model and a micro-level Syncrho model for intersection analysis to assess the impacts of the preferred alternative
- Was responsible for all project documentation and ensured it was developed to be clear, concise and engaging
- Managed a public engagement process included 16 PiPS events, chairing 3 Local Advisory Committee meetings, 41 interviews through a Roving Information Station, and presenting at 3 Public Consultation Meetings
- Provided City Staff additional support services during the conceptualizing and drafting of the amendments to Secondary Plan

University of Toronto St. George Campus Master Plan and Secondary Plan Update – University of Toronto

- As **Project Manager**, was responsible for the development of the Transportation Study as part of the Master Plan and Secondary Plan Update for the St. George Campus
- Building upon a new land use and urban design scheme for the campus, developed a revisioning of the campus streets to balance the needs of the users including recommendations for road closures, lane reductions, conversions to one-way roads, establishing of shared streets and traffic calming measures
- Oversaw the modelling and evaluation of a number of alternative network solutions, their evaluation, and the selection of a preferred transportation network plan for the campus
- The study also included an extensive parking supply review, including recommendations for the overall supply and types of permits
- Collaborated closely with urban designers, planners, University Staff and City officials in preparation for and participation at stakeholder and Governing Council Meetings, in addition to 4 Public Consultation Meetings

Richmond Hill Downtown Transportation and Parking Study

- As the **Deputy Project Manager** was responsible for the resource and schedule management of planning and engineering staff assigned to the project
- Facilitated internal stakeholder workshops to establish a unified vision of the redevelopment of the Downtown
- Envisioned the process in which the Town could establish a secondary laneway system for its Downtown Core, inclusive of developing a hierarchy of laneway typologies and criteria for their appropriate use
- Developed a comprehensive parking and loading strategy to ensure the areas demands would be accommodated but while maximizing the amount of property that would be available for redevelopment including consolidated loading areas, use of cash in-lieu parking policies, and structured parking lots
- Managed traffic modelling for the Downtown Study area including the development of a future demand that accommodated the planned mode splits that reflect future increased ridership along the Yonge Street VIVA line
- Responsible for the authoring of the final report and the preparation of presentations to the Executive Management Committee, Downtown Area Task Force, and Town Council

Don Mills Crossing Municipal Class Environmental Assessment – City ofToronto

- As the **Project Manager**, was responsible for the development of the project scope, monitoring of the project schedule, stakeholder engagement, and quality management plan.
- Fulfilling Phases 3 and 4 of the Municipal Class Environmental Assessment process, developed alternative designs for the crossing of the CPR rail corridor to connect with the Don Mills trail.
- Design developed included an active transportation bridge considering the ease of use by a variety of different users and abilities. The design focused on exceeding AODA specifications, providing context-sensitive connections with the adjacent development and trail system, and provide a gateway element for the development community.

Wynford Drive Detailed Design Technical Advisory Services – City of Toronto

- As the **Project Manager**, provided review and management services for the City of Toronto during the detail design process of the Wynford Drive extension as part of the Crosstown development.
- The technical review included facilitating a multi-disciplinary review of the detailed design drawings, coordination between various internal departments within the City, formulating the City's position in response to the design submissions, preparation and implementation of a clear comment compliance tracking method, and was the main point of contact for the City with the developer.

Broadview Avenue Extension Municipal Class Environmental Assessment – City of Toronto

- As the **Deputy Project Manager**, was responsible for the design development of the Broadview Avenue Extension from Eastern Avenue to Lake Shore Boulevard East, the main east-west collector road within the Unilever Precinct, and a new ramp connection for westbound traffic along Eastern Avenue to the Don ValleyParkway.
- As part of the project, Christopher was also responsible for overseeing and coordinating the development of a microsimulation transportation model for the broader study area in order to test the provision of a number of connectivity elements including new on-ramps to the Don Valley Parkway and specific intersection turning provisions.
- The design included integrating the requirements of a grade separation at the proposed integrated East Harbour GO Transit and Ontario Line Station, a dedicated streetcar lanes, cycling track, and signature green street elements including a variety of bioswales, rain gardens, irrigation filterstrips, permeable pavement lay-bys, green roof transit shelters, and a variety of planting.
- The design also capitalized on the opportunity to improve the geometry of Broadview Avenue, Eastern Avenue and the local roads within the Unilever precinct to achieve Vision Zero objectives.

Brooklin North Major Roads Municipal Class Environmental Assessment – City of Toronto

- As the **Deputy Project Manager**, was responsible for the coordination of a variety of project deliverables including a multi-disciplinary team of subconsultants and internal civil, traffic and structural engineers. This included the development of an evaluation matrix and assessment of the proposed alternative designs as well as the preparation of all project documentation.
- The recommended designs established a major collector road network to support the future development in the Brooklin North area. This included managing a number of environmentally sensitive areas, active watercourses, and a desire to provide a connected network that would support active transportation and emerging technologies.
- To ensure that the project continued to progress despite the global COVID-19 pandemic, Christopher was integral in developing a virtual public engagement process that satisfied the Municipal Class Environmental Assessment process.

Liberty New Street 30% Detailed Design – City of Toronto

- As the **Project Manager**, oversaw a multi-disciplinary design team to further the recommended design from the EA in order to facilitate the property acquisition and implementation process. This included overseeing the collection of updated topographic, geotechnical, and soil contaminant surveys.
- The design integrated the designs of sections of the roadway that were being provided by private developers, as well as coordinated with other City and Metrolinx projects.
- The implementation phasing was also reviewed to ensure that the design provided optimal flexibility for the proposed phasing given the unknowns associated with the adjacent Metrolinx improvements including electrification of the Lakeshore West corridor and the Ontario Line.

Castlefield Avenue and Ingram Drive Grade Separation Feasibility Study – City of Toronto

- As the **Project Principal**, responsible for reviewing the potential grade separation options available for the Barrie GO Rail Corridor in the Castlefield-Caledonia area.
- The project included the development and evaluation of over and underpass options for both Castlefield Avenue and Ingram Drive. The options were reviewed from a number of critical elements including constructability, cost, property impact, business continuity, property acquisition requirements, and traffic operations.

Steeles Avenue East Grade Separation Detailed Design Technical Advisory Services – City of Toronto

- As the **Project Manager**, provided review and management services for the City of Toronto during the detail design process of a rail over road grade separation along Steeles Avenue East integrating the project with the reconstruction of the Milliken GO Station.
- Beyond being responsible for overall project delivery, Chris was responsible for the establishing and monitoring project scope, schedule, stakeholder, and quality management plans.
- Facilitated the development of the Project Specific Output Specifications for the Project Agreement, as the project was to be implemented through infrastructure Ontario's Alternative Financing Procurement process as a Design-Build-Finance project.
- Developed and managed a multi-disciplinary team of experts to review a wide range of aspects of the detailed design including of the sidewalk, cycling facilities, roadway, bridges, retaining walls, traffic control signals, electrical/ lighting, streetscaping/urban design, utility conflicts and pumping station, security/communications systems.
- Advanced the property acquisition requirements in coordination City and Project Sponsor.

Steeles Avenue East Grade Separation Schedule 'C' Municipal Class Environmental Assessment – City of Toronto

- Was the **Deputy Project Manager**, responsible for the development and execution of the project management plan for the planning and design of Steeles Avenue Grade Separation in accordance with Municipal Class EA Schedule 'C' process.
- Devised a preferred alternative solution that balanced all users within the right of way, including providing protected cycling facilities, while protecting for long-term plans of rapid transit along Steeles Avenue and its direct integration with the Milliken GO Station.
- Secured agreement for the integration of pedestrian bridges across Steeles Avenue East facilitating a community desire line and ensuring the grade separation would not be a barrier for the development of a community node.
- Orchestrated a public engagement process that included two Public Information Centres, two group stakeholder meetings, 14 stakeholder meetings in addition to correspondence with 12 community associations and over 125 businesses.
- Managed the documentation process and development of a comprehensive Environmental Study Report.
- Proactively engaged with the Ministry of the Environment regarding the Part II Orders to ensure an accelerated review.
- Successfully represented the City of Toronto during the Hearing of Necessity as part of the Expropriation Process.

University of Toronto Mississauga Campus Traffic Flow Study – University of Toronto

- As **Project Manager**, executed the preparation of a campus traffic flow study to accommodate the consolidation and increase in parking supply with the construction of a structured parking garage.
- Identified conflict and congestion points on campus including issues with vehicle queuing, sight lines, and pedestrian crossings.
- Evaluated alternative access routes to the new parking structure from a capacity and environmental impact perspective.
- Authored a summary traffic study, and facilitated discussions with the City and Region as part of the Site Plan Application process.

