MINUTES OF MEETING

CLIENT	:	Halton Region
PROJECT	:	Class Environmental Assessment Study for Ninth Line (Regional Road 13) Transportation Corridor Improvements from Dundas Street (Regional Road 5) to 407 ETR (Express Toll Route)
MEETING	:	Conservation Halton
DATE OF MEETING	:	April 20, 2016, 10:00am
LOCATION	:	Halton Region, 1151 Bronte Road, Oakville, Ontario Scotch Block/Merton Room
ATTENDEES	:	**Conservation Halton** Sarah Matchett, Aquatic Planning Ecologist Richard Baxter, Terrestrial Planning Ecologist Paul Bond, Environmental Planner **Halton Region** Darryl Young, Project Manager Jeffrey Reid, Project Director Matt Krusto, Transportation Planning **Golder Associates (Golder)** Christopher Davidson, Surface Water Engineer Derek Morningstar, Terrestrial Ecologist **CIMA Canada Inc. (CIMA+)** Sonya Kapusin, Environmental Planning
C.C. TO	:	People attending

Note: If you believe that these minutes are lacking in accuracy, please inform the author who will make the necessary changes.

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DISCUSSION TOPICS	ACTION BY

1 INTRODUCTIONS

- The meeting began with roundtable introductions and welcoming remarks from Halton Region; All present were asked to sign the attendance sheet
- The purpose of the meeting was to introduce the Class EA study for improvements to Ninth Line from Dundas Street to the 407 ETR, and receive initial comments or input from Conservation Halton; A package with an agenda, maps of the study area, and a list of surveys/studies was distributed to all present
- Paul Bond will be the Project Manager on behalf of Conservation Halton; The Halton Region Project Manager is Darryl Young and the CIMA Project Manager is Stephen Keen (carbon copy correspondence to Sonya Kapusin); Halton Region's project number is PR3036A/PR 3037A

2 ENVIRONMENTAL ASSESSMENT (EA) STUDY

Study Introduction:

- CIMA+ provided an overview of the study based on the Project Team's current understanding of the study's background, scope, and existing site conditions. During the overview, Conservation Halton was asked to consider the following items for discussion:
  - Key interests
  - Criteria for development/assessment of alternative solutions/designs and environmental studies
  - Expectations for impact analysis and mitigation

Study Overview:

- The Ninth Line Corridor (Study Area) is approximately 3.8km from Dundas Street to approximately 500m south of Lower Base Line Road in Oakville and Milton
- Halton Region's Transportation Master Plan – The Road to Change recommended widening Ninth Line from Dundas Street to the 407 ETR from two to four lanes with a right-of-way of 35m with an urban cross-section; Halton Region explained the City of Mississauga plans to widen Ninth Line from Derry Road to Highway 401, north of the Study Area
- The study process will follow the requirements for a Schedule C project under the Municipal Engineers Association (MEA) Municipal Class Environmental

Assessment (June 2000, as amended in 2007, 2011 and 2015)

- The Ninth Line Corridor is a two-lane major arterial road servicing a growing volume of vehicles during peak periods; Ninth Line is used by commuters accessing the 407 ETR and servicing both Halton and Peel**;** CIMA+ is undertaking a transportation analysis to identify transportation problems and/or opportunities associated with the Corridor
- The surrounding land use is primarily rural farm land with places of worship, sports park, funeral home and cemetery, Fern Hill School, and detached houses**;** The centre of the Corridor is open space and part of the Natural Heritage System**;** Land uses on the east side of the Corridor are mainly business, open space and part of the Parkway Belt West**;** Planned new communities within the Study Area will be confirmed with the Town of Oakville
- The Study Area includes crossings at Highway 403/407 ETR crossings; The Dundas Street intersection is built out and the roundabout at Ninth Line and William Halton Parkway will be constructed by 2017; The Class EA for Ninth Line will tie into the existing/planned intersection design at Dundas Street
- Natural features within the study area include watercourse crossings and possible species at risk; The Credit Valley Conservation (CVC) boundary is south of the 407 crossing (to be verified); [Post Meeting Note: CVC responded and indicated they do not have any interest with this study]
- Golder will assess potential impacts on natural environment features, identify natural environment regulatory constraints (e.g., potential permits), complete the Information Gathering Form for submission to the Ministry of Natural Resources and Forestry, and complete a self-assessment under the current Fisheries Act
- The Ninth Line Corridor is situated within the Sixteen Mile Creek Watershed with at least one watercourse crossing consisting of a single span concrete culvert approximately 1.4km south of Burnhamthorpe Road East, possibly built in 1970
- Golder will conduct a hydraulics assessment, using available hydrologic modelling results from Conservation Halton, to establish flood elevations for existing conditions and determine culvert size and road profile adjustments to avoid overtopping; Low-Impact Development (LID) techniques will be considered to mitigate downstream impacts

DISCUSSION TOPICS	ACTION BY

Potential Alternatives:

- Alternative solutions will include Do Nothing and Widening (i.e. 2 to 4 lanes), with consideration for active transportation on-road and off-road infrastructure and urban/rural cross-sections
- Should widening be preferred, alternative designs may include widening to the east, to the west and along the centreline (symmetrical)

EA Analysis:

- Assessment criteria will include transportation, natural, cultural, socio-economic (including noise and cost), and constructability factors
- The Project Team will conduct archaeological and cultural heritage assessments for the Corridor

Agency Review:

- The Technical Agencies Committee (TAC) for this study will meet on June 1st, 2016; Conservation Halton confirmed their interest in participating on TAC
- Regularly scheduled meetings with Halton Region and Conservation Halton (separate from this study) are opportunities for further discussion on this study
- Conservation Halton will have opportunities to review and comment on studies throughout the project

Public Information Centre No. 1:

- The first Public Information Centre for this study will be held as an open house on June 16, 2016 at Fern Hill School within the Study Area from 6:30pm to 8:30pm (drop-in); A combined Notice of Study Commencement and Public Information Centre will be provided to agencies and stakeholders
- The second Public Information Centre for this study is currently scheduled for Fall 2016
- A list of surveys/studies and associated schedule was distributed to all present; Fluvial Geomorphology may be initiated later in the study (if required); Natural Environment surveys will respect seasonal constraints (e.g., June for bird survey); The Project Team asked Conservation Halton for existing information for reference during the initial phases of the study
- Study completion is currently scheduled for Spring/Summer, 2017

DISCUSSION TOPICS	ACTION BY

3 CONSERVATION HALTON

Golder provided an overview of the Natural Environment scope:

- Breeding bird surveys will likely be key investigations; The key habitat of concern is to be determined
- A wetland was noted southwest of William Halton Parkway, which may be of interest to the Ministry of Natural Resources and Forestry
- A detailed species inventory/assessment is not planned; The Project Team will look at work already completed and determine if an intensive inventory is needed from the Ministry of Natural Resources and Forestry / Conservation Authorities
- Field surveys will be completed from the road due to access limitations; Golder will identify locations where property access is desired or advise the Project Team if access to all properties is preferred; If so, the Region will draft Permission to Enter (PTE) letters — Golder

Discussion:

- Conservation Halton referred to the Headwaters module and will provide the Project Team with access to data. Links to Conservation Halton data request protocol, to be completed by the Region/Consultant, will be provided under separate cover. — Conservation Halton
- Conservation Halton may request an amphibian survey; The east boundary limit of the North Oakville Corridor Study (NOCS) is Ninth Line; JC-22 (Joshua's Creek) through the cemetery is identified as a high constraint area; This crossing may require remediation; The area is also identified for wildlife passage — Conservation Halton
- Conservation Halton will provide the Project Team with a check list for the Class EA and follow up with comments [Post Meeting Note: A permit check list was provided by Conservation Halton on May 10, 2016]

Golder provided an overview for Stormwater Management:

- The Transportation Master Plan considered an urban cross-section for the Ninth Line Corridor
- There could be a culvert at the noted wetland plus at one or two smaller crossings within the Study Area

DISCUSSION TOPICS	ACTION BY
• At least one crossing consists of an open bottom box culvert; Drainage at this crossing is not large • Criteria for the hydraulics assessment will include no overtopping for the Regional Storm (i.e. Hurricane Hazel) and freeboard	Golder
Discussion: • Culvert sizing should consider hydraulics, fluvial-geomorphology and aquatic ecology; The respective specialists should be part of the study team to address hydraulics	Golder
• Conservation Halton advised the Project Team to use the North Oakville Creeks Subwatershed Study (NOCSS) as a guide; Requirements for crossings are provided in Section 7.4.4 of the NOCS; 3x's bankfull is valid criteria, however more may be required in the NOCSS	Golder
• Conservation Halton noted the HECRAS model may not exist. The current HEC-RAS model for Joshua's Creek does not extend up this tributary, however Conservation Halton staff will extend the model using HEC-GeoRAS in the next month and provide a revised HEC-RAS model to the study team. A data request should be submitted to Jeff Lee (jlee@hrca.on.ca)	Conservation Halton/Golder
• Future land use is provided in the North Oakville East Secondary Plan • Controls for road drainage will be confirmed • Halton Region suggested there may be an opportunity for LIDs at the preliminary design level	
• Halton Region to explore the benefits of a semi-urban cross-section; A large ditch may be beneficial near the wetland area	Halton Region
• Conservation Halton will forward considerations to the Project Team in an email. Stormwater management requirements (with associated quantity and erosion targets) are outlined in Section 7.4.4 of the North Oakville Creeks Subwatershed Study (NOCSS) Implementation Report (http://www.oakville.ca/assets/2011%20planning/sec7-full.pdf). Conservation Halton staff are supportive of the use of LID measures within the Right-of-Way	Conservation Halton
Discussion: • Halton Region's size threshold for tree replacements have been used; The municipality would replant trees within the Right-of-Way; • Halton Region suggested tree planting in boulevards/medians may be an opportunity; Halton	

DISCUSSION TOPICS		ACTION BY
	Region may be able to tie tree planting into the LID approach; The Regional Forester may be consulted	
4	**NEXT MEETING**	
	• The Project Team requested a site walk meeting with Conservation Halton to review site specific issues; The site walk is expected to be less than four hours and could be scheduled in the morning	
	• Conservation Halton will suggest two or three dates in late May before the TAC meeting on June 1st	Conservation Halton
	• Conservation Halton will suggest key locations of interest to facilitate the site walk	Conservation Halton

MINUTES OF MEETING

CLIENT	:	Halton Region
PROJECT	:	Class Environmental Assessment Study for Ninth Line (Regional Road 13) Transportation Corridor Improvements from Dundas Street (Regional Road 5) to 407 ETR (Express Toll Route)
MEETING	:	Site Walk with Conservation Halton
DATE OF MEETING	:	June 2, 2016, 1:30pm
LOCATION	:	Ninth Line
ATTENDEES	:	**Conservation Halton** Paul Bond, Environmental Planner Tawnia Martel Cory Harris Richard Baxter **Halton Region** Darryl Young, Project Manager Jeffrey Reid, Project Director Matt Krusto, Transportation Planning Ari Lika, Summer Student **Golder Associates (Golder)** Christopher Davidson, Surface Water Engineer Derek Morningstar, Terrestrial Ecologist **CIMA Canada Inc. (CIMA+)** Sonya Kapusin, Environmental Planning

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DISCUSSION TOPICS	ACTION BY
1 MEET AND GREET	

• CIMA and Conservation Halton met at the baseball diamond parking lot on the east side of Ninth Line, approximately 250m north of Dundas Street; All present signed the attendance sheet
• In advance of the site walk:
  • Halton Region distributed the agenda (itinerary) and meeting notes of April 20th to Conservation Halton
  • Conservation Halton provided their Environmental Assessment (EA) checklist for this study to Halton Region and CIMA
• CIMA distributed aerial maps of sites for reference during the walk	

2 UPDATE	
• Conservation Halton advised they reviewed the meeting notes of April 20th and will forward comments to Halton Region and CIMA by email	Conservation Halton
• Conservation Halton asked if Staff could be on site with the project team during field surveys to stake wetlands; The wetlands behind the cemetery building are currently in dispute	Halton Region/CIMA/Golder
• Halton Region and the consultant team will need to sign a data request form and licence agreement to access data available from Conservation Halton; The data request from is available on the Conservation Halton website	Halton Region/CIMA/Golder
• Conservation Halton plans to extend the hydraulic model to include the tributary culvert crossing on Ninth Line	Conservation Halton
3 SITE WALK ITINERARY	

• **Site 1: Joshua Creek Crossing (approximately 745m north of Dundas Street)**
  • The tributary crossing culvert was a concrete box (closed bottom) built in 1970; Halton Region has culvert inspection information for this culvert (including maintenance, installation dates, etc.)
  • Conservation Halton requested a topographic survey of the culvert location; Halton Region has topographic information for the road; Halton Region will provide the topographic (Autocad) file; Conservation Halton requested cover and height to road details of culvert based on the topographic survey
  • Golder advised that 5 or 6 barn swallow nests were observed within the culvert
	Halton Region

