



Dorchester Road & Oldfield Road Intersection Improvements

Municipal Class Environmental Assessment
Schedule 'B'

Public Information Centre

Wednesday July 6th, 2022

5:00pm – 7:00pm

McBain Community Centre, Multi Purpose Room D/E, Second Floor
7150 Montrose Road, Niagara Falls, ON

ABOUT THE STUDY

The City of Niagara Falls is conducting a **Municipal Class Environmental Assessment (MCEA)** to identify the needs and opportunities for improvements at the intersection of **Dorchester Road and Oldfield Road**. **Figure 1 illustrates the MCEA Study Area.**

DEFINING THE PROBLEM:

The intersection of Dorchester Road and Oldfield Road is a three-legged intersection with an all-way stop control (AWSC) and experiences a typical daily traffic volume of approximately 3,000 vehicles (2021). Based on the findings of the transportation assessment for the intersection, traffic volumes are expected to increase significantly in the future due to planned development (Riverfront Community) and projected growth within the area. Under future traffic volumes, capacity issues and traffic delays are expected at the intersection with various traffic movements experiencing a failing Level of Service (LOS). Along with operational issues, the existing intersection lacks active transportation facilities and connectivity as well as an unconventional geometric layout.

Through the completion of this MCEA study, intersection alternatives have been developed and evaluated to improve future traffic operations, accommodate future development in the area, improve active transportation facilities and connectivity to existing and planned facilities, and continue to accommodate transit and large vehicles from the industrial properties to the southwest ensuring the safety of all road users.



Figure 1: MCEA Study Area

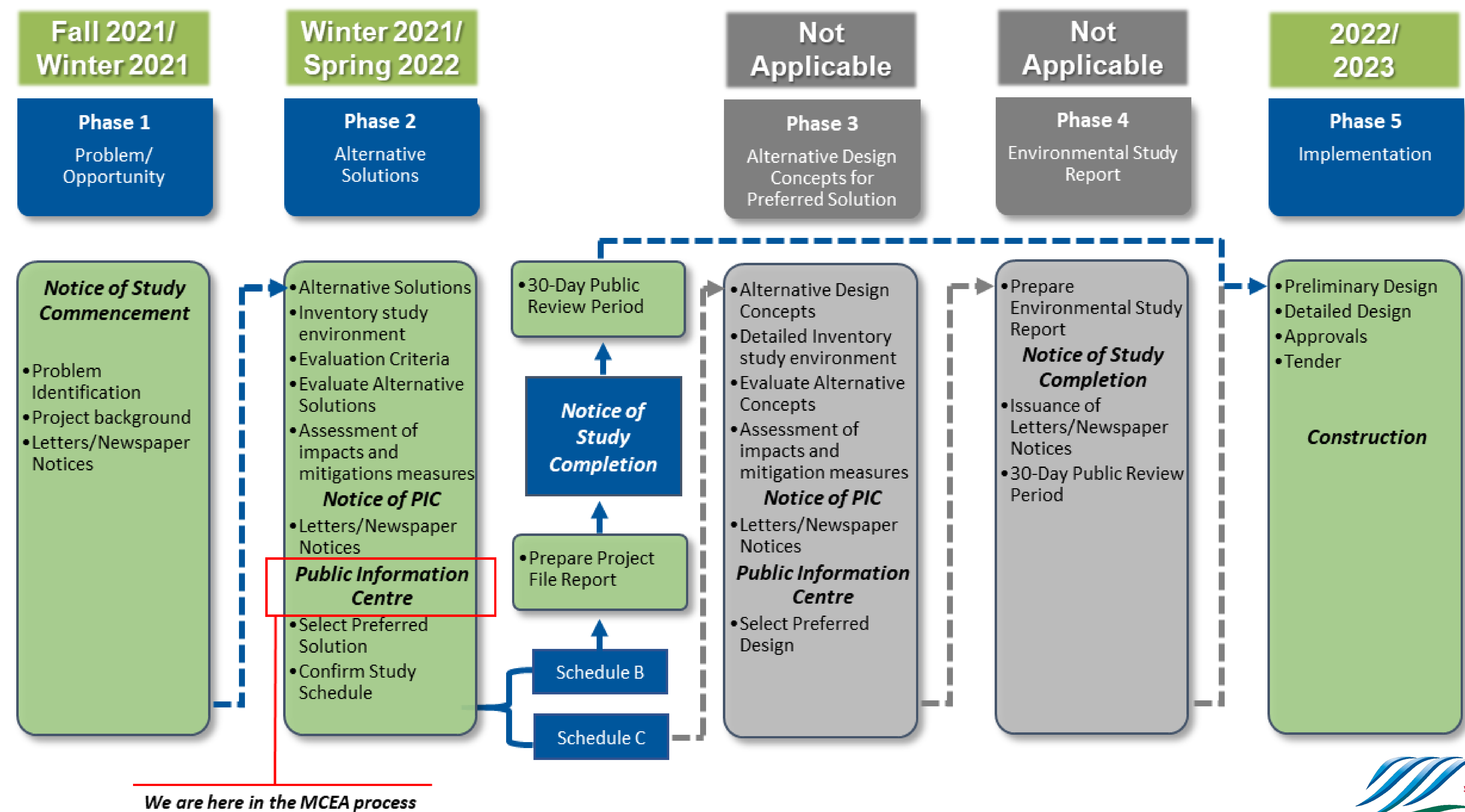
This Public Information Centre (PIC) presents the Study process; existing conditions and key considerations/issues; description of alternative solutions; evaluation criteria and process; recommended preferred solution; and next steps in the MCEA process.