Liberty Village New Collector Road Schedule 'C' Municipal Class Environmental Assessment – City of Toronto

- As **Deputy Project Manager**, was responsible for coordinating a multidisciplinary team, including transportation engineers and modellers, environmental planners, urban designers, heritage specialists, and archaeologists to develop a new collector road within Liberty Village.
- Developed a variety of solutions for implementing the required road right-of-way between heritage features and a rail corridor, while accommodating a multi-use path and improved connectivity to the Exhibition GO Station and reconstruction of the Dufferin Street Bridges.
- Oversaw the preparation of a macro-level traffic model to evaluate the anticipated changes in travel behaviour as a result of the new road link.
- Responsible for the preparation of consultation materials and undertaking the consultation events which included a pre-EA Introductory Workshop, two Public Information Centres, presentation to the Design Review Panel, and a series of stakeholder and property owner meetings.
- Prepared the Environmental Study Report for the project as well as additional requests as part of the reviews undertaken by the Ministry of the Environment and development of the Official Plan amendment.
- Supported City Officials through preliminary property acquisition discussions with area stakeholders, including property owners, Toronto Police Services, Telus and Metrolinx.

Front Street Reconfiguration between York Street and Bay Street Schedule 'C' Municipal Class Environmental Assessment – City of Toronto

- As the role of **Transportation Planning Lead and Project Coordinator**, orchestrated the reconfiguration of Front Street in front of Union Station balancing the large number of pedestrians, private pick-up/drop-offs, taxis, and buses.
- Justified establishing of a pedestrian priority zone and traffic calmed area in the centre of the segment with flush curbs that can be transformed into an entertainment space, as required.
- Undertook the macro-level traffic modelling of an area within the downtown which included approximately 70 intersections.
- Pioneered the use of a pedestrian simulation software to illustrate how the roadway would be used by upwards of 24,000 pedestrians in the peak hour, this was then integrated into the microsimulation analysis conducted at for the study area intersections.
- Oversaw the coordination of the Urban Designers, Engineers, and City Staff for the selection of a materials palette for the road and sidewalk that was consistent with the adjacent heritage elements, while meeting objectives for cost efficiency and maintenance.
- Prepared the Environmental Study Report for the project as well as additional requests as part of the detailed design.

Market and Economic Development Opportunity Study for the Peel Memorial Centre – City of Brampton

- As **Transportation Planning Lead**, was responsible for the development of a precinct level transportation study to identify constraints and opportunities for the redevelopment of the area surrounding the Peel Memorial Centre.
- This included working collaboratively with land use planners and economic development experts to determine the areas potential.
- Established a realistic development plan with 'quick-win' transportation projects that could help foster development of the Peel Memorial Precinct into a specialized Health Care node.
- Was responsible for the preparation of the transportation study as well as related presentations made to the steering committee, executive committee and area stakeholders.

Dufferin Street Bridges Schedule 'C' Municipal Class Environmental Assessment – City of Toronto

- Served as the **Transportation Planner and Project Coordinator** responsible for liaison between the City Staff and Project Manager and the subconsultants.
- Facilitated the development of a bridge design solution that from a vertical profile perspective would accommodate the required changes in the vertical clearance over the GO Transit corridor and proximity between adjacent structures, while mitigating property impacts, and from a plan perspective would provide for the accommodation of the future Waterfront West LRT line.
- Responsible for the preparation of consultation materials and undertaking the consultation events, including a presentation at the Design Review Panel.
- Documented the project recommendations as part of the Environmental Study Report.

North Queen Street Extension Schedule 'C' Municipal Class Environmental Assessment – City of Toronto

- As **Transportation Planning Lead and Project Coordinator**, was responsible for the identification of transportation solution for the traffic congestion identified around Sherway Gardens Mall.
- Developed a preferred solution that established a new east-west road connection between North Queen Street and the West Mall improving the accessibility for the adjacent properties and facilitating their potential future redevelopment.
- Formulated a macro-level traffic model for the weekday PM and Saturday peak periods to model travel behavior around the shopping centre and the impact of implementing a new road link.
- Created materials for the public information centres and was responsible for the overall project documentation and authoring of the Environmental Study Report.

Algonquin Island Bridge Schedule 'C' Municipal Class Environmental Assessment – City of Toronto

- As **Transportation Planning Lead and Project Coordinator**, organized the resource management of a multi-disciplinary team of experts focused on developing a context sensitive solution that would be cost-effective considering the overall life cycle costs.
- Was instrumental in the development of a composite bridge incorporating a modern-day substructure with a timber superstructure that reflected the original structure while meeting accessibility design standards.
- Was responsible for the stakeholder management of the key agencies and approval authorities including First Nations, Toronto Region Conservation Authority, and Transport Canada.
- Organized two public information centres in a Town Hall format, in addition to the preparation the Environmental Study Report, in a manner that was clear and concise, to better engage to the Toronto Islands community.

Other Project Experiences include:

- **Transportation Lead:** Toronto-Gore Area Secondary Plan Density Policy Review – *City of Brampton*
- **Deputy Project Manager:** On-Street Residential and Commercial Parking Master Plan – *Town of Whitchurch-Stouffville*
- **Project Manager:** Employee Travel Time Study – *Royal Bank of Canada*
- **Project Manager:** GO Transit Bus User Survey Data Analysis and Summary – *GO Transit*
- **Senior Transportation Planner:** Yonge Street North Planning Study (Transportation Master Plan) – *City of Toronto*
- **Project Manager:** Slots at Ajax Downs Traffic Infiltration Study – *Town of Ajax*
- **Transportation Planning Lead:** Belleville City Centre Revitalization – *City of Belleville*
- **Project Coordinator:** St. Clair Avenue at the Georgetown GO Underpass Functional Infrastructure Planning Study – *City of Toronto*
- **Transportation Planner:** North Leslie MESP, Richmond Hill, ON – *North Leslie Secondary Plan Landowners Group*
- **Transportation Planner:** Regional Carpool Lot Site Selection Study – *Region of Peel*
- **Transportation Planner:** Central Peninsula Parking and Snow Removal Study – *City of Saint John*
- **Transportation Planner:** Toronto West-Central Area Strategic Transportation Network Review – *City of Toronto*

Publications

- Sidlar, C. and C. Rinner (2009). Utility Assessment of a Map-Based Online Geo-Collaboration Tool. Journal of Environmental Management. 90 (6): 2020-2026.
- Sidlar, C. and C. Rinner (2007). “Analyzing the Usability of an Argumentation Map as a Participatory Spatial Decision Support Tool.” Urban and Regional Information Systems Association (URISA) Journal. 19 (1): 47-55.

Irene Hauzar, MCIP, RPP, AICP

Senior Project Manager

Irene is a Senior Project Manager specializing in stakeholder and community engagement, urban transportation and transit planning, land use planning and environmental planning including environmental assessments (NEPA, MCEA, CEAA). Irene has experience working across multiple disciplines, synthesizing technical work into various forms of communication for both public and regulatory agencies. Irene has experience developing, implementing and incorporating both qualitative and quantitative evaluation processes into decision making, and helping both the community and other stakeholders come up with the most feasible alternative or development scenario.

Environmental Assessments | Key Project Experience

Brooklin North Major Roads Environmental Assessment - Whitby, Ontario *Ongoing*

Senior Environmental Planner responsible for evaluation of alternatives, review of existing conditions, review of public consultation materials, and overall ensuring consistency with the Municipal Class Environmental Assessment process.

Don Mills Crossing EA - Toronto, Ontario *Ongoing*

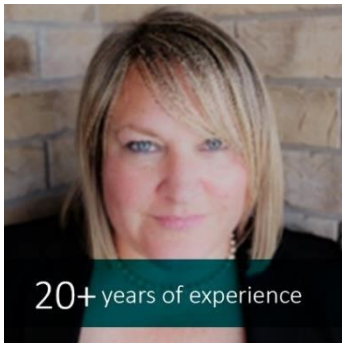
Senior Project Manager responsible for proceeding with Phases 3 and 4 of the MCEA for the Don Mills Crossing active transportation crossing of the CP Rail corridor. Conducted an evaluation of crossing alternatives including new bridge structure and associated ramps and stairs and documented results in an Environmental Study Report. Coordinated urban design and active transportation elements of the new crossing design. Prepared materials for Technical Advisory Committee meeting, Design Review Panel, and Public Information Centre.

Commercial Vehicle Inspection Facility (CVIF) Relocation – Wellington County, Ontario

Lead Environmental Planner for the relocation of the Truck Inspection Station along Highway 401 in Halton Region. Conducted an evaluation of different site alternatives to determine the preferred alternative, presented evaluation and study alternatives to various stakeholders including the public. Responsible for documentation of the environmental assessment according to the Ministry of Transportation Environmental Study Report (TESR) guidelines.

Detroit River International Crossing Study – Windsor, Ontario

Lead Environmental Planner for the Detroit River International Crossing Project, a bi-national study between



Expertise

- Stakeholder and Community Engagement
- Urban Transportation and Transit Planning
- Land Use Planning
- Environmental Planning

Education

- Graduate Certificate in Sustainable Community Planning and Design, Boston Architectural College, 2013.
- Master of City Planning, Boston University, 2000.
- B.A., Urban and Regional Planning, Ryerson University, 1994.