DISCUSSION TOPICS	ACTION BY
• Halton Region explained that trade-offs with potential multi-use paths and bike lanes may be required at this location • A crossing culvert was observed at Fern Hill School, which appeared to be a corrugated steel pipe • Fern Hill School has a culvert at the driveway which will likely be impacted with a road widening	
• Conservation Halton recommended an assessment of fluvial geomorphology (i.e., a basic field and desktop assessment of the meander belt) for sizing of the culvert	CIMA/Golder
• Conservation Halton is preparing information on erosion thresholds, which will be useful for the geomorphic assessment when available; Conservation Halton will provide erosion control information	Conservation Halton
• Conservation Halton advised the project team to review the Implementation Report from the North Oakville Creeks Subwatershed Study (NOCSS)	Halton Region CIMA/Golder
• Halton Region and the consultant team will need to finalize Permission to Enter letters for lands in this area	Halton Region/CIMA/Golder
• As noted above, Conservation Halton advised that staking of wetlands is required	
• **Site 2: Wetland southwest of Ninth Line and Burnhamthorpe Road**	
• Conservation Halton advised that encroachment into the wetland to accommodate widening may require compensation; The Class EA should note ideas for compensation	Halton Region/CIMA/Golder
• Conservation Halton will need to stake the east and west sides of the roadway along this section	Conservation Halton
• Conservation Halton advised that a roadway on top of a Provincially Significant Wetland (PSW) and gas line is an issue	
• A wetland crossing culvert was observed next to telephone pole #10910 on the west side and next to pole #9469 on the east side of Ninth Line; The culvert was a circular corrugated steel pipe (450mm diameter) in generally poor condition and in a bad location (i.e., not at the wetland); There appeared to be little flow through the wetland culvert; The culvert was observed to be half full of water on the west side	
• Conservation Halton advised the drainage can be linked across the road between the two wetlands	
• Conservation Halton suggested looking at replacing the wetland culvert with a small box culvert for water level equalization and wildlife crossing	Halton Region/CIMA/Golder

DISCUSSION TOPICS	ACTION BY
• Conservation Halton advised the total square area of the PSW impacted should be broken down by facility type (e.g., multi-use path)	Halton Region/CIMA/Golder
• Conservation Halton has catchment boundaries for the drainage area; The project team will request a catchment plan for the drainage area	CIMA/Golder
• Consideration for a cantilever bridge and a clearspan bridge over top of the existing culvert was discussed	
• Conservation Halton may follow up with the Ministry of Natural Resources and Forestry (MNRF) regarding compensation, replacement of poles, and linking the wetland complex	Conservation Halton
• A retaining wall may be a solution on the east side to minimize impact through this constrained area	
• For mitigation/compensation, the choked wetland could be improved with more open space and/or some of the invasive plant species (e.g., phragmites) along the roadway could be removed (disposal requirements were discussed)	Halton Region/CIMA

• Halton Region suggested the shoulder, centre median/boulevard, or road width could be mitigated at this location; Mitigation options for this location may include:
  • End bike lane and merge with the multi-use path
  • Provide 2.0m double solid centre line
  • Design a narrower boulevard and/or roadway	

• There is a Union Gas pipeline along the west side; The project team will request and review Union Gas plans for the corridor, including details for the Union Gas Parkway West Compressor Station; Relevant information can be requested from the utility company or found on the National Energy Board (NEB) website	CIMA
• Signage for Enbridge pipeline was observed	
• **Site 3: North of 407 ETR interchange at the stormwater management pond**	
• Conservation Halton will provide guidance on behalf of Credit Valley Conservation for the interchange area and confirm the conservation authorities' boundary limits; The boundaries will be confirmed with mapping from Conservation Halton	Conservation Halton
• Conservation Halton will confirm the scope of the stormwater investigation and implementation of the NOCSS (i.e., implementation in East Oakville)	Conservation Halton
• Conservation Halton confirmed the last item in the EA checklist regarding stormwater management requirements is applicable; Conservation Halton will	Conservation Halton

DISCUSSION TOPICS	ACTION BY
confirm the requirement to consider the use of trenchless technologies on page 3	
4 NEXT MEETING	
• Public Information Centre No. 1 will be held on June 16, 2016 from 6:30 pm to 8:30 pm at Fern Hill School on Ninth Line within the study limits	All

MINUTES OF MEETING

CLIENT	:	Halton Region
PROJECT	:	Class Environmental Assessment Study for Ninth Line (Regional Road 13) Transportation Corridor Improvements from Dundas Street (Regional Road 5) to 407 ETR (Express Toll Route)
MEETING	:	Meeting with Conservation Halton
DATE OF MEETING	:	November 24, 2016 at 1:00 pm
LOCATION	:	Conservation Halton, 2596 Britannia Road, Burlington, ON Sixteen Mile Room
ATTENDEES	:	Paul Bond, Holly Anderson, Tawnia Martel, Cory Harris (Conservation Halton) Matt Krusto, Walter Scattolon (Halton Region) Stephen Keen, Sonya Kapusin, Maram Miri (CIMA) Derek Morningstar, Christopher Davidson (Golder)
C.C. TO	:	People attending

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DISCUSSION TOPICS		ACTION BY
1	**WELCOME**	

	• An agenda was distributed in advance of the meeting
	• Meeting materials included:
	  ○ Natural Environment Report (Golder)
	  ○ Environmental Constraints Drawing
	  ○ Preliminary Design Options 1 to 4
	  ○ Options 1 to 4 Strategic Assessment
	• The meeting began with roundtable introductions and an overview of the agenda by Halton Region	

2	**ENVIRONMETAL CONSTRAINTS**	
	<u>Natural Environment</u> • The regulatory limit is not shown in the Natural Environment Report; An updated figure with the regulatory limit was shown separately at the meeting. • Golder noted that the regulatory limit does not appear east of Ninth Line; Conservation Halton (CH) to provide an updated shape file for the regulatory limit and watershed boundary. • Golder completed an amphibian survey, a reptile survey and a bird survey; Most of the investigations were completed from the Right-of-Way (ROW) due to restricted property access at the time of surveys; The fisheries investigation was completed with permission to enter property. • Amphibians: Very little was found on site. • Reptiles: Nothing was found on site; ecologists did not find any turtle activity. • Birds: 38 species were found; Barn Swallow were found nesting at the Box Culvert; Bobolink was also found in (2) locations, north and south of the school, not necessarily in the road ROW; No nesting found of Bank Swallows. • No open water was found as the wetland was dry during the site visit. • Golder conducted a high level Ecological Land Classification (ELC) in linear format. • Wetland boundaries were not updated as they were recently updated by the Ministry of Natural Resources and Forestry (MNRF). • The wetland is part of the Provincially Significant Wetland (PSW), and part of the CH Regulatory Limit, and Natural Heritage System (NHS). • Some sensitive vegetation found. • Very poor movement of amphibians due to restricted passage. • No sensitive fish habitat found around the box culvert; Joshua's Creek (JC-22) was dry at the time of survey; The watercourse at this crossing is likely intermittent/seasonal and warm water fish habitat.	CH

	DISCUSSION TOPICS	ACTION BY
	• JC-22 drainage direction is to be corrected in the report.	Golder
	• Will the road be treated as rural, urban or urban-rural? ○ The road will be a hybrid; urban-rural.	
	• CH advised that young Barn Swallow may not leave their nests until September, which may affect construction timing windows; Barn Swallows and construction timing will be discussed with MNRF.	Halton Region/ CIMA/Golder
	• CH noted a reference in the report for bird and amphibian monitoring; The Marsh Monitoring Program is used for their studies; Golder to confirm reference in the report.	Golder
	• Golder to incorporate photos in the report as requested by CH; photos of the crossings (upstream/downstream) and around wetland.	Golder
	• Golder to change wording in Sections 6 and 7 as requested by CH (i.e., "could be" vs "to be considered"), and to incorporate specific environmental measures. Golder to expand the conclusion and to include environmental comments on each of the preliminary options.	Golder
	• Incorporate environmental mitigation measures that overlap with stormwater management (e.g. Low Impact Development (LID)); particularly relevant to wetland.	Golder
	• CH requested more detail to describe the area 80m upstream of JC-22.	Golder
	<u>Fluvial Geomorphology</u>	
	• No defined channel upstream of culvert CC#9.	
	• Approximate 40m meander belt and erosion limit of 35m.	
	• Existing culvert has capacity; Additional or larger culvert is needed with road widening/culvert extension.	
	• The project team discussed the possibility of keeping the existing culvert and adding a culvert on either side.	
	• CH advised that Barn Swallows would likely return to a replacement culvert that is built to a similar form as the existing culvert.	
	• If a box culvert is added adjacent to CC#9, more Barn Swallow will appear.	
	• Even with seasonal restrictions or any temporary measures, barn swallows may appear during construction.	
	• A second culvert would still be needed, even if the existing culvert is extended (10 m) on each side.	
	• Replacing the existing culvert with a larger one would provide a wildlife passage; replacing the culvert is also dependent on its age. Halton Region to look at their culvert inventory as requested by CH.	Halton Region
	• Permitting requirements will be discussed with MNRF (Aurora McAllister, Aurora District).	Golder

	DISCUSSION TOPICS	ACTION BY

	• CH's recommendation is to replace the culvert with a larger culvert subject to MNRF feedback.
	• Is erosion along the creek flow-related or a result of vegetation removal?
	  ○ Erosion is not necessarily flow-related
	  ○ It may be helpful to comment on the erosion of the box culvert.
	<u>Stormwater Management</u>
	• Existing ditches on both sides to be kept; possibilities of getting more water into the wetland or directing water towards the wetland.
	• The creek flows to the ditches and not through culvert CC#7.
	• The school's culverts are 900 mm and do not necessarily have the capacity for larger flow.
	• Golder and CH discussed improvements to the wetland culvert (location, size, benching) to improve wetland connections.
	• CH talked about stormwater control measures, and suggested a long narrow pond on the east side of ninth line, near the box culvert, as well as looking at connections to future SWM ponds (based on NOCSS locations). Golder will try to maximize stormwater control through LID measures.
	• CH also offered to participate in an LID brainstorming session with the project team.
		Golder

3	**PRELIMIMNARY DESIGN OPTIONS**	
	<u>Option 1</u> • Widen equally east and west has the highest environmental impact as it requires area from both sides of the road. • Also takes a fair amount of the school's driveway as it is already short; it will also impact the Hydro One Corridor and few other properties on the east and west side. <u>Option 2</u> • Widen to the east, has the second highest environmental impact. • Options 1 and 2 are close in the amount of property required and environmental impact. <u>Option 3</u> • Widen to the west, has the highest impact on property requirements. However, it has a lower environmental impact than Options 1 and 2. • Option 4 has the least impact on property and environmental constraints, as the cross-section is narrowed through the environmentally constrained area. • There may be some grading impacts once the 3D design is completed, but that will apply to all options. • Would Option 4 require a linear detention pond?	

DISCUSSION TOPICS		ACTION BY
	○ Adding a pond around a PSW is a sensitive issue and to the south-west, there is a Bobolink habitat. ○ Adding a SWM nearer to CC#9 may be an option.	
5	**NEXT STEPS**	
	• CH to provide feedback on the information provided in the meeting; All were reminded that Species at Risk information is sensitive and not intended for public distribution (please treat the Natural Environment Report as confidential). • CH to provide an updated shape file for the Regulation Limit and NHS. • Project team to review the checklist provided by CH and ensure the items listed are met; CH encouraged questions where clarification is needed. • No objection on the options, however, CH is leaning towards the mitigated design (Option 4). • CIMA to add a Key Plan to all drawings.	CH CH Halton Region/CIMA/Golder CIMA

MINUTES OF MEETING

CLIENT	:	Halton Region
PROJECT	:	Class Environmental Assessment Study for Ninth Line (Regional Road 13) Transportation Corridor Improvements from Dundas Street (Regional Road 5) to 407 ETR (Express Toll Route)
MEETING	:	Meeting with Ministry of Transportation (MTO) and 407ETR
DATE OF MEETING	:	January 13, 2016 at 9:30 am
LOCATION	:	Ministry of Transportation, 159 Sir William Hearst Avenue, 3rd Floor, Toronto, ON
ATTENDEES	:	Matt Krusto, Melissa Green-Battiston (Halton Region) Stephen Keen, Jessica Dorgo, Hongtao Gao (CIMA) Tony Angelo, Dragan Mrkela, Jeff Booker (407 ETR) Wan Chi Ma, Clement Shim, Wes Lau, Frank Martins (MTO)
C.C. TO	:	People attending

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1	**WELCOME**	
	• The meeting began with roundtable introductions and an overview of the project by Halton Region	
2	**MTO Interchange/Ramp Crossing Cross Sections Memo** • Each of the 4 crossings were reviewed in order (south to north)	
	1. Highway 403/407 Interchange Ramp W-S Over Ninth Line • The MTO general arrangement drawings were developed over 30 years ago and do not account for active transportation. CIMA has modified this design to include active transportation in the proposed widening cross sections • Barrier protection is provided against the pier on east side • Carrying active transportation through the study area is important to Halton Region- this is outlined in the Halton Region Active Transportation Master Plan • CIMA to consider adding space for snow storage on east side	**CIMA**
	2. Ninth Line Over Hwy 403/407 Interchange • Two additional piers are required to accommodate the widened extension of the bridge (12.5m) • Side clearances for the over-pass are required • 407ETR does not have any issues with the clearances outlined in the memo asked that the clearances be confirmed • 407 ETR indicated that Ontario Traffic Manual (OTM) Book 18 section 4.4.1.1 specifies that a 4m multi use trail is desired with an additional 0.3m on either side for all in-boulevard bicycle facilities. CIMA to include justifications for a reduced design criteria	**CIMA**
	3. Ramp 407N-403E,S Over Ninth Line • Proposed design includes a cut into slope from abutment on east side and addition of a retaining wall. Further structural review is required • Width of multi use trail may be a concern as it does not meet the OTM Book 18 desired widths (as noted above) • Signage may be required to instruct cyclists to dismount while passing • Halton Region noted that the proposed multi use trail widths are consistent with Regional standards • 407 ETR noted that the general concept is constructible	
	4. Ninth Line Over Ramp 403S-407N & Ramp 403E-407N • Cross section includes 3m multi-use trail on both side • 407ETR to provide CIMA with drawings of the culverts that have recently been relined	**407ETR**

	• Centre median width can be considered at 1.2 to 1.5m (subject to review and approval)	
3	**General Discussion**	
	• The alternatives have been developed based on an 80km/h design speed and 60 km/h posted speed is being used for design • Regarding the structures, 407ETR must adhere to MTO standards based on agreement with MTO • Drawings to be designed based on MTO design criteria including OTM Book 18. CIMA to provide justification when MTO criteria is not met. • The existing box culvert between bridge #3 and #4 may require extension or replacement. Culverts are currently being reviewed by CIMA and will not be shown in detail until the conceptual design is finalized • MTO noted that all designs must comply with Accessibility for Ontarians with Disabilities (AODA) • 407ETR to provide available stormwater management (SWM) reports to CIMA regarding the SWM pond • 407ETR has as-built surveyed bridge clearance data available that can be made available to CIMA upon request • Fence relocation is required in two locations. This is not an issue at this point in the study and will be revisited and confirmed through detailed design. • CIMA to include a note regarding fence relocations in commitments table • Halton Region to provide CIMA with available additional topographic survey information • The existing roadway does not provide illumination. CIMA to include illumination limits in memo and account for utilities in design. Halton Region to confirm illumination preference for north of William Halton Parkway	**CIMA** **407ETR** **CIMA** **Halton Region** **CIMA/ Halton Region**
4	**Next Steps**	
	• CIMA to update memo to address comments received from MTO and 407ETR and to outline how the proposed design relates to the Canadian Highway Bridge Design Code (CHBDC) and other appropriate MTO standards • Technical Agencies Meeting (TAC) upcoming in early spring, approximately 2-3 weeks prior to Public Information Centre #2 • Project Team to have a detailed review with MTO and 407ETR prior to TAC Meeting.	**CIMA**

MINUTES OF MEETING

CLIENT	:	Halton Region
PROJECT	:	Class Environmental Assessment Study for Ninth Line (Regional Road 13) Transportation Corridor Improvements from Dundas Street (Regional Road 5) to 407 ETR (Express Toll Route)
MEETING	:	Meeting with Conservation Halton and Town of Oakville
DATE OF MEETING	:	March 1st, 2017 at 1:30 pm
LOCATION	:	Halton Region, 1151 Bronte Road, Oakville, Ontario 1151 Bronte Road, Oakville, Ontario
ATTENDEES	:	Matt Krusto, Melissa Green-Battiston (Halton Region) Stephen Keen, Jessica Dorgo, Jennifer Haslett (CIMA) Chris Davidson, Heather Melcher, Luke Owens (Golder) Tawnia Martel, Holly Anderson, Paul Bond, Cory Harris (Conservation Halton) Rita Juliao (Town of Oakville)
C.C. TO	:	Attendees

Note: If you believe that these minutes are lacking in accuracy, please inform the author who will make the necessary changes.

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DISCUSSION TOPICS	ACTION BY

1 Welcome

- Roundtable introductions
- MNRF was not able to attend this meeting. A teleconference will be scheduled to discuss SAR and MNRF permitting (now set for March 15)
- A meeting package was distributed to all attendees
- Halton Region presented a project background overview for the meeting attendees

2 Review of Conservation Halton Comments (November 24, 2016 Meeting)

- CIMA reviewed the comments and responses to Conservation Halton's January 10, 2017 letter following the November 24th, 2016 meeting
- An updated Natural Environmental Report will be circulated upon incorporation of comments — Golder/CIMA

3 Preliminary Stormwater Management Overview

- CIMA presented an overview of the stormwater management details illustrated on the updated drawings
    - In the north, the design relies on MTO pond and channel conveyance, suggesting lengthening but no size increases for the existing Culverts CC1, CC1.5, CC2, CC3, and CC3.5
    - Lengthening and size increases are proposed for Culverts CC4, CC5, and CC6 north of the wetland
    - Culvert CC7 at the wetland is proposed at a new location in line with the wetland, and a larger opening to a concrete box culvert to increase capacity and allow animal passage
    - Culvert CC8 is proposed to be moved north of Fern Hill School with a new channel to link the wetland to the downstream swale
    - Culvert CC9 will be improved through one of three options (lengthening, overflow culvert, or replacement) in order to maintain barn swallow habitat
    - Culvert CC10 will be removed and its function provided by ditch regrading
    - A conceptual option for infiltration trenches or bioswales along the right of way is proposed to provide runoff quality and quantity controls
    - Various areas of ditching outside the ROW are proposed as needed throughout

DISCUSSION TOPICS	ACTION BY
• At the November 24th meeting, the goal of the design was to mitigate impact to the wetland. The design has now been further refined as a "best fit" for the study area	
• MTO does not have SWM reports for the north section of the study area. Town of Oakville to search for relevant reports and provide, if available	Town of Oakville
• CIMA to include a fourth option for grading adjacent to CC#9 using a 10m long retaining wall	CIMA
• CH to provide preliminary comments on the grading options presented	Conservation Halton
• At CC#7 consideration should be given to a short RSS wall through the wetland areas to minimize road foot print and encroachment and to encourage use of CC#7 by wildlife	CIMA/Golder
4 Culverts: Assessments and Recommendations	
• Conceptual Stormwater Design memo was provided as reference for the culvert assessment and recommendations	
• CC#7 located at the wetland is 1m in height and 3m wide to provide animal passage. A 0.5m bench is provided on either side of the culvert to support wildlife passage. This culvert will provide a connection through the wetland which is not provided with the existing culvert. CIMA to consider the use of a short RSS retaining wall to minimize grading impacts to the wetland.	CIMA
• CH staff noted that there is a connection through the wetland via the existing culvert, but it is poorly connected as a result of the substandard CSP culvert (deteriorating/small size).Ditches shown on drawings are preliminary. Impacts to property requirements are to be reviewed and confirmed.	
• CIMA/Golder to determine depth of gas lines to determine if there is a conflict with proposed ditches or structures directly north of Fern Hill School. CH confirmed that a dry bench is not required at this culvert.	CIMA/Golder
• The existing structure at CC#9 provides barn swallow habitat. Details of mitigation and/or compensation are to be discussed with MNRF. Temporary nesting kiosks may be required.	
• The increased size for CC#10 would raise the road profile. To mitigate this impact it is proposed to eliminate CC#10 and implement a larger culvert for CC#9	
• North Oakville Creeks Subwatershed Study suggests SWM ponds at 2 locations within the study area (one north of William Halton Parkway and west of Ninth Line, the other north of the wetland and west of Ninth Line). The timing of the development of these ponds is unknown. It is the long-term goal of the Region to connect with these ponds. This project has to	

DISCUSSION TOPICS	ACTION BY

incorporate adequate stormwater quality and quantity treatment prior to these ponds being constructed
• Infiltration trenches are proposed on both sides of the road for quality control. Bioretention swales can be considered. These may provide SWM quality and quantity control by providing:
  • TSS reduction through infiltration and, in the case of the bioswale, filtration through the soil media;
  • Volume reduction through infiltration and, in the case of the bioswale, evapotranspiration; and,
  • Peak flow reduction through the use of a clearstone reservoir with a perforated pipe system set above the bottom of the reservoir to slowly drain stored water.
• Road widening adjacent to the wetland may provide an area to introduce a bioswale to compensate for widening impacts on the wetland	

• CIMA to initiate the Geotechnical Investigation and have LID area mapped out for boreholes. Permits from CH will not be required for borehole work	CIMA
• CH to send CIMA parameters for specialized geotechnical testing that will be required for assessing feasibility of LIDs	Conservation Halton
• There are known erosion issues in Joshua Creek west of Ninth Line. CH requested that impacts to the creek channel be considered at the tie-in point at CC#9 to prevent further erosion and minimize impact to private lands. Consulting team to assess implications and propose mitigation to better control the flow and lessen the impact to the channel.	Golder/CIMA
• CH indicated that the fluvial geomorphic assessment should evaluate the impacts of the various culvert options considered including impacts to plan form, profile and channel features. • Dry benches at CC#7 and CC#9 are preferable for CH	CIMA
5 Next Steps	
• Halton Region to schedule a teleconference with MNRF and CIMA	Halton Region
• PIC #2 scheduled for June 2017 • TAC #2 meeting to be held 2 to 3 weeks prior to PIC #2	
• Halton Region to schedule a follow up meeting with CH and Oakville following completion of Geotechnical Investigation, LID modelling and completion of meeting action items	Halton Region

MINUTES OF MEETING

CLIENT	:	Halton Region
PROJECT	:	Class Environmental Assessment Study for Ninth Line (Regional Road 13) Transportation Corridor Improvements from Dundas Street (Regional Road 5) to 407 ETR (Express Toll Route)
MEETING	:	Teleconference with Ministry of Natural Resources and Forestry
DATE OF MEETING	:	March 15th, 2017 at 11:30 am
LOCATION	:	Teleconference
ATTENDEES	:	Matt Krusto, Melissa Green-Battiston (Halton Region) Stephen Keen, Jessica Dorgo, Jennifer Haslett (CIMA) Chris Davidson, Luke Owens (Golder) Aurora McAllister (Ministry of Natural Resources and Forestry)
C.C. TO	:	Attendees

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DISCUSSION TOPICS	ACTION BY

1 Welcome and Background

- Roundtable introductions
- CIMA presented a project overview and identified the study area geographically
- PIC #2 is planned for June 2017
- Filing the ESR is planned for late fall 2017
- Detailed design will likely begin around 2020
- Construction is currently planned in two phases between 2023-2025
- Golder conducted field surveys between April and September 2016 for terrestrial and aquatic habitat. Two fields containing bobolink habitat were identified on the west side of Ninth Line. Six barn swallow nests were observed in the culvert (CC#9) which conveys Joshua's Creek under Ninth Line directly north of Dundas Street.

2 Barn Swallow Habitat

- MNRF indicated that based on the proposed project timing, additional studies at detailed design will be required to determine any changes to SARO list and SAR habitat within the study area
- CIMA to identify the commitment for additional studies and potential mitigation measures for SAR in the ESR Commitments Table — CIMA
- Three culvert options are being considered for the replacement of CC#9 in order to provide adequate hydraulic capacity and accommodate the road widening:
    - Option 1: Culvert cleanout and extension
    - Option 2: Culvert extension and addition of overflow culvert
    - Option 3: Replacement with a larger culver
- Option 3 is preferred from a hydraulic perspective as it adequately conveys regional storm event.
- MNRF approves of Option 3 as it will allow for suitable nesting habitat for Barn Swallows
- MNRF indicated that based on current legislation, a temporary structure is not required as the impact to SAR is temporary. CIMA to note in Commitments Table that the SAR regulations and new SARO list shall be reviewed during detailed design to confirm requirements at that time — CIMA
- MNRF inquired if Monarch were identified in the study area as the species will shortly be uplisted. Golder confirmed that Monarch were not observed during the filed surveys.