Certifications & Memberships

- Canadian Institute of Planners (RPP)
- American Institute of Certified Planners (AICP)
- Member, Women's Transportation Seminar
- Member, Ontario Professional Planners Institute
- Member, Canadian Institute of Planners

Background

2019 – Present | LEA Consulting Ltd.
Senior Project Manager

2016– 2019 | Stantec Consulting, Ltd.
Senior Planner

2013 – 2016 | Parsons Brinckerhoff (acquired by WSP in 2014)
Senior Transportation Planner

2011 – 2013 | HATCH
Senior Environmental Planner

2009 – 2011 | MMM Group (acquired by WSP in 2013)
Senior Planner

Windsor, ON and Detroit, MI. Responsible for managing a multi-disciplinary consultant team. Responsible for the development and implementation of context sensitive solutions concepts and land use analysis pertaining to the development of a new freeway, customs and inspection plaza and international crossing between Windsor, ON, and Detroit, MI. Conducted land use analysis to site a customs plaza adjacent residential and sensitive environmental areas. Developed content for two dozen context sensitive design workshops and incorporated public input into the design of the freeway, plaza and new crossing. Presented findings in Individual Environmental Assessment and public meetings and workshops.

2005 – 2009 | URS (acquired by AECOM in 2014)
Senior Environmental Planner

1999 – 2005 | HNTB
Environmental Planner

Bath U.S. Route 1 Feasibility Study – Bath, Maine

Environmental Planner for a feasibility study of multi-modal improvements in the U.S. Route 1 Corridor in Bath, Maine. Study involved examining various design options for the improvement or replacement of a two-lane viaduct, including widening the viaduct, modifying at-grade options, tunnel options, restoring passenger rail on new or existing alignments, and studying highway bypasses. Conducted land use, environmental, GIS analysis for the study. Moderated public workshops, aimed to generate ideas on what the roadway should look like, using context sensitive design approaches. Communicated workshop results to Steering Committee and incorporated comments into the final study report.

Niagara Escarpment Crossing Environmental Assessment – Niagara Region, Ontario

Senior Environmental Planner responsible for updating and reevaluated the 1997 Environmental Assessment study for the need of a new or improved crossing of the Niagara Escarpment. Conducted stakeholder consultation with Municipal, Provincial, agency advisory groups, and stakeholder groups. Conducted the land use, zoning and socioeconomic evaluation for the study, as part of the evaluation of alternatives.

Gorham Bypass Study and Environmental Assessment – Gorham, Maine

Land Use Planner responsible for the technical documentation and public consultation components of a two-lane, arterial bypass road of Gorham Town Centre. Vehicular and truck traffic congestion and pedestrian safety concerns required the development of a bypass of the town centre. Responsible for the land use, community facilities, environmental resources and the Geographic Information Systems (GIS) mapping and analysis of the study. Coordinated consultation events with the town of Gorham and with regional planning agency. Presented study results to the public and recorded study process and evaluation assessment in the Environmental Assessment.

Notre Dame Roundabout Environmental Assessment – Lakeshore, Ontario

Senior Environmental Planner responsible for the environmental documentation according to the Municipal Class Environmental Assessment Schedule 'B' process for the development and evaluation of alternatives for the roundabout design for the intersection of Notre Dame and West River Street in Lakeshore, ON. Coordinated and developed the evaluation matrix for the natural environment, archaeology, built heritage, air and noise studies, in order to determine which alternative had the least impact. Coordinated documentation of archaeological findings for a Stage 4 archaeological assessment.

Baudette-Rainy River International Bridge Replacement – Baudette, Minnesota

Senior Environmental Planner responsible for conducting a CEAA screening and Ministry of Transportation Environmental Study Report (TESR) for the replacement of the Baudette/Rainy River International Bridge on Highway 11 in Rainy River, Ontario and on Highway 72 in Baudette, Minnesota. The bridge provides access between the U.S. and Canada with 24-hour Port of Entry facilities. The recommended plan includes a new 5-span steel I-girder

structure located south and adjacent to the existing bridge. The study was carried out in accordance with the MTO Class Environmental Assessment for Provincial Transportation Facilities (2000) process for Group 'B' projects. Coordinated the *Project Description* with the Canadian Environmental Assessment agency to determine whether a federal environmental assessment would be required.

Transportation Master Plans | Key Project Experience

Yonge Street North Transportation Master Plan – Toronto, Ontario *Ongoing*

Senior Project Manager - Updated 2012 Transportation Master Plan to reflect existing transportation conditions, including two new subway station stops within the study area.

City of Orillia Multi-Modal Transportation Master Plan - Orillia, Ontario *2019*

Environmental Advisor responsible for ensuring that the Municipal Class Environmental Assessment (MCEA) process was followed; provided QA/QC on the draft and final report.

Town of Midland Multi-Modal Transportation Master Plan - Midland, Ontario *2019*

Environmental Advisor responsible for ensuring that the Municipal Class Environmental Assessment (MCEA) process was followed; provided QA/QC on the draft and final report.

Active Transportation Studies | Key Project Experience

Mid-Town in Focus – Toronto, Ontario

Senior Transportation Planner responsible for developing transportation strategies and initiatives, including proposed midblock connections, improving circulation patterns, rebalancing streets, and examining pedestrian and cycling opportunities for the Yonge and Eglinton (Midtown) area of Toronto. The recent growth in the Midtown area of Toronto has created the need for improved public realm facilities, with the goal of striking a balance between high-rises and open space to create a desirable place to live and visit. Created a blueprint for improving the public realm to meet diverse needs of residents, visitors and workers, in anticipation of continued residential growth in the mid-town area.

South of Eastern Strategic Direction – Toronto, Ontario

Senior Transportation Planner responsible for developing transportation solutions for the area South of Eastern Avenue in the city of Toronto. Developed a strategic direction for the South of Eastern area that focused on the economic development, urban design, and transportation policy for this under-utilized part of the city. Role included supporting the project team in all aspects of transportation planning to address the economic plan and public realm objectives and the recommended initiatives ensuring an integrated and sustainable Complete Streets approach, and ensuring that active transportation options are included into the overall transportation plan. Assisted in the identification of future roads/bridge, transit, trails and bike paths throughout the study area.

Function and Design of Heart Lake Road Corridor – Brampton, Ontario

Senior Transportation Planner for the Function and Design of Heart Lake Road corridor in the City of Brampton. The study looked to assess the current roadway structure and long-term function of Heart Lake Road with the intent of identifying opportunities to safely accommodate active transportation, while meeting other transportation demands. Developed screening evaluation process to help identify feasible alternatives, based on multi-modal transportation opportunities, social and cultural environment, and natural environment. Participated in stakeholder meetings where evaluation results and preferred alternative were recommended to the public.

Transit | Key Project Experience

Stage 2 ION LRT Transit Project Assessment Process (TPAP) – Cambridge, Ontario

Senior Environmental Planner for the Stage 2 Light Rapid Transit (LRT) Transit Project Environmental Process (TPAP) study connecting the City of Kitchener to the City of Cambridge. Strategically examined the previous alignment and developed screening evaluation process to help determine alternative alignments. Coordinated consultation with key stakeholders and technical advisors to determine alternative route alignments. Prepared key components of the background studies related to the environmental assessment. Developed written and graphic content for the Public Consultation Centres, social media messaging, and regulatory notices for the Region of Waterloo.

Hamilton B-Line Spur Line and Maintenance and Storage Facility Transit Project Assessment Process (TPAP) – Hamilton, Ontario

Lead Environmental Planning for the addendum to the Hamilton B-Line Spur Line and Maintenance and Storage Facility TPAP. Managed an integrated study team that included the City of Hamilton Rapid Transit staff to complete a Transit Project Assessment Process (TPAP) on the B-Line LRT spur line and maintenance and storage facility within the city of Hamilton. Responsible for the development of evaluation criteria, and the evaluation of the preferred alternative. Coordinated the specialist subconsultants technical reports.

Guidelines | Key Project Experience

Ontario Ministry of Transportation Land Use Planning Freight Guidelines

Senior Land Use Planner responsible for authoring the land use component of the Ministry of Transportation Provincial Freight Guidelines, a policy document aimed to assist municipal planners across the province in planning and preserving employment lands and freight-oriented land uses, a first of its kind in Ontario. Prepared freight guideline context for a number of land use issues, and developed planning strategies aimed to solve potential land use conflicts. Coordinated the urban design sections of the guidelines that are aimed to decrease the negative impact of freight-oriented land uses and transportation design issues.

High Speed Rail | Key Project Experience

Updated Feasibility Study of High-Speed Rail Service in the Quebec City-Windsor Corridor; Analysis of Environmental and Social Impacts, Quebec City – Windsor, Ontario

Senior Planner responsible for authoring the environmental and socioeconomic impacts for a high-speed rail (HSR) feasibility study aimed to assess the environmental feasibility of implementing a high speed rail line along the Quebec City to Windsor corridor. Reviewed relevant federal and provincial legislation related to railways and the environment; conducted a review of potential environmental and social issues that may interact with the HSR representative routes; evaluated potential sources of noise and vibration. Coordinated technical work of multi-disciplinary team. Presented study results and recommendations to Transport Canada representatives.