DISCUSSION TOPICS	ACTION BY
3 Bobolink Habitat	
• The road widening is expected to encroach approximately 7.5m to 9m into the bobolink fields on the west side of Ninth Line	
• Discussion regarding the compensations measures for impact on bobolink habitat will be reviewed at detailed design stage when impacts are finalized. CIMA to include this note in Commitments Table. If impact is minimal, compensation may not be necessary and timing windows may not be required.	CIMA
4 Other Issues	
• MNRF provided comment on other matters of Provincial interest: o Would like to see impacts to North Oakville Milton East Wetland Complex minimized o Would like to see mitigation measures to reduce herptile road mortality	
5 Next Steps	
• MNRF to be invited to upcoming TAC meetings	CIMA/ Halton Region
• ESR to include a high-level discussion about general mitigation approaches for SAR, with commitment to review the design details with MNRF at the detailed design stage	
• MNRF will be included in the circulation of the draft ESR. The Natural Environment Report will be included in this package.	CIMA/ Halton Region
• MNRF to be sent the minutes for the meeting held with Conservation Halton on March 1st.	CIMA

MEMO

TO	:	MTO, 407 ETR
COPY TO	:	Matt Krusto, Halton Region
FROM	:	Stephen Keen
DATE	:	**April 13, 2017**
SUBJECT	:	B000637 Ninth Line Environmental Assessment – Proposed Constrained Cross-sections for Ninth Line

1. INTRODUCTION

The objective of this memorandum is to summarize the design criteria for the proposed widening of Ninth Line to four lanes from north of William Halton Parkway to Halton Region's boundary south of Lower Baseline. At present this section of Ninth Line is an undivided 2-lane arterial roadway with a posted speed of 60 km/h and partially paved shoulders (rural cross-section) that passes through four MTO/407 ETR structures. The 4 structure crossings within the study area (Figure 1) are:

1. Ramp W-S underpass (Highway 403/407 interchange) over Ninth Line;
2. Highway 403/407 interchange (Ninth Line bridge structure);
3. Ramp 407N-403E,S over Highway 407 & Ninth Line; and
4. Ninth Line over Ramp 403S-407N & Ramp 403E-407N (Ninth Line bridge structure).

For the study segment south of William Halton Parkway the proposed cross-section is a 35 m right-of-way (ROW) which includes a 4-lane undivided roadway with a multi-use trail (MUT) and on-road bicycle lane on each side of the road. Given the right-of-way available through the four structures, a mitigated cross-section is required. Initially, consideration was given to maintaining a MUT on each side of the road (without on-road bike lanes). However, after further investigation it was determined that a MUT on both sides could not be accommodated without major structural modifications to at least one of the 2 structures that allow Ninth Line to pass under the Highway 403/407 interchange.

Therefore this memorandum puts forward a proposed configuration for Ninth Line through the interchange comprising a 4-lane divided roadway with a MUT on only the west side of the road. Within the interchange area, a raised centre median is proposed. The main objective of this memo is to present cross-sections for Ninth Line at the 4 structures. The design criteria (see Appendix A) used in the development of this memorandum are primarily based on the following design references:

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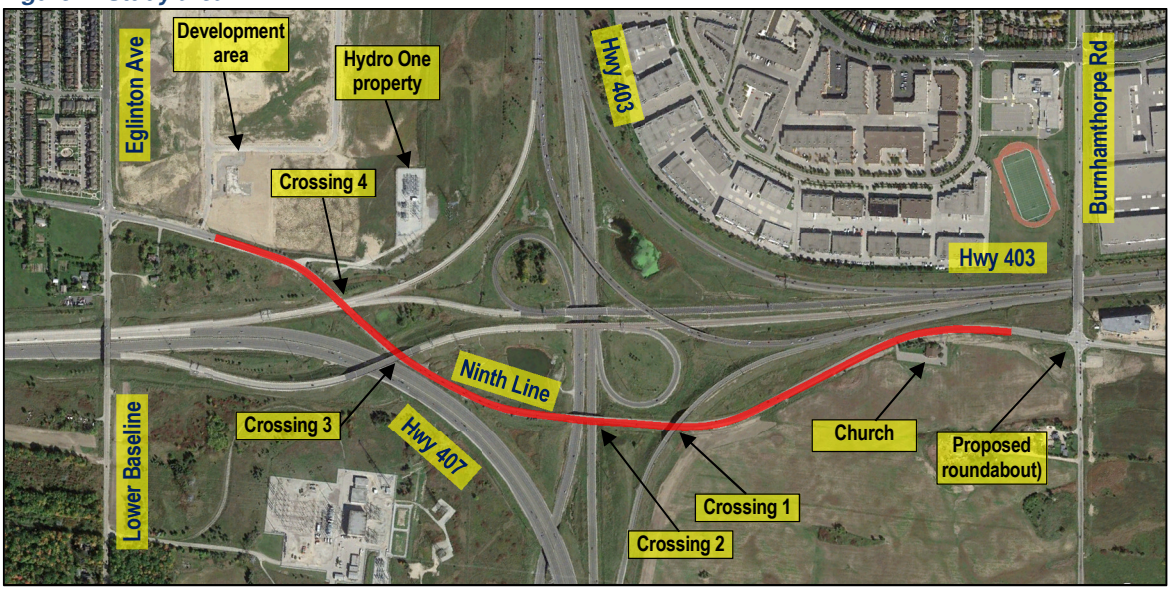
- Geometric Design Standards for Ontario Highways;
- Ontario Roadside Safety Manual, Bikeways Design Manual;
- Ontario Traffic Manual Book 18;
- Highway Access Management Guideline;
- Ontario Provincial Standard Drawings;
- Integrated Accessibility Standards (O.Reg. 191/11);
- Canadian Highway Bridge Design Code; and
- MTO Structural Manual.

Figure 1: Study area



Notes:
1. Study area limits shown (red line) are approximate.
2. The proposed roundabout will be constructed as part of William Halton Parkway as part of a separate contract.

2. CROSS-SECTIONS

2.1 TRANSITION AREAS

There are three transition areas which are less constrained than the structure crossings themselves (see Figure 1):

a) From William Halton Parkway to south of the interchange;
b) Unconstrained areas within the interchange, i.e. between the 4 structure crossings; and
c) From north of the interchange to Halton Region's boundary.

Conceptual cross-sections for these locations are provided in Figure 2 and Figure 3. Outside the interchange area an undivided roadway with a painted (flush) median is proposed (Figure 2). The flush median will allow the church's driveways to continue as a full-movement entrance. For the interchange area it is proposed to implement a raised median which provides continuity with the constrained cross-sections (Figure 3). Side slopes of 3:1 or flatter are proposed to facilitate maintenance.

Figure 2: Cross-section for transition area north and south of interchange

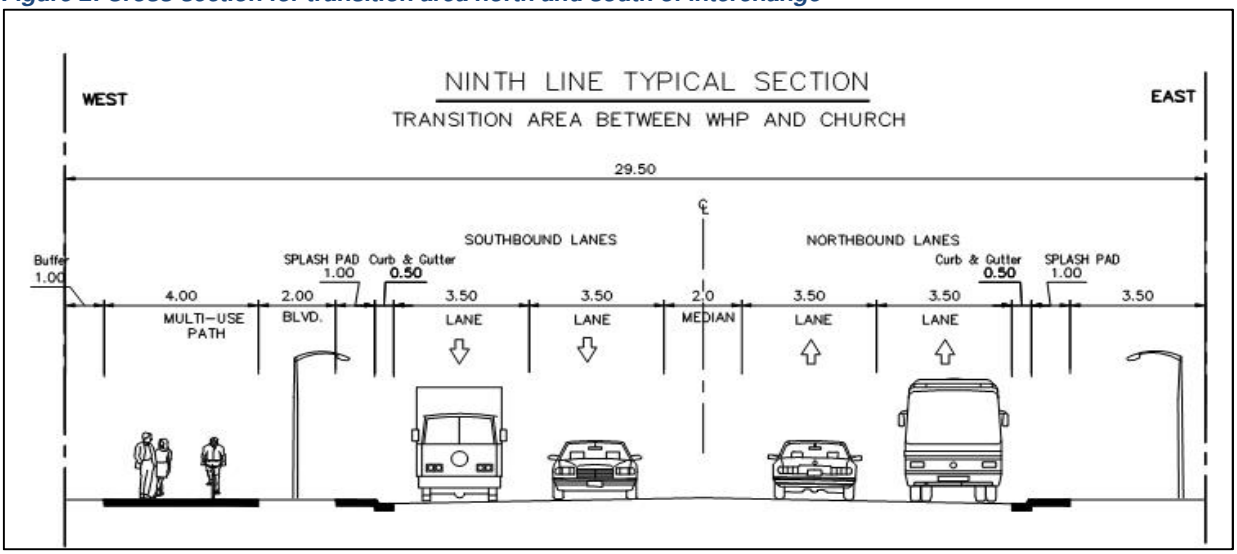
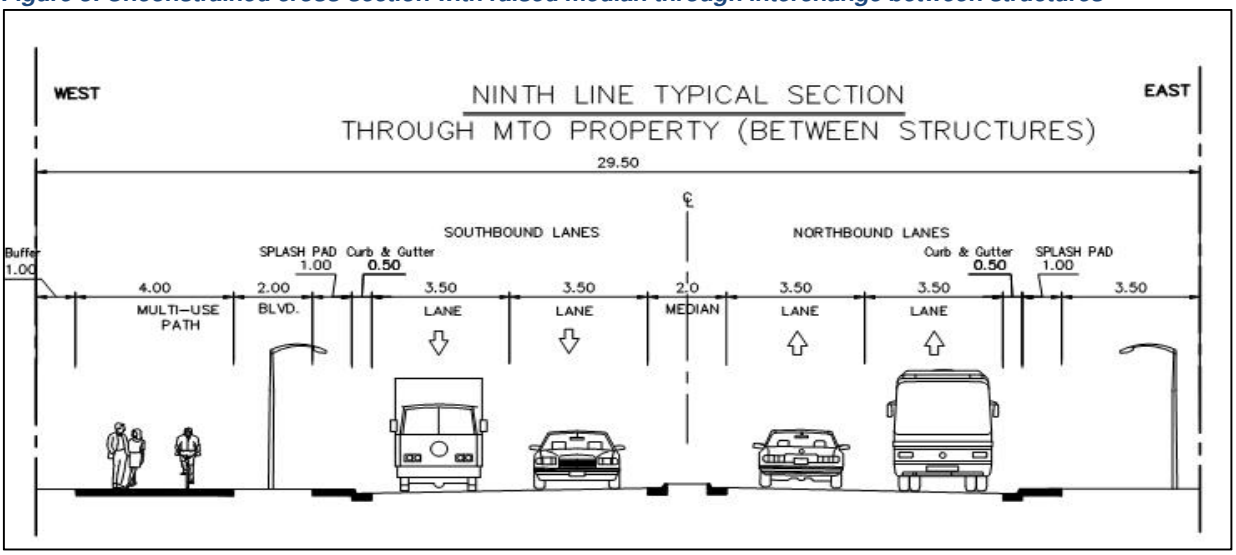


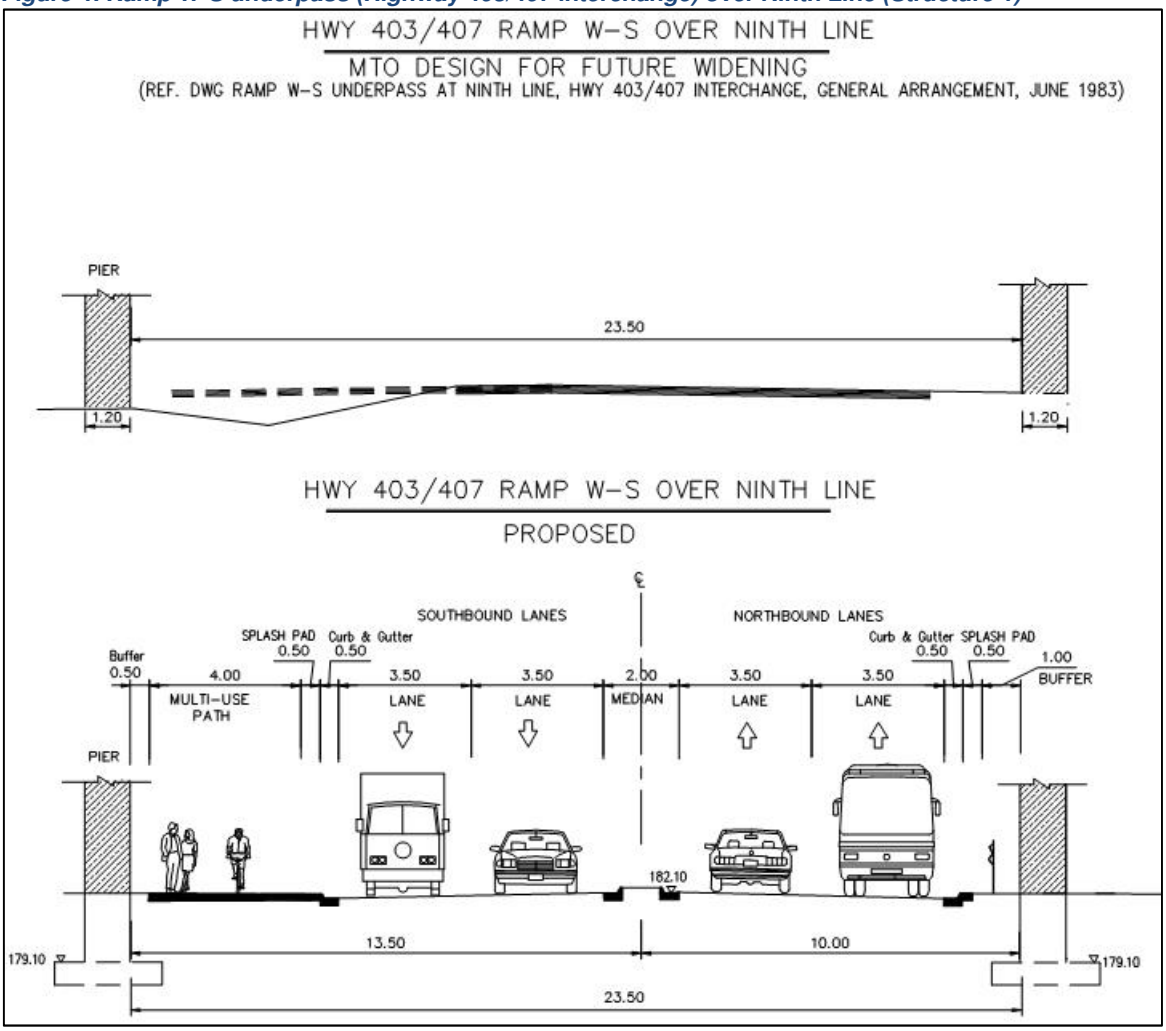
Figure 3: Unconstrained cross-section with raised median through interchange between structures