High Speed Rail Feasibility Study - Boston to Montreal – Boston, Massachusetts

Senior Planner responsible for documenting national environmental laws and regulations, security considerations of providing high speed rail service across an international border. Conducted a review of state and provincial (Quebec) environmental laws and regulations. Developed public meeting material explaining the challenges of minimizing delays at the border, and establishing high speed rail service in a corridor that has typographic challenges. Attended public meetings in the three participating states (Massachusetts, New Hampshire, Vermont), and in Montreal.

Sustainability | Key Project Experience

Canadian Green Building Council's Sustainable Communities Toolkit

Senior Environmental Planner responsible for providing peer review of the Canadian Green Building Council's Sustainable Communities Toolkit. Involved in developing a toolbox of programs in which municipalities across Canada could use to promote sustainability in targeted areas in their jurisdiction. The toolkit outlines methods for improving energy, water, natural environment, infrastructure, community planning, buildings and transportation sustainable planning.

Municipal Climate Change Action Plan, Annapolis County – Annapolis County, Nova Scotia

Senior Environmental Planner responsible for preparing the Municipal Climate Change Action Plan document. The Municipal Climate Change Action Plan examined ways to reduce greenhouse gas emissions and identify priorities for climate change adaption throughout Annapolis County, NS. Goals of the action plan included reviewing options for mitigation versus adaption, identifying risks and effectively manage risks on a municipal level. Focus of the plan was on half a dozen main issues that can be effectively mitigated.

Amy (Ahsun) Lee, P.Eng.

Manager, Standards and Compliance

Amy (Ahsun) is a Transportation & Development Engineer and Manager, Standards and Compliance at LEA Consulting Ltd. with over 17 years of experience working in a wide range of transportation industries for both the public and private sectors.

During Amy's eight years of employment at the Town of Richmond Hill, she was the Manager of Transportation and Site Plans, responsible for transportation and site plan specific development engineering matters. Her primary responsibilities included:

- Transportation planning studies such as transportation master plans, environmental assessments;
- Transportation policies and associated traffic and parking By-Laws;
- Transportation operational assessment and safety assessment;
- Development of approval processes for road occupancy permits/road closures;
- Transportation standards in zoning by-laws;
- Agreements such as servicing agreements, license agreements, third-party agreements, access agreements that are related to transportation and/or development activities with developers, landowners, other municipalities and/or agencies;
- Approval of various permits as per municipal by-laws in accordance with Municipal Act;
- Approval of transportation design and development engineering designs;
- Release of Letter of Credits and infrastructure assumption process; and,
- Traffic operations, safety issues, and traffic/parking complaints.

Combined with her many years of experience, she also served as Chairperson for the Transportation and Road Works Committee for Richmond Hill's Standards and Specifications Manual, transportation expert for special projects such as the Waste Management Design Standards, and expert witness at the Local Planning Appeal Tribunal hearings for Richmond Hill.

Prior to that, Amy worked in LEA Consulting Ltd. for both private and public sector clients. She was involved in transportation planning studies, traffic impact assessments, parking studies, preliminary design, traffic signal design, construction coordination and inspection.

Expertise

- Transportation engineering design solutions
- Municipal by-laws and permits
- Transportation planning
- Community/Residents communications
- Traffic control signal design

Education

- Honours B. A.Sc., Civil Engineering, University of Waterloo, 2004

Certifications & Memberships

- Professional Engineers Ontario, PEO

Background

2018 – Present | LEA Consulting Ltd.
Transportation & Development Engineer, Manager, Standards and Compliance

2010 – 2018 | Town of Richmond Hill
Manager – Transportation and Site Plans, Transportation Engineer, Development Coordinator

2003 – 2009 | LEA Consulting Ltd.
Transportation Analyst, Planner, Engineer

2003 | McCormick Rankin Corporation (WSP)
Transportation Engineering Junior Designer

2002 | Marshall Macklin Monaghan Ltd. (WSP)
Transportation Engineering Junior Designer

2001 | LEA Consulting Ltd.
Transportation Analyst

2000 | County of Peterborough
Survey Crew

Master Plan / Policy Studies - Key Project Experience

Richmond Hill Transportation Master Plan – *Technical Update 2014*

Responsibilities included project management including the consulting team as well as Town's steering committee; population/employment forecast confirmation; modelling output review; transportation policies; infrastructure planning review; development charge background study review; cost estimates for all capital projects; report write-up; attending Council meetings for approval.

Downtown Transportation and Parking Study

Responsibilities included project management including the consulting team as well as Town's steering committee; attending various meetings such as Council meetings, BIA meeting, and public meetings; traffic and parking forecast review; transportation standards in zoning by-law; developing design criteria for Downtown Linked System of Mews and Courtyards.

Region of Peel – Carpool Parking Lot Study

As a deputy project manager as well as a technical lead, delivered a living document that recommended strategies that provide guidelines how to initiate and implement the carpool parking lots in the Region of Peel. Responsibilities included coordination of various stakeholder meetings, preparation of meeting minutes, collection of data including traffic volumes, land use, and population density, development of strategies, analysis of region-wide data to select carpool lot locations, presentation to stakeholders, and report writing.

Transit Infrastructure Design-Build Projects – Key Project Experience

Yonge Street Bus Rapid Transit Project – Technical Advisory and Construction Oversight Services

As a project manager and lead for the transportation design and safety for Technical Advisory and Construction Oversight Services, responsible for technical advice to the Owner on matters related to intersection layout, safety, traffic operations, traffic control signal design, and traffic management for a 9 km section of Yonge Street. Through the project, tasks expanded to oversee non-conforming works, collision assessments, traffic operations assessment, legal drawing review, traffic signal activation, traffic by-law requirement, and construction cost review.

Woodbine GO Station (AFP) – Due Diligence, Design Development, and Approval Process

Working for both the design-build team and the financing team, developed the project requirement for the station design that would satisfy the agreement for the project through the development of station facility design for bus facility, pick-up/drop-off area, parking lots. To reduce the risk associated with the AFP project, presented various design options to Clients; identified required approval processes, turnaround times, and potential risks; developed the project design and construction schedule along with key milestone dates and deliverable; any property acquisition requirements; constructability; construction staging requirement; and project constraints and strategy to manage/reduce the risks.

Steeles/Stouffville GO Rail Grade Separation – Detail Design and Permit Application Review for Third Party

As a technical advisor to the road authority, responsible for reviewing the road design including the construction management plan and traffic management plan prepared by Metrolinx' contractor on behalf of the City. Through the process, provides advice to ensure that applicable standards and legislations are met. As a technical advisor, provided a guidance so that City can engage required divisions to process and approve the required permits in a timely manner. As part of the project, the primary focus is to minimize traffic impacts during the construction while complying with the project agreement and applicable design standards which will construct a grade separation bridge for the railway while making the provision for the future LRT. Where requirements in the project agreement were not implementable, context sensitive design solutions were provided based on consideration for constructability, cost benefits, safety, and operations.

Design Standard Development Project Experience

Richmond Hill Waste Management Collection Standards

Responsible for transportation components of the standards, her involvement included developing terms of reference for engineering works; providing directions for the engineering works; establishing waste management standards such as loading space sizes, pavement structural requirements, and driveway width requirements; providing recommendations to risk managements; providing recommendations to executive committee members of Materials, Standards, and Specifications for approval.

Standards and Specifications for Town of Richmond Hill – Transportation and Road Works

During her term as Chairperson of Transportation and Road Works Committee for Town's Standards and Specifications Manual, created a section on on-road bicycle facilities and multi-use facilities. These standards provide details on the geometric requirements, pavement structural requirements, pavement marking and signage requirements.