2.2 FIRST STRUCTURAL CROSSING (RAMP W-S UNDERPASS)

The proposed cross-section for each structural crossing is presented in order from south to north along Ninth Line. Figure 4 illustrates the first structural crossing showing passage under the Hwy 403/407 Ramp W-S over Ninth Line. The cross-section indicates that the MUT can be accommodated without having to modify the structure.

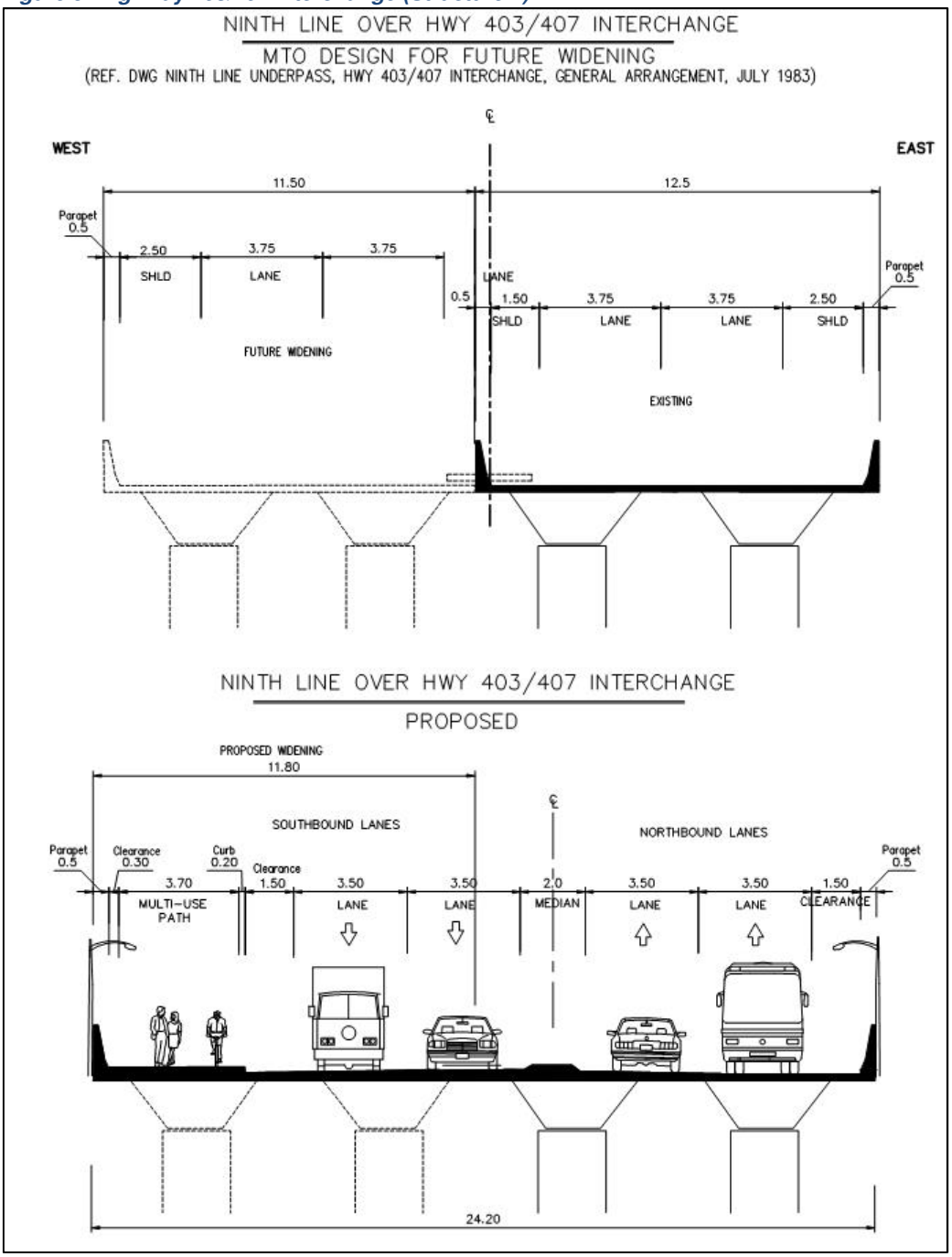
Figure 4: Ramp W-S underpass (Highway 403/407 interchange) over Ninth Line (Structure 1)



2.3 SECOND STRUCTURAL CROSSING (HIGHWAY 403/407 INTERCHANGE)

The second structural crossing is at Ninth-Line overpass at the Highway 403/407 ETR interchange, which necessitates a widening of the existing bridge by 11.5 metres. The width of the MUT is reduced to 3.7 metres at the crossing.

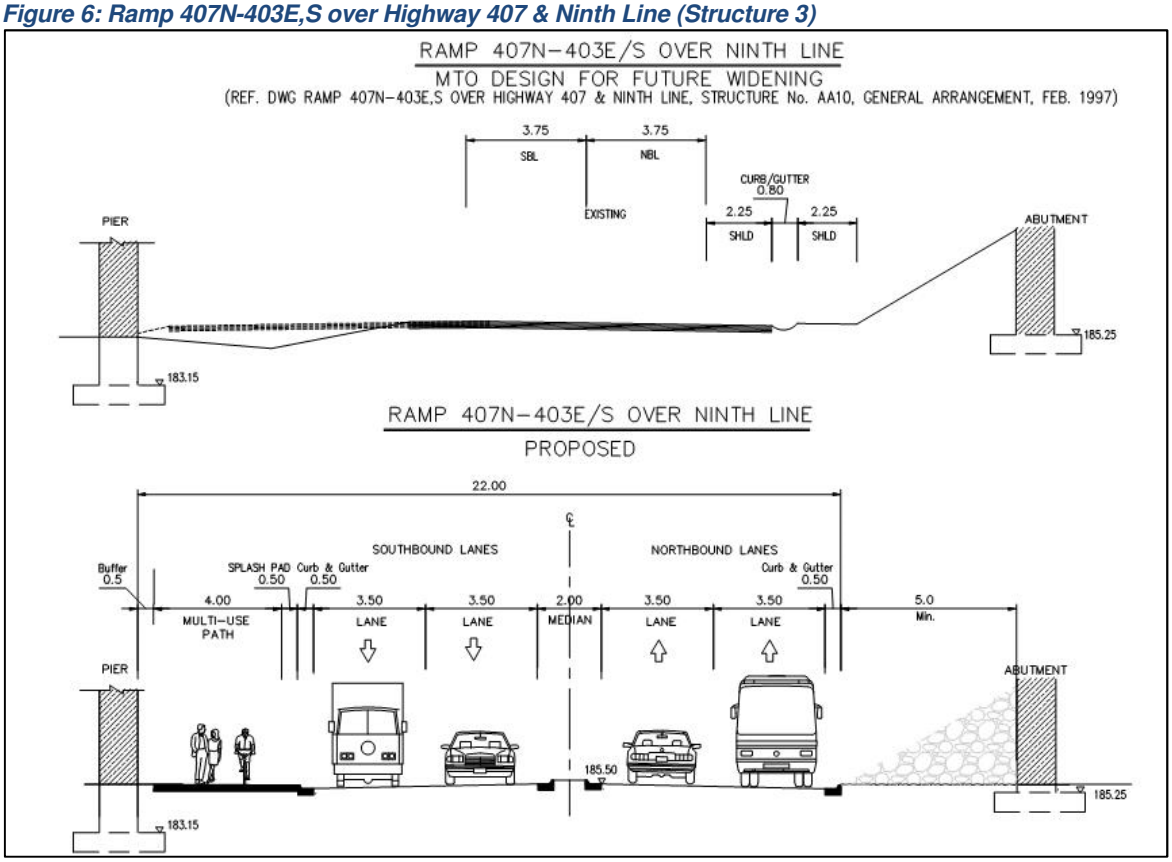
Figure 5: Highway 403/407 interchange (Structure 2)



2.4 THIRD STRUCTURAL CROSSING (407N-403E,S RAMP)

The third crossing of Ninth Line, i.e. under the 407N-403E,S ramp, is the most restricted of the crossings. However, structural modifications may be avoided here as well.

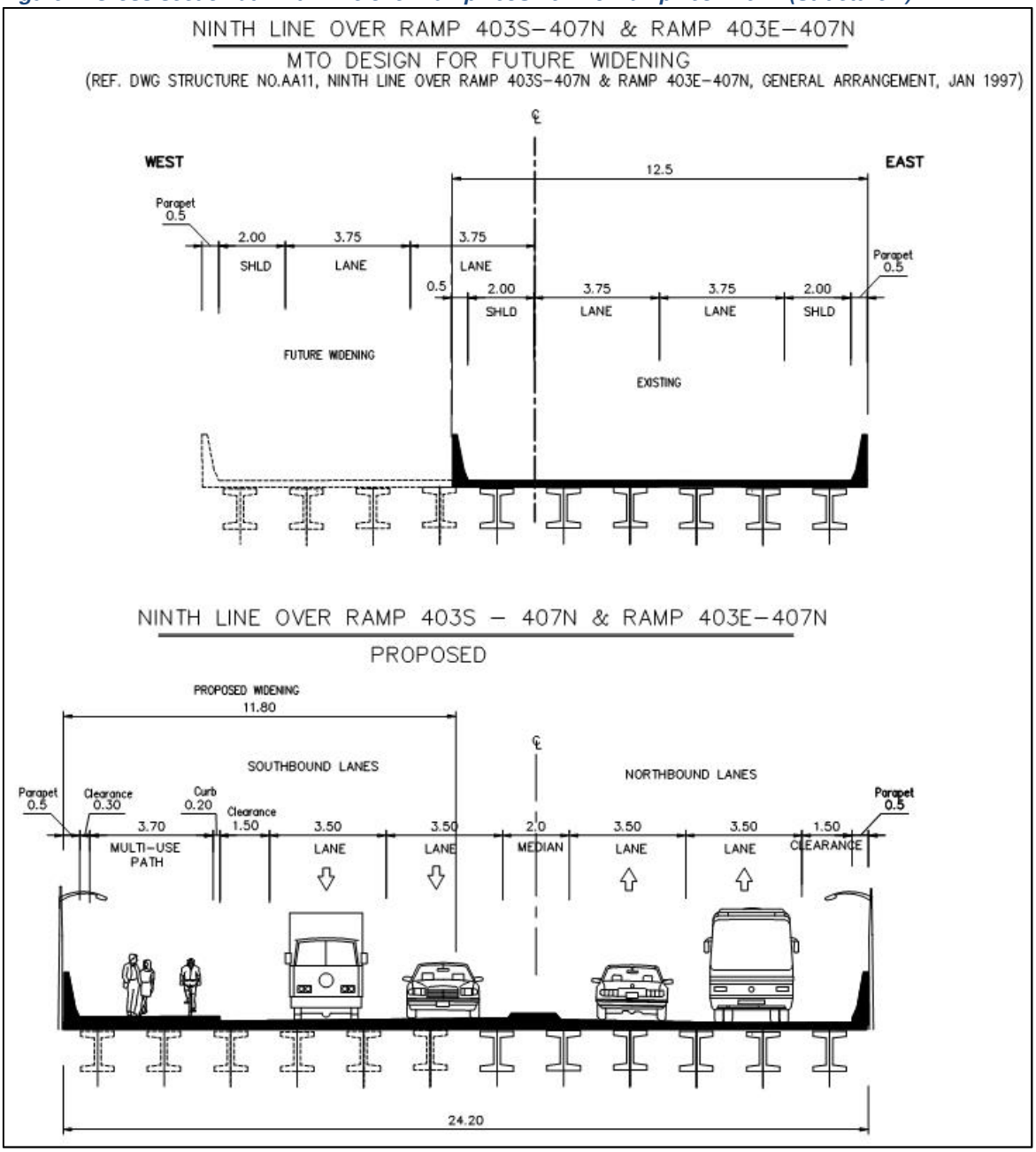
Figure 6: Ramp 407N-403E,S over Highway 407 & Ninth Line (Structure 3)



2.5 FOURTH STRUCTURAL CROSSING (403S-407N AND 403E-407 N RAMPS)

The fourth crossing accommodates Ninth Line passing over the 403S-407N and 403E-407 N ramps. An 11.8m widening of the existing structure is required, and the width of the MUT is reduced to 3.7m here as well.