Development Project Experience

The following involved the studies of the impact of traffic and the effects and changes of transportation routes and methods in the designated areas:

- Markham YMCA – Traffic Impact Study;
- Commercial Development in Wasaga Beach – Traffic Impact Study and Preliminary Design
- Mixed-Use Development at Markham/Denison – Traffic Impact Study;
- Markham/Steeles Commercial Development, Toronto – Traffic Impact Studies for site plan applications and Transportation Study for Master Environmental Servicing Plan;
- Markham/Steeles Commercial Development, Markham – Traffic Impact Study, Preliminary and Detail Design for Improvements and Contract Administration
- The Metropolitan, Toronto – Traffic Impact Study;
- Leslie/John Birchall, Richmond Hill – Traffic Impact Study, Parking Study, Functional Design, Traffic Control Signal Design, Contract Administration;
- Dundas/Oak Park, Oakville – Traffic Impact Study, Access Operations Review, Functional Design
- Queensway/Donly, Norfolk County – Traffic Impact Study, Access Operations Review, Functional and Detail Design, Traffic Control Signal Design
- Redevelopment of Don Mills Centre, Toronto – Transportation Study;
- Neighbourhoods of Castlemore Crossing, Brampton – Transportation Study;
- North Leslie Secondary Plan, Richmond Hill – Transportation Study;
- Wilson Avenue Revitalization Study, Toronto;
- Toronto-York Spadina Subway Extension Project - Steeles and Finch Station Design;
- Yonge/Dundas Parking Study Update, Toronto;
- Traffic Control Signal Design and Contract Administration for private entrances, York Region;
- Woodside Square Mall Redevelopment
- 5590 Tenth Line, Mississauga, Traffic Study, Functional Plan, Detail Design;
- 2705 Elgin Mills Road East, Markham, Transportation Impact Study, Parking Study, Functional Plan, Detail Design
- 55 Eastern Avenue, Toronto, Transportation and Parking Study
- 65 Silver Springs Blvd., Toronto, Transportation and Parking Study

Kelsey A. Waugh, P.Eng., RSP1

Transportation Engineer

Kelsey Waugh is a Transportation Engineer with the Transportation Planning and Engineering Department at LEA Consulting Ltd. In addition to being a registered Professional Engineer (P.Eng.) with the Province of Ontario and a certified Road Safety Professional Level 1, she is the current President of the Institute of Transportation Engineers Toronto Section.

Since joining LEA in 2014 she has gained experience in both large-scale public sector project coordination and private sector transportation planning studies. Her duties have included the preparation of Environmental Assessment study reports, transportation demand management studies and multi-modal analysis and report writing. Her active transportation experience includes the development and evaluation of pedestrian and cycling facilities in both urban and suburban areas.

Kelsey was heavily involved with the Steeles Avenue East Grade Separation Environmental Assessment, Peel Region Cordon Count Study and is currently the deputy project manager for the Ingram Grade Separation Feasibility Study.

Kelsey has also been involved with the preparation and management of several Transportation Impact Studies for both urban and rural settings. Through these studies, she has been responsible for the supervision of the data collection and coordination with municipal and regional staff, in addition to the traffic, transit and active transportation analysis and report writing.

Key Project Experience

Ingram & Castlefield Grade Separation Feasibility Study – Toronto, ON *2019-Ongoing*

Responsible for development of feasibility study for grade separations, including assessment and evaluation of multiple locations and design options.

Keele Finch Plus Transportation Study Phase 2 – Toronto, ON *2017-2020*

Responsibilities included project coordination, review of multi-modal and Vision Zero application, and development of the refined network in support of new higher order transit.

Steeles Avenue East Grade Separation Environmental Assessment – Toronto, ON *2015 – 2017*

Responsible for project coordination and management of sub-consultants, review of traffic analysis and existing conditions. Conducted the development and evaluation of alternative solutions, alternative design options, and the preferred design for the EA.

Expertise

- Public & Private Transportation Planning
- Grade Separation Studies
- Safety Analysis
- Transportation Impact Studies
- Report Writing
- Traffic Analysis (Synchro 9.0)

Education

- B.A.Sc., Civil Engineering, University of Waterloo, 2015

Certifications & Memberships

- Professional Engineer, Professional Engineers Ontario (PEO)
- Road Safety Professional Level 1
- Institute of Transportation Engineers - Toronto Section President
- Young Professionals in Transportation (YPT) Toronto Chapter
- Municipal Class Environmental Assessment Workshop, May 2017

Background

Apr. 2019 – Present | LEA Consulting Ltd.
Transportation Engineer

2015 – 2019 | LEA Consulting Ltd.
Transportation Analyst

Sept. – Dec. 2014 | LEA Consulting Ltd.
Transportation Engineering Assistant

Jan. – Apr. 2014 | City of Toronto
Urban Design / Streetscape Assistant, Pedestrian Projects, Transportation Services

Apr. – Aug. 2014 | City of Burlington
Infrastructure Technologist, Transportation Services

Steeles Avenue East Grade Separation Detailed Design Review – Toronto, ON *2017 - 2020*

Project Coordinator in continuation of the 2017 Environmental Assessment for the City of Toronto. As part of the Owner's Engineer team, responsibilities included detailed design review, construction management plan review and permit coordination. Also responsible for the coordination and submission of design review comments on 30%, 60%, 90% and 100% designs.

Richmond Hill Residential Parking Permit Study – Town of Richmond Hill *2017 – Ongoing*

Responsible for project coordination and policy development, including preparation of surveys for public engagement, jurisdictional best practice review, report and presentation preparation.

Dufferin Street Bridges Construction Management Plan – City of Toronto *2018 - Ongoing*

Transportation Analyst responsible for data collection and analysis. Analysis included reviewing traffic impacts of the closure of Dufferin Bridge for construction, and sensitivity analysis of 3 lane closure options.

Peel Region Cordon Count Study – Regional Municipality of Peel *2016*

Project Lead responsible for project coordination and management of 3 supervisors and a team of over 70 surveyors in addition to data analysis and quality review of the collected data. Was also responsible for report writing.

3000 Dufferin Avenue, Residential Development – Toronto, ON *2016 – 2020*

Responsible for coordination of the transportation impact study, transportation demand management plan and avenue study including: review of parking requirements, site circulation, traffic and parking surveys, procurement of existing transit information, future traffic and transit forecast, and preparing reports for the proposed development.

Courtice Town Centre, Multi Use Development – Region of Durham *2016 – 2019*

Responsible for coordination of transportation impact study including: review of parking requirements, site circulation, traffic and parking surveys, procurement of existing transit information, future traffic and transit forecast, and preparing reports for the proposed development.

GTHA Wide Cordon Count Report – Region of York *2017*

Responsible for compiling and analyzing large volumes of traffic and truck cordon count data, GTHA wide. The report provides context and long-term travel treads throughout the Greater Toronto and Hamilton Area.

203 College Street, Residential and Retail Development – Toronto, ON *2015 – Present*

Responsible for coordinating transportation impact study including: review of parking requirements, site circulation, procurement of existing traffic and transit information, future traffic and transit forecast, and preparing reports for the proposed development. Also responsible for review of a Construction Management Plan.

850 Elgin Mills, Residential Development – Richmond Hill, ON *2016*

Responsible for coordinating traffic impact study including: review of parking requirements, procurement of existing traffic information, future traffic forecast, transportation demand management and preparing reports for the proposed development.

Following is a list of other representative projects that Kelsey has undertaken:

- 2100 Lakeshore Road, Multi-Use TIS and TDM Plan – Burlington, Ontario
- 701-508 Winston Churchill Boulevard, TIS and Functional Planning – Mississauga, Ontario
- 1182 & 1221 King Street West, Mixed Use Development TIS and TDM – Toronto, Ontario
- TRCA New LEED Office Building, TIS, Parking and TDM Plan – Toronto, Ontario
- 200 John Street, Hotel and Residential Development, TIS - Niagara-on-the-Lake, Ontario
- 14 Duncan Street, Multi-Use Development TIS – Toronto, Ontario
- 100 Simcoe Street, Multi-Use Development TIS – Toronto, Ontario
- 4800 Yonge Street, Multi Use Development – Toronto, ON
- 1435 Cornwall Road Office Development – Oakville, Ontario
- Parkview Property Residential Development TIS – Markham, Ontario
- Mount Forest Canadian Tire Retail Development TIS – Mount Forest, Ontario
- Brampton - Toronto Gore Density Review, - Brampton, Ontario
- 1000 Elgin Mills, Residential Development TIS – Richmond Hill, Ontario
- 3237 Bayview Avenue TIS - Toronto, Ontario
- IKEA Burlington Transportation Density Review - Burlington, Ontario
- Memorial Avenue Superstore Traffic Review - Thunder Bay, Ontario
- Branksome Hall Independent School for Girls Traffic Operations Review – Toronto, Ontario

Sameh Salib, Ph.D., P.Eng., BDS, PE

Project Lead, Bridges and Transit Structures

Dr. Salib has over 25 years of experience in project leadership, business development, structural analysis / design and contract administration along with university research / teaching. He is also involved in project management, proposal preparation, and engineers' mentorship. He acquired significant expertise in the design of new highway bridges and transportation structures such as tunnels and subway stations for Rail, Auto and LRT traffic as well as the evaluation and rehabilitation of existing structures. Also, he is experienced in structural collaboration for transportation planning, environmental assessment and grade separation studies.

Sameh is knowledgeable about various standards / design codes (Canadian, American and European) and both conventional and innovative construction materials. He assumed the role of a Technical Director of the structural applications of Advanced Composite Materials (ACM) throughout his career. With his experience, he has led the structural design of many high-profile projects, in Canada and abroad, that received national and international awards for their innovation and excellence in structural design.

Dr. Salib is also an adjunct professor, industrial advisor and guest speaker at various universities and educational organizations in Canada and abroad. He published several technical papers through international journals and conferences. Further, he is a member of various standards/ design codes technical subcommittees in Canada and USA.

Transportation Planning / EA Study Projects

North Brooklin MCEA, City of Toronto, ON *2020-Ongoing*

Transportation planning / Environmental Assessment (EA) study for multi-square kilometers of land development. Carried out **Structural Lead** duties and performed the following:

- Perception of viable structure options at roads and water crossings
- Coordination with other disciplines
- Developing high level comparison / evaluation matrix for viable structure options
- Providing constructability/feasibility comments, optimum structure configuration and construction cost estimate

Castlefield Avenue/Ingram Extension – Grade Separation Feasibility Study, City of Toronto, ON

Investigation of grade separation options between existing railway traffic and vehicular/pedestrian traffic of Castlefield Avenue and proposed Ingram Extension.

Expertise

- Project Leadership
- Business Development
- Structural Analysis / Design
- Contract Administration
- Rail and Auto: Bridges, Tunnels, Subway Stations

Education

- Ph.D., Civil Engineering, University of Windsor, 2001
- M.Sc., Civil Engineering, 1996
- B.Sc., Civil Engineering with Honours, 1991

Certifications & Memberships

- Professional Engineer, Professional Engineers Ontario (PEO)
- Building Design Specialist (BDS), Professional Engineers Ontario (PEO)
- Professional Engineer (P.Eng.), Association of Professional Engineers and Geoscientists of Alberta (APEGA)
- Professional Engineer (P.E.), Board of Professional Engineers of Michigan, USA
- Member, American Society of Civil Engineers (ASCE), USA
- Professional Engineer, The Egyptian Engineering Syndicate, Egypt
- Member, American Society of Civil Engineers (ASCE) technical subcommittee for Retrofit of Structures under Dynamic Loads
- Member, Canadian Highway Bridge Design Code (CHBDC) technical sub-committees for Fibre Reinforced Structures (section 16) and for Buried Structures (section 7)

Background

2019 – Present | LEA Consulting Ltd.
Project Lead

Carried out **Structural Lead** duties and performed the following:

- Perception of viable structure options including passover (bridges) and underpass (tunnels)
- Investigation of structure alternatives (steel, precast concrete, post-tensioned systems...)
- Developing high level comparison / evaluation matrix for viable structure options
- Providing constructability/feasibility comments, optimum structure configuration and construction cost estimate

6th Line Grade Separation and New GO Station, Innisfil, ON

Investigation of grade separation options between existing railway traffic and vehicular/pedestrian traffic of Castlefield Avenue and proposed Ingram Extension. Carried out **Structural Lead** duties and performed the following:

- Perception of viable structure options including passover (bridges) and underpass (tunnels)
- Investigation of structure alternatives (steel, precast concrete, post-tensioned systems...)
- Developing high level comparison / evaluation matrix for viable structure options
- Providing constructability/feasibility comments, optimum structure configuration and construction cost estimate

Don Mills Crossing MCEA, City of Toronto, ON

Transportation planning / Environmental Assessment (EA) study for connecting city trail on each side of a multi-track CN railway route via an approach ramp on each side and a bridge crossing over the railway. Carried out **Structural Lead** duties and performed the following:

- Supervising the project bridge team
- Coordination with the City, CN Rail authority and the project planner/ architect
- Investigation of bridge alternatives (steel, precast concrete, post-tensioned systems...)
- Investigation of approach ramps alternatives (steel, concrete, RSS walls…)
- Providing constructability/feasibility comments, optimum structure configuration and construction cost estimate
- Developing high level comparison / evaluation matrix for bridge and ramp alternatives

2009 – 2019 | Delcan (Parsons)
Principal Engineer

2006 – 2009 | MMM Group (WSP)
Senior Structural Engineer

2004 – 2006 | Trow Associates (exp.)
Senior Structural Engineer

2001 – 2004 |HMA Consultant
Structural Engineer

1997 – 2001 |University of Windsor
Research Associate

1996 – 1997 |BESIX Construction
Structural Engineer

1992 – 1996 |WDO International Consultants
Structural Engineer

MTO Projects | Key Project Experience

MTO Pioneer and Complex Projects

Groundhog River Bridge, Northeastern Region *2019-Ongoing*

Design-Build contract for New continuous 4 Spans (40m ~ 50m) semi-integral abutment bridge; precast concrete deck panels over steel girders; HP steel piles foundations for abutments and concrete caissons socketed in bedrock for piers.

Carried out design lead/ QC duties; including

- Providing guidance and supervision for LEA's bridge team during design phase
- Performing full independent analysis and design
  - Developing 3D-FEM for the purpose of general structural analysis and staged construction analysis
  - Performing structural design checks
  - Reviewing drawings and developing new details

- Optimizing the design of the precast concrete panels
- Preparing conceptual design for temporary shoring of caissons during construction
- Developing project specifications
- Proposing the implementation of High Strength/Durability Steel Bars (ChromX Bars; 600+ MPa yield strength) for the **First Highway Bridge in Ontario**
  - Review of related literature review and case studies
  - Coordination with bars manufacturer, USA consultants used these bars recently and the project contractor
  - Developing a design criterion based on principals of reinforced concrete design/ strain compatibility theories to maximize utilization of bars while complying with Canadian standards (CHBDC)
  - Providing comparison between conventional reinforcing bars and proposed bars regarding both structural capacity and cost

Duchesnay Creek Bridge, Northeastern Region *2019-Ongoing*

First Highway Bridge in Ontario to introduce Glulam girders; New continuous 3 Spans (20m ~ 39m) semi-integral abutment bridge; concrete deck over arched Glulam girders; to be supported by steel tubes filled with reinforced concrete socketed in bedrock.

Carried out design QC duties; including

- Providing guidance and supervision for LEA's bridge team during design phase
- Performing full independent analysis and design for the substructure/ foundations

"In a project which interweaves economic opportunities for First Nations, nurtures the enhanced use of timber, and pays tribute to this province's bridge history" (quoted from the Daily Commercial News by ConstructConnect)

Highway 401 –Speed River Bridges, West Region *2016-2018*

First Highway Bridge in Canada with stainless steel ASTM A1010 alloy girders and First Highway Bridge in Ontario utilizing new steel in girders in about 40 years. The bridge is 3-continuous spans (18~28m) semi-integral abutment structure with composite concrete-A1010 steel girders superstructure.

- Led the project regarding research / developed design guidelines
- Performed a literature review (standards, design guidelines, papers, etc.) for the structural applications of stainless steel, in general, and of the recently developed ASTM A1010 alloy, in particular
- Contacted the US transportation jurisdictions recently utilized A1010 steel girders in bridges (such as Oregon DOT) to exchange experience and background
- Concluded the uncertainties regarding the A1010 structural behavior / missing design guidelines for the subject application
- Developed an experimental program plan to verify the expected performance of the girders
- Coordinated with Canadian universities / Professors with related experience to perform the subject experimental program
- Guest speaker at different engineering organizations / transportation jurisdictions to present the bridge / subject A1010 application (such as MTO-Head office, St. Catharines and Canadian Institute of Steel Construction, CISC-Ontario);
- Prepared, published and presented technical papers regarding the subject project at different international conferences.

Project Awards:

- *Award of Merit, Canadian Institute of Steel Construction - Ontario, 2017*

Highway 24 - Whitemans Creek Bridge, West Region *2010-2011*

First project in the region that utilized Accelerated Bridge Construction (ABC) methodologies along with innovative materials such as Fibre-Reinforced Polymers (FRP) and Ultra High-Performance Concrete (UHPC). The bridge has a single span (40m) with the superstructure of steel girders and full depth precast concrete deck panels reinforced with GFRP bars and joined with UHPC.

- Led the project regarding research / developed design guidelines

- Performed a literature review (standards, design guidelines, papers, etc.) for the bridge applications of GFRP bars / UHPC
- Developed 3D-FEM for the purpose of general structural analysis, and staged construction analysis
- Prepared design calculations, details and specifications of the GFRP-Reinforced concrete panels
- Reviewed the results of the experimental program conducted to evaluate the performance of short spliced GFRP bars in UHPC joints
- Prepared, published and presented technical papers regarding the subject project at different international conferences.

Project Awards:

- *Innovative Structural Design Award, the Ontario / Canada Concrete Association (OCA / CCA), 2012*

Highway 403 at Aberdeen Road Bridge, West Region *2010*

The first multi-span highway bridge in North America that was replaced using rapid bridge replacement technology. The project involved an existing 4 spans bridge (16~26 m, each) of steel girders and concrete slab to be replaced with new spans through entire spans moving (using Self-Propelled Modular Transporters; SPMT) for middle spans and jacking / sliding of the entire exterior spans (using temporary jacks and frames adjacent to existing spans);

- Worked as a collaborator engineer with the heavy lift subcontractor to review / co-stamp
  - Structural analysis, design calculations and details prepared by the design engineer
  - Shop drawings and proposed movement / sliding phases

Described by the journal of the Ministry of Transportation Ontario (MTO), Road Talk, Spring 2011, Vol. 17, Issue 2 as "Aberdeen Avenue in Hamilton serves as a major access to Highway 403 and its replacement marks a new milestone for MTO – the first multi-span highway bridge to be replaced in North America using rapid bridge replacement technology."