Figure 7: Cross-section at Ninth Line over Ramp 403S-407N & Ramp 403E-407N (Structure 4)



2.6 COMPLIANCE WITH DESIGN CRITERIA

Existing vertical clearances at the structures where Ninth Line passes under the freeway ramps were field measured as shown in Table 1. Based on the proposed pavement widening and superelevation the reduction of vertical clearances was estimated to be less than 0.1 metre (typically 4m widening at 0.02 % = 0.08 metres). The proposed vertical clearances therefore meet geometric design standards.

Table 1: Minimum vertical structure clearances

No.	Location	Existing	Proposed
1	Ramp W-S underpass (Highway 403/407 interchange) over Ninth Line	5.3m	5.2m
3	Ramp 407N-403E,S over Highway 407 & Ninth Line	5.4m	5.3m

A review of the existing general-arrangement drawings for the bridge structures indicates that the road widening will not interfere with any of the structure footings. Based on the design criteria in Appendix A, light standards within the clear zone are proposed and can be specified with frangible bases. This will be reviewed and determined during detailed design.

3. CONCLUSIONS

This memo presented conceptual cross-sections for the proposed widening of Ninth Line between William Halton Parkway and Halton Region's boundary. The proposed 4-lane roadway features an urban cross-section with a multi-use trail. Given structural constraints, the MUT is recommended to be provided on only one side of Ninth Line from William Halton Parkway to Halton Region's boundary.

APPENDIX A: DESIGN CRITERIA

Criteria				Existing	Design standards	Proposed
General	Highway classification			RAU80	UAD80 or UAU80	UAD80 (at interchange) UAU80 (elsewhere)
	Design speed			80 km/h	80 – 110 km/h	80 km/h
	Posted speed			60 km/h	60 km/h	60 km/h
	Design vehicle				WB-20.5	WB-20
	Stopping sight distance			≥ 135m	135m (GDSOH) 130m (HAMG)	≥ 135m
Horizontal alignment	Crossfall, e	Normal crown		-0.02	-0.02	-0.02
		Maximum superelevation		unknown	0.06 – 0.08	0.04
	Minimum radius, R_{min}	For normal crown		unknown	2,130m	n/a
		For e_{max}		330m	280m	280m
	Minimum spiral parameter, K			unknown	135m (for rural conditions)	No spirals (typically not used for urban conditions)
Vertical alignment	Grade, G	Maximum		3.2% (estimated)	6 – 8%	2.9%
		Minimum		unknown	0.5% (desirable) 0.3% (absolute)	0.5%
	Curvature, K	Crest curve		35	35	35
		Sag curve	Headlight	unknown	30	30
			Comfort		15	
	Minimum curve length			unknown	80m	50m
Sight distance at highway entrance		Utility access		175m (approx.)	230m	existing
		Commercial, etc. *(institutional)*		150m (approx.)	275m	existing
Transition from 2-lane to 4-lane highway		Merging taper length		n/a	130m	130m
		Diverging taper length		n/a	70m	70m

Criteria			Existing	Design standards	Proposed
Cross-section	No. of through lanes		2	4	4
	Width of through traffic lane		3.75m	3.75m (desirable) 3.5m (acceptable)	3.5m
	Width of painted median		n/a	1.0m	2.0m
	Two-way shared-use multi-use trail (MTU	Desirable width	n/a	4.0m	4.0m
		Suggested minimum width at constrained locations	n/a	3.0m	
		Minimum width for short distances (constrained)	n/a	2.4m	
		Minimum offset to grading	n/a	1.0m	1.0m
		Minimum clearance to obstruction	n/a	0.3m	0.3m
	ROW width		n/a	20m – 45m (typ)	variable
	Curb and gutter width		n/a	0.5m	0.5m
	Shoulder width		2.5m	n/a	n/a
	Roadside grading	Maximum	unknown	2:1	3:1
		For lower heights	unknown	3:1 – 4:1	3:1
	Boulevard width	Standard	n/a	3.0m	3.0m (adjacent MUT) 2.5m (elsewhere)
		Desirable minimum	n/a	1.5m	
		Absolute minimum	n/a	0.0m	0.3m (at structures)
	Clear zone	Unconstrained	unknown	5.0m	5.0m
		At structures	2.5m (min)	5.0m	Barrier protection provided where required
Cross-section at structures	Side clearance on bridge structures with L > 50m (AUD classification)		1.5m (min)	1.5m	1.5m
	Height of parapet wall on bridge structures adjacent to MUT		n/a	1.37m	1.37m
	Raised median width		n/a	2.0m	2.0m
	Vertical clearance		see Table 1	4.8m – 5.0m	see Table 1
	Barrier protection	Offset SBGR face to back of curb	n/a	0.25m	0.25m
		Offset SBGR face to bridge pier	7.5m	1.0m	1.0m
		End-treatments within clear zone	unknown	TL-3	TL-3

MINUTES OF MEETING

CLIENT	:	Halton Region
PROJECT	:	Class Environmental Assessment Study for Ninth Line (Regional Road 13) Transportation Corridor Improvements from Dundas Street (Regional Road 5) to 407 ETR (Express Toll Route)
MEETING	:	MTO/407 ETR Liaison Meeting No. 2
DATE OF MEETING	:	May 3, 2017, 1:30pm
LOCATION	:	Ministry of Transportation, 159 Sir William Hearst Avenue, 1st Floor, Toronto, ON
ATTENDEES	:	Matt Krusto, Melissa Green-Battiston Jason Alfred (Halton Region) Stephen Keen, Stephan Schmidle (CIMA) Jeff Booker, Maria Efimova (407 ETR) Wan Chi Ma, Wes Lau, Graham Routledge, Slawomir Demianczuk, Frank Martins (MTO)
DISTRIBUTION	:	All Attendees
PURPOSE	:	Follow up to the meeting on January 13th regarding the design for Ninth Line through the 407 structures

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DISCUSSION TOPICS	ACTION BY

1 INTRODUCTION

The purpose of this meeting was to follow-up on the January 13th meeting with the Ministry of Transportation (MTO) and 407 ETR regarding the widening to 4 lanes with active transportation on Ninth Line through the 407 structures, and review the updated designs at the 4 structural locations along Ninth Line at Highway 407 and Highway 403, as presented in the memo handed out at the meeting.

2 NINTH LINE TRANSPORTATION CORRIDOR OVERVIEW

Using the updated memo, Halton Region and CIMA+ developed an updated memo of the design options along Ninth Line through the 407 structures:

1. Ramp W-S underpass (Highway 403/407 interchange) over Ninth Line: Passage under the Hwy 403/407 Ramp W-S over Ninth Line, the 4-lane widening and a 4m multi-use trail (MUT) on the west side can be accommodated without structural modifications.
2. Highways 403/407 interchange (Ninth Line bridge structure): Ninth-Line overpass at the Highway 403/407 ETR interchange. The existing bridge will have to be widened by 11.7 metres, and the width of the MUT is reduced to 3.7 metres at the crossing.
3. Ramp 407N-403E, S underpass: Passage under the 407N-403E, S ramp – the most restricted of the crossings however, structural modifications are avoided with the 4-lane widening and a 4m MUT on the west side.
4. Ninth Line over Ramp 403S-407N & Ramp 403E-407N (Ninth Line bridge structure): Ninth line overpass at the 403S-407N and 403E-407N ramps. An 11.7 metre widening of the existing structure is required, and the width of the MUT is reduced to 3.7 metres.

Key points from this discussion are summarized below**.**

3 POINTS OF INTEREST/INVESTIGATION

3.1 Ninth Line at Church (4076 Ninth Line)

- Detail cross sections (every 10 metres) from north of Burnhamthorpe to Structure #1 to demonstrate there is no potential impact to future expansion of Highway 403 (particularly in are near to church). — CIMA
- Potential glare mitigation needs to be addressed due to the road curvature. This is to be reviewed in detail design but commitment is to be documented in the ESR. — Halton

3.2 Structure 1

- Concrete barrier (0.65m) is needed (replacing guide rail) to the right of the northbound lanes at the underpass as protection for the pier. — CIMA
- Spacing between the barrier and the pier is to be reviewed by CIMA.

DISCUSSION TOPICS	ACTION BY
• May need to adjust MUT to account for additional space. • Make note to address further at detailed design.	
3.3 **Structure 2** • Provide cross sections at 407 to demonstrate that there is no potential impact to future expansion of 407 ETR.	CIMA
3.4 **Road Curvature between Structure 2 and 3** • Glare mitigation at road curvature between structure 2 and 3 to be investigated further in detailed designed but commitment is to be documented in ESR. • Tall wall barrier required between structure 2 and 3 for protection between Ninth Line and the 407 – exact limits to be determined in detail design phase.	Halton CIMA
3.5 **Structure 3** • Toe wall or slope paving to be added on the east side of structure to minimize erosion (rock sliding)	CIMA
3.6 **Structure 4** • Protection at the swim pond needs to be addressed – a guide rail has been added to the design.	CIMA
3.7 **Illumination** • An illumination review is to be done at the detail design phase.	Halton
3.7 **Stormwater Management (SWM)** • SWM reports were not available from MTO or 407 ETR –a SWM report will be forwarded to MTO for review. It was noted that the current culverts and SWM ponds will be adequate to handle the marginal increase in run-off from the additional pavement.	CIMA
4 NEXT STEPS	
• CIMA to update memo to address comments received from MTO and 407ETR. • CIMA to provide detailed cross sections (10m spacing) of study area. • CIMA to provide land ownership map to MTO by Monday May 8th. • MTO to provide comments by May 12th, 2017. • MTO and 407 ETR will be invited to a Technical Agencies Meeting (TAC), on June 8th prior to Public Information Centre in late June.	CIMA CIMA CIMA MTO MTO

MINUTES OF MEETING

CLIENT	:	Halton Region
PROJECT	:	Class Environmental Assessment Study for Ninth Line (Regional Road 13) Transportation Corridor Improvements from Dundas Street (Regional Road 5) to 407 ETR (Express Toll Route)
MEETING	:	Meeting with Conservation Halton and Town of Oakville
DATE OF MEETING	:	May 16th, 2017, at 1:00pm
LOCATION	:	Halton Region, 1151 Bronte Road, Oakville, Ontario Knatchbull Room
ATTENDEES	:	Matt Krusto, Melissa Green-Battiston, Jason Alfred (Halton Region) Paul Bond, Cory Harris (Conservation Halton) Rita Juliao (Town of Oakville) Christopher Davidson (Golder) Stephen Keen, Jennifer Haslett, Jessica Dorgo (CIMA)
C.C. TO	:	Attendees

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DISCUSSION TOPICS	ACTION BY

1 WELCOME

- The following meeting materials were distributed to attendees:
  - Meeting agenda
  - CIMA responses to Conservation Halton April 12, 2017 comments
  - SWM presentation

2 REVIEW OF CONSERVATION HALTON COMMENTS (APRIL 12, 2017)

- CIMA provided an overview of the responses to Conservation Halton's comments received on April 12, 2017 regarding the items discussed at the March 1st, 2017 meeting.

3 OVERVIEW OF PRELIMINARY DESIGN

- CIMA presented an overview of the preliminary design for the north section (William Halton Parkway to 407ETR) and south section (Dundas Street to William Halton Parkway) of Ninth Line supported by roll-plan drawings.
- It was noted that the design for the north section was reviewed with MTO and 407ETR on May 3, 2017.
- The south section has been further refined since the previous meeting with CH and Town of Oakville (March 1, 2017). The refinements include reduced impacts on adjacent properties and a reduced roadway width and retaining wall adjacent to the PSW (CC#7) and Joshua's Creek culvert (CC#9).

4 STORMWATER MANAGEMENT OVERVIEW

- Golder presented the Conceptual Stormwater Management Strategy supported with a PowerPoint presentation.
- A summary of the key conclusions from the presentation include:
  - North Oakville Creeks Subwatershed Study (NOCSS) guidelines cannot be met with standard bioretention
  - NOCSS guidelines can be met with infiltration trenches
  - A mix of existing SWM and LIDs is proposed
  - Physical constraints will likely require sections of super-pipe storage (Hwy. 407)
  - This model includes conservative assumptions for material with low infiltration. Analysis to be confirmed by geotechnical investigation results.
- Golder to confirm if the 100-year storm event is greater than the Regional storm event. — Golder
  - *Post-meeting: Golder confirmed that for small catchments (such as the road right-of-way), the 100-year storm peak runoff rate is greater than the Regional*

DISCUSSION TOPICS	ACTION BY
storm peak runoff rate. The volume of runoff is higher for the Regional storm.	
• When sizing of the Union Gas facility is confirmed, additional superpipe beyond what is recommended may be required.	CIMA/Golder
5 ROUNDTABLE DISCUSSION	
• Street trees will be considered where space permits and is valuable from an urban design perspective. Silva Cells can be considered to support tree growth. • Saturated hydraulic conductivity will be a key metric that CH is interested in reviewing when the geotechnical information becomes available. • CH indicated that retaining wall is preferred adjacent to CC#9 as it minimizes channel realignment. • Details regarding construction practices and monitoring of SWM measures with respect to LID measures will be included in the EA. • An underdrain would be considered for the LIDs at detailed design if the geotechnical investigation indicates that it is warranted.	CIMA/Golder
6 NEXT STEPS	
• TAC#2 – June 8, 2017 from 2:00 p.m. to 4:00 p.m. at Halton Region. • PIC#2 – June 22, 2017 from 6:30 p.m. to 8:30 pm at Oakville Town Hall. • CH and Town of Oakville are invited to attend TAC#2 and PIC#2. • CH and Town of Oakville will be included in the circulation of the Draft ESR for review prior to finalization and 30-day public review period.	

MINUTES OF MEETING

CLIENT	:	Halton Region
PROJECT	:	Class Environmental Assessment Study for Ninth Line (Regional Road 13) Transportation Corridor Improvements from Dundas Street (Regional Road 5) to 407 ETR (Express Toll Route)
MEETING	:	Meeting with City of Mississauga
DATE OF MEETING	:	May 16th, 2017 at 2:30 pm
LOCATION	:	Halton Region 1151 Bronte Road, Oakville, Ontario Knatchbull Room
ATTENDEES	:	Matt Krusto, Melissa Green-Battiston (Halton Region) Leslie Green (City of Mississauga) Christopher Davidson (Golder) Stephen Keen, Jessica Dorgo (CIMA)
C.C. TO	:	Attendees

Note: If you believe that these minutes are lacking in accuracy, please inform the author who will make the necessary changes.

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DISCUSSION TOPICS	ACTION BY

1 WELCOME

- A meeting agenda was distributed to attendees.

2 STORMWATER MANAGEMENT OVERVIEW

- Golder provided an overview of the conceptual stormwater management strategy supported by a hardcopy of a PowerPoint presentation.
- A summary of the key conclusions from the presentation include:
    - North Oakville Creeks Subwatershed Study (NOCSS) guidelines cannot be met with standard bioretention
    - NOCSS guidelines can be met with infiltration trenches
    - A mix of existing SWM and LIDs is proposed
    - Physical constraints will likely require sections of super-pipe storage (Hwy. 407)
    - This model includes conservative assumptions for material with low infiltration. Analysis to be confirmed by geotechnical investigation results.
- LIDs are being utilized as the property constraints within the study area do not provide adequate space for a stormwater management pond.

3 REVIEW OF PRELIMINARY PREFERRED DESIGN

- CIMA presented an overview of the preliminary design for the north section (William Halton Parkway to 407ETR) and south section (Dundas Street to William Halton Parkway) of Ninth Line supported by roll-plan drawings.
- The City of Mississauga is currently undertaking the Ninth Line Land Use Study and a Ninth Line EA will commence following the City's completion of this study.
- It was noted that the design for the north section was reviewed with MTO and 407ETR on May 3, 2017.
- Throughout the north section, a multi-use trail is provided on the west side of the road only. City of Mississauga will review the transition of Ninth Line and the multi-use trail at Lower Base Line when the City's Ninth Line EA commences.
- Throughout the south section a multi-use trail and bicycle lanes are provided on both sides of the road.

4 CITY OF MISSISSAUGA COMMENTS

- City of Mississauga to determine if the Platinum Drive intersection is planned for signalization. — City of Mississauga

DISCUSSION TOPICS	ACTION BY
• City of Mississauga property will be required. The road widening will impact the adjacent gravel parking lot for the baseball diamond. CIMA to send Mississauga an image identifying the impacts and potential mitigation.	CIMA
• All other property impacts on the east side of Ninth Line are private properties.	
• Halton Region to confirm the City of Mississauga contacts on the study mailing list.	Halton Region
5 NEXT STEPS	
• TAC#2 – June 8, 2017 from 2:00 p.m. to 4:00 p.m. at Halton Region.	
• PIC#2 – June 22, 2017 from 6:30 p.m. to 8:30 pm at Oakville Town Hall.	
• City of Mississauga is invited to attend TAC#2 and PIC#2.	

Meeting Minutes

Meeting:	Meeting with Conservation Halton
Project:	Class Environmental Assessment Study for Ninth Line (Regional Road 13) Transportation Corridor Improvements from Dundas Street (Regional Road 5) to 407 ETR (Express Toll Route)
Date and Time:	July 26, 2018, 10:00 AM
Location:	Conservation Halton 2596 Britannia Road, Burlington, ON
Attendees:	Paul Bond (Conservation Halton) Ekaterina Sapozhnikova (Conservation Halton) Tawnia Martel (Conservation Halton) Holly Anderson (Conservation Halton) Alicia Jakaitis (Halton Region) Matt Krusto (Halton Region) Stephen Keen (CIMA+) Martin Scott (CIMA+) Jessica Dorgo (CIMA+) Christopher Davidson (Golder) (By Phone)

Note: Please advise author immediately of any errors or omissions.

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Discussion Topics	Action By
1. Introduction	
• Roundtable introductions.	
• Halton Region provided an overview of the study and noted that the purpose of this meeting is to re-engage Conservation Halton (CH) and provide an update on the study.	
• The last meeting with CH was held on May 16, 2017 to present the conceptual stormwater management (SWM) strategy.	
• Since the May meeting, Halton Region has undergone restructuring which has led to a delay in the project to allow new members of the Project Team to familiarize themselves with the study. Alicia Jakaitis is supporting Matt Krusto with finalizing the Environmental Study Report (ESR) and Ann Larkin (not in attendance) is the new Supervisor of Transportation Planning for Halton Region.	
• No significant changes have been made to the preferred SWM strategy or the draft environmental reports since May 2017. This meeting will provide an overview of the preferred SWM strategy prior to submitting the draft reports to CH for review.	
• Halton Region noted that the proposed culvert lengths will be reviewed during detailed design to ensure the most up-to-date information is utilized.	Halton Region
• Halton Region noted that the low impact development (LID) strategy will be reviewed at detailed design and updated if required to reflect the most up-to-date information and methods available.	Halton Region
2. Project Overview	
• CIMA presented an overview of the study facilitated with a PowerPoint presentation.	
• The study area was divided into a north section and south section due to the specific constraints in each area. The north section is constrained by four Highway 403/407 ETR structures with limited space for widening. The south section is constrained by the North Oakville East Complex Provincially Significant Wetland, Joshua's Creek tributary, as well as several properties (e.g. Fern Hill School).	
• The preferred design for the south section is a "best fit" alignment with mitigated impacts to the critical features in the study area. The preferred design for the north section is a	

Discussion Topics	Action By
mitigated cross-section in order to avoid reconstruction of the structures. • Retaining walls are planned at the Joshua's Creek crossing and at the wetland to reduce impacts and the amount of fill required.	
3. Overview of Consultation with CH	
• An overview of the consultation activities with CH through the study was presented.	
• The comments received from CH throughout the study have been incorporated into the recommended design.	
• It was noted that the SWM strategy being presented at this meeting is similar to that presented at the May 16, 2017 meeting.	
4. Preferred SWM Design	
• The preferred SWM strategy was aimed to meet the quality and quantity targets of Halton Region, Town of Oakville North Oakville Creeks Subwatershed Study (NOCSS), Conservation Halton and the Ministry of Natural Resources and Forestry.	
• SWM ponds are proposed within the study area however the timing for implementation of the ponds was unknown.	
• The SWM assessment considered two options for LID; bioretention and infiltration trenches as well as larger superpipes with orifice control.	
• Infiltration trenches below the right-of-way with oil-grit separators are recommended. Superpipes and external ditches are also recommended.	
• As requested by CH, CC#7 contains dry benches for wildlife passage.	
• Flow dissipation at CC#9 will be investigated during detailed design.	Halton Region
• CH inquired if the 100-year storm is greater than the Regional storm. Golder confirmed that typically the Regional storm is measured using a one-hour timescale and the 100-year storm is measured in a 5-minute period. The peak rainfall in the 5 minute period was greater than that Regional storm.	
• CH inquired what SWM criteria was utilized for the assessment. Golder confirmed that the NOCSS targets for 0.015 $\frac{m^3}{s}/ha$ for the 100-year storm and 0.44 $\frac{m^3}{s}/ha$ for the Regional storm were used. Infiltration trenches and superpipes are required to meet	

Discussion Topics	Action By
the NOCSS targets. The design is based on the NOCSS targets.	
• CH inquired if the road grading allows for catchment (i.e. inlet capacity). Golder noted that the SWM assessment and report do not discuss inlet capacity.	
5. Next Steps	
• The following reports were provided to CH for review: o Natural Environment Assessment o Stormwater Management o Fluvial Geomorphic Assessment o Hydrogeological Investigation	
• CH to advise if comments can be submitted by the September 7, 2018 target date.	Conservation Halton
• Filing of the ESR is tentatively planned for late December/January 2019.	
• CIMA to send CH an electronic copy of the environmental reports and PowerPoint presentation from today's meeting.	CIMA

Meeting Minutes

Meeting	:	Meeting with Oakville Hydro
Project	:	Halton Region Ninth Line Improvements Municipal Class Environmental Assessment
Date / Time	:	September 6, 2019, 10:00 AM
Location	:	Halton Region, 1151 Bronte Road, Oakville, Ontario - Aldershot Room
Attendees	:	• Daniela Motoc, Oakville Hydro • Ann Larkin, Halton Region • Alicia Jakaitis, Halton Region • Martin Scott, CIMA • Jessica Dorgo, CIMA

Note: please advise author immediately of any errors or omissions

Discussion Topics	Action By

Purpose of Meeting: The purpose of the meeting is to review the preliminary design and property requirements in order to accommodate the proposed hydro relocations.

1. Study Overview

1.1.

The Region is undertaking a Class EA for the widening of Ninth Line from two to four lanes between Dundas Street and Highway 407. During the development of the design alternatives, Ninth Line was divided into two sections:

- North Section – Ninth Line between the future William Halton Parkway and 407ETR
- South Section – Ninth Line between Dundas Street and the future William Halton Parkway
- The intersection of William Halton Parkway and Ninth Line has been designed for a roundabout. This intersection is being designed and constructed as part of a separate Halton Region project. The intersection of Dundas Street at Ninth Line has already been widened and reconstructed.

The preliminary design includes the following features:

- North Section
  - 4-lane roadway
  - Raised centre median
  - 4m multi-use trail (MUT) on the west side of the road (2-way)
- South Section
  - Nominal 35 metre right-of-way
  - 4-lane undivided roadway
  - 3m multi-use trail (MUT) on both sides of the road
  - On-road bicycle lanes on both sides of the road
  - Dedicated left-turn lanes for improved property access

2. Utility Relocation Review

2.1.

Oakville Hydro currently has main feeders located on the east side of Ninth Line within the study limits. These hydro facilities will require relocation to accommodate the widening of Ninth Line to four lanes.