MTO Prestressed Concrete Bridges

Lily River Bridge, Ontario, Canada *2019*

New single span (30m) integral abutment bridge (to replace existing bridge); concrete deck over CPCI box girders; HP steel piles for foundations.

Carried out design QC duties; including

- Providing guidance and supervision for LEA's bridge team during design phase
- Performing full independent analysis and design
  - Developing 3D-FEM for the purpose of general structural analysis and staged construction analysis
  - Performing structural design checks
  - Reviewing drawings and developing new details

Nagagamisis Narrows Bridge, Ontario, Canada *2019*

New single span (32m) integral abutment bridge (to replace existing bridge); concrete deck over CPCI box girders; HP steel piles for foundations.

Carried out design QC duties; including

- Providing guidance and supervision for LEA's bridge team during design phase
- Performing full independent analysis and design
  - Developing 3D-FEM for the purpose of general structural analysis and staged construction analysis
  - Performing structural design checks
  - Reviewing drawings and developing new details

Post-Tensioned Bridges

Highway 11-Katrine and Burk's Falls, Ontario, Canada (Seismic Zone):

Mahdi Boghaie

Transportation Designer

Mahdi Boghaie is a Transportation Designer with LEA. Mahdi has over 12 years of experience in transportation planning and engineering. He has been involved in preliminary and functional designs, rehabilitation, and Environmental Assessment studies for local and regional municipalities. Mahdi is proficient in the use of AutoCAD Civil 3D, MicroStation V8i, and Power InRoads.

Key Project Experience

Lakeview Boulevard Road Reconstruction – Town of Ajax *2019 - 2020*

Road Designer for the detailed design of Lakeview Boulevard from Pickering Beach Road to Poplar Avenue and from Maple Avenue to Shoal Point Road including off-road bike path.

Church Street Drainage Improvements – City of Richmond Hill *2019 - 2020*

Municipal Designer for the detailed design of Church Street road improvements from Major Mackenzie Drive to Center Street.

MMS Sidewalk Inspection – City of Richmond Hill *2019*

Project Manager for the inspection of sidewalks in the City of Richmond Hill, to record and report all the deficiencies to the City for maintenance purposes.

Lakeside Crescent Drainage Improvements – City of Richmond Hill *2019 - 2020*

Municipal Designer to improve Lakeside Crescent drainage by proposing temporary subdrain and swale.

Bass Pro Mills Drive Extension – City of Vaughan *2017 - 2018*

Road Designer for the detailed design of the Bass Pro Mills Drive extension from Romina Drive to Jane Street to support future development intensification in the area. Bass Pro Mills Drive is a major collector road that currently extends from Highway 400 to Romina Drive. The functional design for the proposed road extension included a four-lane urban cross-section; multi-use asphalt trail to accommodate pedestrian, cyclist, and wheelchair usage; landscaped boulevards; new storm sewers to accommodate proposed road drainage and receiving areas from development; new watermain and sanitary sewers along the corridor including connections to existing services at Romina Drive and the east side of Jane Street; installation of future traffic signal provisions at Romina Drive intersection; and traffic signal modifications at the Jane Street intersection. The project required extensive coordination with impacted stakeholders, including area developers and York Region, to ensure adjacent works were seamlessly incorporated into the final design.

King Street East Bridge Rehabilitation – Peel Region *2019*

Designer responsible for the road staging design component associated with the bridge rehabilitation of two road structures over the Humber River in the Town of Caledon. The scope of rehabilitation works included removal of existing asphalt (bridge deck and approaches) and waterproofing (bridge deck); removal and replacement of barriers

Expertise

- Transportation Design
- Rehabilitation
- Environmental Assessments

Education

- Civil Engineering Technology, Seneca College, 2007.

Certifications & Memberships

- Ontario Association of Certified Engineering Technicians and Technologists (C.E.T) - *Working*

Background

2020 – Present | LEA Consulting Ltd.
Transportation Designer

2019 – 2020 | TMIG
Transportation Designer

2017 – 2019 | Ainley Group
Transportation Designer

2007 – 2017 | WSP
Transportation Designer

and deck drains; concrete removal and patching of sidewalks, bridge deck (top and soffit), and girders; replacement of bearings; elimination of vertical expansion joints through conversion to semi-integral abutment (requiring full depth removal and replacement of ends of bridge deck and portions of ballast walls and wingwalls); concrete removal, patching, and crack injection of abutments and wingwalls; addition of approach slabs at both ends of the bridge; tree removal and brush clearing adjacent to bridge; replacement of steel beam guide rail on approaches; and waterproofing of bridge deck and pave bridge deck / approaches.

Centennial Drive and Front Street Reconstruction EA – City of Orillia *2017 - 2018*

Designer responsible for coordinating utility stakeholders and existing infrastructure services that were impacted by the design of various works in the Centennial Drive Area and Front Street corridors. Although issued as two separate assignments, these projects were carried out in parallel as to complete a Schedule 'C' EA along both road corridors. The project included detailed design to meet the City's expectations for improvements to roadway operations, parking facilities, trails, active transportation, and enhanced landscape and streetscape features. The projects also involved modifications to the existing municipal services (i.e., water and sanitary sewer) to address current deficiencies and conflicts with the proposed area improvements. Mahdi also assisted with finalizing the contract design drawings.

Edward Street Extension Schedule 'C' EA – Town of Whitchurch-Stouffville *2017*

Designer responsible for developing options and design alternatives for the completion of the Schedule 'C' Municipal Class EA of the Edward Street extension from Harold Avenue to Millard Avenue for an approximate distance of 270m. The project involved extensive stakeholder consultation and engagement with area residents, businesses, school board, and a major GO Transit hub. Key factors that were evaluated included mitigating environmental impacts, improvements to connectivity for pedestrians and cyclists to the downtown area and extending the life cycle of the existing pavement condition to the south.

Steeles Avenue / Finch Avenue, Steeles Avenue / Kennedy Road, and Dixie Road / Mid-Way Boulevard Intersection Improvements – Peel Region *2013 - 2015*

Designer for the EA and detailed design of intersection improvements and installation of bus bays and shelters. Responsibilities included DTM creation and road cross-section design using InRoads software, geometric design, construction staging / detours, drafting, traffic signing, and quantity calculations.

Mayfield Road EA – Peel Region *2010*

Designer for the Mayfield Road EA from Chinguacousy Road to Heart Lake Road, which consisted of road widening and intersection improvements. Responsibilities included DTM creation and road cross-section design using InRoads software, drafting various alternatives, geometric design, and quantity calculations.

Leslie Street EA – York Region *2008*

Designer for the Leslie Street EA from Wellington Road to Mulock Drive, which consisted of road widening and intersections improvements. Responsibilities included DTM creation and road cross-section design using LDD software, geometric design, drafting, and quantity calculations.

Steeles Avenue EA – Peel Region *2009*

Designer for the Steeles Avenue EA at Finch Avenue and Highway 50, which consisted of intersection improvements, and bus bay and shelter design. Responsibilities included DTM creation and road cross-section design using LDD software, geometric design, construction staging / detours, drafting, and quantity calculations.

QEW EA Study from Mountain Road to Central Avenue – Fort Eerie *2007*

Designer for the QEW EA study, which consisted of highway widening, redesign of ramps and interchanges, and steel beam guiderail replacement. Responsibilities included DTM creation and highway cross-section design using LDD software, geometric design, drafting, quantity sheets and quantity calculations.

Mahdi Boghaie

Transportation Designer

Bethesda Road Reconstruction – Town of Whitchurch-Stouffville *2010*

Designer responsible for coordinating with the utility companies to identify conflict areas and develop relocation strategies and assisting in the preparation of the final contract drawings. The project involved reconstruction of approximately 10km of Bethesda Side Road, from east of Highway 404 to Highway 48 and from Tenth Line to York-Durham Line (Regional Road 30), to improve the pavement ride quality to an acceptable standard, increase the pavement strength, treat / eliminate frost heaves and distortions, improve drainage, and reduce maintenance demands. The project involved a public consultation process by holding a Public Information Centre to gather public comments on the alternative solutions for improving the road corridor.

Countryside Drive Widening – City of Brampton *2011 - 2013*

Designer responsible for DTM creation and grading design using InRoads software, geometric design, construction staging / detours, drafting, traffic signing, and quantity calculations. The project consisted of widening and intersection improvements.

Main Street and Highway 48 – Town of Whitchurch-Stouffville *2007*

Designer for the detailed design of intersection improvements for Main Street and Highway 48, responsible for DTM creation and road cross-section design using LDD software, geometric design, construction staging / detours, drafting, traffic signing, quantity sheet, and quantity calculations.

Highway 11 Bridge Rehabilitation at White Clay, North Wicklow and Kendall Creeks – City of Temiskaming Shores *2009*

Designer on the Highway 11 bridge rehabilitation at White Clay, North Wicklow, and Kendall Creeks. This project involved a bridge relocation plan, road staging, and realignment. Responsibilities included highway cross-section design using LDD software, construction staging / detours, and drafting.