Discussion Topics		Action By
2.2.	Two options for relocations were presented: Relocation Option 1 – East: Existing Hydro located on Ninth Line is shifted further east to accommodate the road widening or Relocation Option 2 – West: Existing hydro is relocated to the west side of Ninth Line	
2.3.	Relocation Option 1 – East: • Generally within the proposed future ROW • Constrained by two retaining walls • Located in between road and retaining wall (at retaining wall locations) • 1.5 metres between edge of pavement and face of pole • Minimum 3.5 metres between pole and property line	

2.4.	Relocation Option 2 - West:
	• Generally within the proposed future ROW
	• Located in between road and retaining wall (at retaining wall locations)
	• 1.5 metres between edge of pavement and face of pole
	• Minimum 3.5 metres between pole and property line
	• Constrained crossing:
	  ○ One private residence
	  ○ Two retaining walls
	  ○ Fern Hill school
	  ○ Glen Oaks	

2.5.	Based on the constraints on the west side of Ninth Line (i.e. Fern Hill School, Glen Oaks, etc.) the Project Team indicated that utility relocation on the east side was preferred.	
2.6.	Attached are Relocation Option 1 – East (preferred) and Relocation Option 2 – West.	

3. Oakville Hydro Comments:

3.1.	Oakville Hydro noted that the minimum offset requirement between hydro poles and the property line is 3.5 metres, based on a span of 48 metres between poles. The maximum span is 85 metres. No minimum offset to the curb was noted.	
3.2.	The hydro poles should be located as far offset from the culverts as possible.	
3.3.	Oakville Hydro noted that a 2.0 metre offset from the retaining wall to the pole would be ideal (1.0 metre minimum). Oakville Hydro to confirm the CSA required clearance from the hydro poles to the retaining walls.	Oakville Hydro
3.4.	Oakville Hydro noted that it is preferable if the poles are not located within the existing ditch.	
3.5.	Oakville Hydro noted that burying the hydro would be approximately eight times the cost of relocating the facilities above ground. Burying the facilities may present issues due to the culvert crossings. 0.9 metres from top of the duct to grade would be required for burials. Oakville Hydro noted this is not the preferred option however; this option may be explored during detailed design should relocation issues arise.	
3.6.	Oakville Hydro also noted that future plans for William Halton Parkway show the future hydro facilities on William Halton Parkway tying into the east side of Ninth Line.	
3.7.	Additional consultation with Oakville Hydro will be required during detailed design to determine pole depths, potential requirements for pre-grading, etc.	

4. Next Steps

4.1.	Study Team is meeting with Conservation Halton (CH) in the Fall 2019 to discuss impacts of hydro relocations at the provincially significant wetland and Joshua Creek crossing.	
4.2.	The project is scheduled to be completed and filed in Winter 2020.	
4.3.	Construction for the widening of Ninth Line is currently planned for 2025, with detailed design commencing approximately 1 year in advance of construction.	

Discussion Topics		Action By
5. Post Meeting Update		
5.1.	CIMA reviewed the cross-sections to confirm if the future poles would be located in the existing ditch. Some poles would be located in the existing ditch on a temporary basis (i.e. until construction when they would be relocated and no longer in the ditch). This only applies to a small number of poles. The majority of the poles are not located within the existing ditch.	
5.2.	Following the meeting the project team met with CH on October 8, 2019. CH noted a preference for the hydro to be relocated on the east side (Option 1) between the road and retaining wall in order to reduce long-term disturbance.	

Jessica Dorgo, EIT

Meeting Minutes

Meeting	:	Meeting with Conservation Halton
Project	:	Halton Region Ninth Line Improvements Municipal Class Environmental Assessment
Date / Time	:	October 8, 2019, 9:30 AM
Location	:	Conservation Halton, 2596 Britannia Road, Burlington, ON
Attendees	:	• Matt Howat (Conservation Halton) • Ekaterina Sapozhnikova (Conservation Halton) • Tawnia Martel (Conservation Halton) • Alicia Jakaitis (Halton Region) • Ann Larkin (Halton Region) • Martin Scott (CIMA+) • Jessica Dorgo (CIMA+) • Christopher Davidson (Golder) (By Phone)

Note: please advise author immediately of any errors or omissions

Discussion Topics	Action By

Purpose of Meeting: The purpose of the meeting is to review the responses to CH's comments (dated August 30, 2018), utility relocation options and next steps for the study.

1. Study Overview

1.1.	CIMA provided a PowerPoint presentation to facilitate discussion (attached).	
1.2.	CIMA presented an overview of the study area noting the key study area constraints including: • Joshua's Creek crossing • North Oakville-Milton East Complex Provincially Significant Wetland (PSW) • Four (4) culverts north of William Halton Parkway within the Study Area • Six (6) culverts south of William Halton Parkway within the Study Area • Species at Risk (Barn Swallows and Bobolink)	
1.3.	An overview of the project was provided noting that the Region is undertaking a Class EA for the widening of Ninth Line from two to four lanes between Dundas Street and Highway 407. During the development of the design alternatives, Ninth Line was divided into two sections: • North Section – Ninth Line between the future William Halton Parkway and 407ETR • South Section – Ninth Line between Dundas Street and the future William Halton Parkway • The intersection of William Halton Parkway and Ninth Line has been designed for a roundabout. This intersection is being designed and constructed as part of a separate Halton Region project. The intersection of Dundas Street at Ninth Line has already been widened and reconstructed.	

Discussion Topics		Action By

1.4.	The preliminary design includes the following features:
	• North Section
	  • 4-lane roadway
	  • Raised centre median
	  • 4m multi-use trail (MUT) on the west side of the road (2-way)
	• South Section
	  • Nominal 35 metre right-of-way
	  • 4-lane undivided roadway
	  • 3m multi-use trail (MUT) on both sides of the road
	  • On-road bicycle lanes on both sides of the road
	  • Dedicated left-turn lanes for improved property access	

2. CH Comments – General		

2.1.	The most recent meeting with CH was held on July 26, 2018. Following the meeting, comments received from CH focused on:
	• SWM Comments
	  ○ Use of Rational Method
	  ○ HEC-RAS model files / SWMM5 model results
	  ○ Confirmation of Culvert Sizing (CC#8, CC#9)
	  ○ External Ditches / swales (interceptor flat bottomed ditches within the ROW)
	  ○ Water Quality
	• Future Hydro Pole locations
	• Fluvial geomorphic assessment
	• Natural Environment	

2.2.	A table outlining proposed responses to CH's comments was provided to CH for review.	
3. CH Comments – Stormwater Management		
3.1.	An overview of the stormwater management (SWM) modelling and results was presented. The results of the hydraulic assessment suggest that the existing culverts are not able to pass the estimated design peak flows (1:100yr or Regional storm) without overtopping the existing road.	

Discussion Topics		Action By
3.2.	The preferred SWM design includes: • Replacement of CC#7 north of the existing culvert to connect the two wetland sections. This culvert includes wildlife passage and dry benches. The length of the culvert has been minimized with retaining walls to reduce impact to the PSW. • A new wetland outflow culvert (CC#8) to direct wetland outflow north of the school • Removal of CC#10 and replacement with CC#9. CC#9 is a larger culvert at the Joshua Creek Tributary that provides sufficient capacity and barn swallow habitat. The length of the culvert has been minimized with retaining walls to reduce channel realignment.	
3.3.	Golder noted that CC#9 is not being relocated. CC#8 is being relocated.	
3.4.	Flow that previously passed though CC#8 is being redirected to CC#9. CC#8 has been relocated upstream. Flow that previously passed through the downstream end of CC#9 is now being redirected through ditches to the upstream end of CC#9.	
3.5.	The North Oakville Creeks Subwatershed Study (NOCSS) was used to sets target peak flow rates. The results of the SWM assessment suggest that significant increases in culvert size would be required to convey the peak design flow rate.	
3.6.	The proposed stormwater management system was designed to satisfy targets from Halton Region (1:100 year and Regional storm events), Town of Oakville (NOCSS), Conservation Halton (LID and wildlife passage/dry benches at CC#7), and Ministry of Natural Resources and Forestry (consideration for barn swallow habitat in CC#9).	

Discussion Topics		Action By
3.7.	The SWM assessment was undertaken which included a review of potential SWM strategies: • LID Options (Bioretention and/or Infiltration Trenches) • Superpipes • External ditches The Assessment concluded that the preferred SWM strategy includes: • Infiltration trenches (meets 1:100 year storm event) • Superpipes (meet the Regional storm event in conjunction with infiltrations trenches) • External ditches	
3.8.	A review of the current available SWM technologies will be conducted at detailed design and the SWM approach will be updated if more appropriate methods are available. This is noted in the commitments to further work table in the Environmental Study Report (ESR).	
3.9.	Golder/CIMA to provide CH with the input and output results for the models (i.e. drainage areas, etc.) for CH to confirm if the correct peak flow was used at the Highway 403 bridge.	Golder/CIMA
3.10.	Golder confirmed that the NOCSS peak flow rates are provided for the entire right-of-way width.	
3.11.	CH inquired if another control will be provided to control the additional flow through the CC#9. Golder confirmed that the future condition model include the changes in drainage pattern. Controls are provided for right-of-way drainage only. This is illustrated in the hydraulic model. CH noted that the model can be confirmed at detailed design.	
4. CH Comments – Fluvial Geomorphology		
4.1.	The fluvial geomorphic assessment involved the characterization of baseline channel morphology and the associated delineation of the relevant hazard limits at water crossings that supported natural channel form with defined bed and banks. This was limited to the channel feature in the vicinity of Culvert #9 (i.e., reach lengths RL-01 and RL-02).	

Discussion Topics		Action By
4.2.	The recommended span of Culvert #9 is proposed to accommodate the identified fluvial geomorphic processes and hazards at RL-01 and RL-02 is 4m x 1.2m (0.5m to 1m bankfull width).	
4.3.	The proposed geometry of Culvert #9 is expected to sufficiently account for channel form and function at RL-01 and RL-02, recognizing that the preliminary design of Culvert #9 includes a span that is wider than 3 times bankfull width (which was 1.0m downstream). The proposed substrate sizing at Culvert #9 will be refined as part of the detailed design phase of the project.	
4.4.	CH requested mapping of the meander belt for the creek in GIS format.	
5. CH Comments – Natural Environment		
5.1.	As requested, additional discussion has been provided in the revised Natural Environment Report regarding: • Regionally Rare and Regionally Uncommon species • Description of each type of ELC unit • Significant Wildlife Habitat • Significant Woodlands • Opportunities and Constraints • Barriers to Fish Passage	
5.2.	CH requested a copy of the ecological land classification cards associated with the mapping. Golder/CIMA to provide.	Golder/CIMA
6. Hydro Relocation Review		
6.1.	The project team met with Oakville Hydro on September 6, 2019 to discuss potential hydro relocations options.	
6.2.	At the meeting with Oakville Hydro, the Project Team indicated that utility relocation on the east side was preferred based on the constraints on the west side of Ninth Line (i.e. Fern Hill School, Glen Oaks, etc.).	
6.3.	Oakville Hydro noted that the minimum offset requirement between hydro poles and the property line is 3.5 metres, based on a span of 48 metres between poles. Oakville Hydro noted that a 2.0 metre offset from the retaining wall to the pole would be ideal.	

Discussion Topics		Action By
6.4.	CIMA presented two options for CH's review: • Option 1 - Hydro pole located between road and retaining wall (requires a 2 metre shift of retaining wall). Requires the length of CC#7 and CC#9 to be increased by 2 metres (i.e. to 47 m and 38.5 m, respectively) to accommodate 2 metre shift of retaining wall. • Option 2 - Hydro pole located beyond retaining wall.	
6.5.	CH noted a preference for Option 1 to eliminate long-term disturbance to the PSW.	
6.6.	CH noted that Option 2 may have issues with water collecting at the base on the poles if corrugated steel pipes are installed vertically at the poles (to reduce PSW impact). Jogging the hydro lines may also cause issues.	
6.7.	It was noted that the additional 2 metre shift of the retaining walls to accommodate the hydro relocation (option 1) has less impact to the PSW than providing only fill.	
6.8.	CH to review the hydro relocations options internally and confirm preference.	Conservation Halton
7. Next Steps		
7.1.	The following revised reports were provided to CH for review: • Natural Environment Report • Stormwater Management Report • Fluvial Geomorphic Assessment Report • Hydrogeological Investigation Report	
7.2.	Following receipt of final comments from CH, the Project Team will proceed with finalizing the ESR. The Draft ESR will be circulated to agencies for a 6 week review period prior to filing. Filing of the ESR is tentatively planned for Winter/Spring 2020.	
8. Post-Meeting Update		
8.1.	Golder provide the requested hydraulic model input and output files as well as the ELC mapping cards.	
8.2.	Golder provided mapping of the meander belt for the Joshua Creek (only shapefile format available).	

Discussion Topics		Action By
8.3.	Following the meeting, CH provided comments on the revised technical reports and comment-response table (received October 11, 2019) noting that CH comments are satisfactorily addressed.	
8.4.	Additional comments regarding support for hydro relocation Option 1 were provided. A commitment to further work will be included in the Environmental Study Report noting that the impact to the PSW resulting from the hydro relocations will be reviewed at detailed design.	
8.5.	Provision of fish passage though the new proposed culvert will be assessed at detailed design. A commitment to further work is included in the ESR.	

Jessica Dorgo, EIT