James Snow Parkway Detail Design – Halton Region *2008 - 2009*

Designer for the detailed design of James Snow Parkway, including the draft and design of new road connection and intersection improvements. Responsibilities included DTM creation and road cross-section design using LDD software, geometric design, drafting, and quantity calculations.

Lakeridge Road and Goodwood Road Detail Design – Durham Region *2008 - 2009*

Designer for the detailed design of Lakeridge Road and Goodwood Road, including intersection and road improvements. Responsibilities included DTM creation and road cross-section design using LDD software geometric design, drafting, and quantity calculations.

Rapid Transit EA Design – City of London *2016 - 2017*

Transit Designer for this project involving LRT and BRT design, including road and intersection improvements and an underpass transit tunnel. Responsibilities included DTM creation and road grading cross-section design using InRoads software, developing various design alternatives, and quantity calculations.

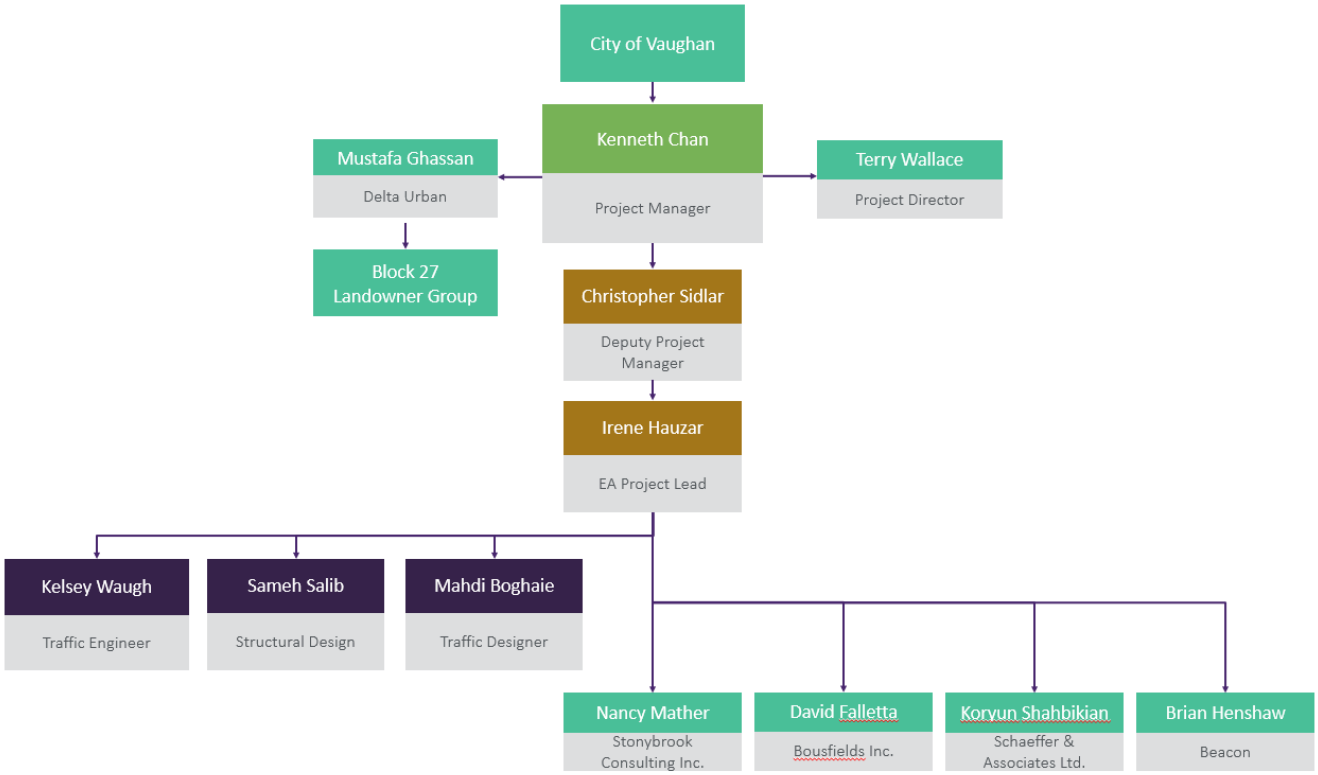
Queen Street, Steeles Avenue, and Bovaird Drive Zum AcceleRide Installation Detailed Design – City of Brampton *2014 - 2017*

Designer for the detailed design of this project which consisted of the construction of major station stops, incorporation of transit signal priority (TSP), emergency vehicle pre-emption (EVP), public service network (PSN) fibre optic, and WiFi technology between station stops. Extensive coordination between local utility companies, City of Brampton IT, and Peel Traffic staff was required to achieve the successful delivery of this transit expansion. Responsibilities included DTM creation and grading cross-section design using InRoads software, geometric design, construction staging / detours, drafting, traffic signing, and quantity calculations.

Miranda Liu is a Transportation Analyst in the Transportation Planning and Engineering Group with LEA Consulting Ltd. She

ATTACHMENT 2

Organizational Chart


City of Vaughan
Kenneth Chan
Project Manager
Mustafa Ghassan
Delta Urban
Terry Wallace
Project Director
Block 27
Landowner Group
Christopher Sidlar
Deputy Project Manager
Irene Hauzar
EA Project Lead
Kelsey Waugh
Traffic Engineer
Sameh Salib
Structural Design
Mahdi Boghaie
Traffic Designer
Nancy Mather
Stonybrook Consulting Inc.
David Falletta
Bousfields Inc.
Koryun Shahbikian
Schaeffer & Associates Ltd.
Brian Henshaw
Beacon

ATTACHMENT 3

Schedule

Block 27 Collector Roads EA Schedule

	Q2 2021				Q3 2021												Q4 2021												Q1 2022												Q2 2022								
Month	Jun				Jul				Aug				Sept				Oct				Nov				Dec				Jan				Feb				Mar				Apr				May			
Week#	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Task #1: Study Design																																																		
Study Design																																																		
Consultation Plan																																																		
Indigenous Consultation Plan																																																	
Project Team Meeting #1: Start-up																																																	
Task 2: NVNCTMP Phase 1 and 2 Review																																																	
Phase 1 (Problem or Opportunity Statement) Review																																																	
Phase 2 (Alternative Solutions) Review																																																	
Deliverable: Technical Memo #1 - Phase 1 and 2 Review																																																	
Draft Tech Memo #1																																																	
City Review																																																	
Final Tech Memo #1																																																	
Stakeholder Circulation (Indigenous Communities and TRCA)																																																
Project Team Meeting #2: Existing Conditions and Background Review																																																
Task #3: Design Concept Development																																																	
Evaluation Criteria Development																																																	
Design Concept Development																																																	
City Review																																																	
Project Team Meeting #3: Design Development and Evaluation Criteria																																																
TAC Meeting #1- Design Development and Evaluation Criteria																																																
Stakeholder Meeting #1																																																
Task #4: Evaluation of Alternative Designs																																																	
Calculate Measures for Evaluation																																																
Prepare Evaluation Matrix and Select Preliminary Preferred Solution																																																
Task #5: Identification and Assessment of the Preferred Alternative Design																																																
Design Development																																																
Identification of Mitigation Measures and Site Investigations																																																
Deliverable: Technical Memo #2: Preferred Alternative Design																																															
Draft Tech Memo #2																																															
City Review																																															
Final Tech Memo #2																																															
Project Team Meeting #4: Alternative Designs and Mitigation																																															
TAC Meeting #2- Identification and Assessment of the Preferrred Alternative																																															
TRCA Circulation																																															
Task #6: Implementation and Construction Phasing Plan																																																
Phasing Plan Development																																																
Project Team Meeting #5: Implementation and Construction Phasing																																															
Task #7: Public and Stakeholder Consultation: Public Information Centre (PIC) #1																																															
Preparation for PIC #1																																															
Project Team Meeting #6: PIC #1																																															
TAC Meeting #3: PIC #1																																															
Public Information Centre (PIC) #1																																															
Task #8: Functional Design Report																																															
Prepare Functional Design Report																																															
Project Team Meeting #7: Functional Design																																															
TAC Meeting #4: Functional Design																																															
Stakeholder Meeting #3: Functional Design																																															
Task #9: Environmental Study Report																																														
Draft ESR																																															
City Review																																															
Task #10: Finalize Environmental Study Report																																															
Finalize ESR																																															
Council Presentation																																															
Task #11: Part II Orders																																															
Responses to Part II Orders																																															
Prepare Amended ESR																																															
Task #12: Project Management																																															
Bi-Weekly Conference Calls																																															
Deliverable: Monthly Progress Reports																																															

Legend

- Task Time
- Review Period
- Project Team Meeting
- TAC Meeting
- Stakeholder Meeting
- PIC/Council Meeting

NOTE: the included schedule is preliminary and subject to confirmation during the Study Design phase