We invite you to share your comments and questions about the information presented. Feedback from the community and stakeholders will be considered in finalizing the evaluation and design of the preferred alternative. Please complete a comment sheet or contact one of the project team members identified on the *Next Steps* page to provide feedback.

TIMELINE & PROCESS

The Municipal Class Environmental Assessment Planning and Design process (MCEA process) is used by municipalities to ensure that the requirements of the *Environmental Assessment Act* are met when undertaking capital works projects.

The **Dorchester Road & Oldfield Road Intersection Improvements MCEA** is being carried out as a **Schedule B** undertaking (Phases 1, 2 and 5) as presented in the flow chart below.



EXISTING CONDITIONS

The Study Area includes the intersection of Dorchester Road and Oldfield Road, located east of the QEW and Hydro Canal, south of McLeod Road (Regional Road 49) and north of the Welland River.

The intersection currently operates as an All-Way Stop Control (AWSC) with a 'Y' configuration consisting of north (Dorchester Road), southwest (Dorchester Road) and east (Oldfield Road) approaches. There are no active transportation (pedestrian or cyclist) facilities at the intersection.

The surrounding land use consists of mature residential subdivisions to the north, new residential subdivisions to the east and commercial/industrial to the southwest. A Hydro One corridor traverses north of the intersection.

KEY CONSIDERATIONS:

Several key considerations guided the development and evaluation of alternative solutions for the intersection, including:

- Future traffic operation
- Future development surrounding the Study Area
- Active transportation amenities (pedestrian and cyclists)
- Existing Right-of-Way (ROW) limits and property impacts
- Location of existing utilities
- Planned capital projects (Dorchester Road Reconstruction)
- Future trail projects (Millennium Trail and Fern Park Trail)

PROPOSED STUDY ALTERNATIVES:

Based on the Problem and Opportunity Statement and key considerations, proposed study alternatives for the intersection of Dorchester Road and Oldfield Road include:

- Alternative 1 – Do Nothing
- Alternative 2 – All-Way Stop Control (AWSC) with Geometric Improvements
- Alternative 3 – Signalized with Geometric Improvements
- Alternative 4 – Roundabout

Several background studies have been completed to help characterize the Study Area and evaluate the proposed study alternatives, including:

- Transportation Assessment
- Archaeological Assessment
- Natural Environment Assessment

TRANSPORTATION ASSESSMENT

The purpose of the Transportation Assessment was to assess the existing and future traffic operation and impacts that the proposed study alternatives will have on the intersection of Dorchester Road and Oldfield Road.

Characteristics of the intersection of Dorchester Road and Oldfield Road include:

- Both Dorchester Road and Oldfield Road are classified as arterial roadways with two lanes of traffic
- Operates as an All-way stop control (AWSC)
- Serviced by City of Niagara Falls Transit
- Conventional on-road bike lanes exist on both sides of Oldfield Road only
- A sidewalk exists on the north side of Oldfield Road and on the west side of Dorchester Road (terminating approximately 60m from the intersection)
- Collision history is low with only six (6) collisions occurring over the last 5-years

EXISTING OPERATIONAL ASSESSMENT

- For each of the study alternatives, under existing conditions (2021), the LOS for AM and PM peak times are:

Alternative	AM Peak LOS	PM Peak LOS
1 - Do Nothing (existing conditions)	A	A
2 - AWSC with Geometric Improvements	A	A
3 - Signalized Intersection	A/B	A/B
4 - Roundabout	A	A

FUTURE OPERATIONAL ASSESSMENT

- The intersection was analyzed under future conditions (2031 and 2041) for both AM and PM peak times for each of the study alternatives
- Future conditions included anticipated volume associated with the Riverfront Community

2031

Alternative	AM Peak LOS	PM Peak LOS
1 - Do Nothing (existing conditions)	A/B	D/F*
2 - AWSC with Geometric Improvements	A/B	B/D
3 - Signalized Intersection	A/C	A/B
4 - Roundabout	A	A

*Eastbound Left/Through Lane

2041

Alternative	AM Peak LOS	PM Peak LOS
1 - Do Nothing (existing conditions)	A/B	D/F*
2 - AWSC with Geometric Improvements	A/B	B/D
3 - Signalized Intersection	A/C	A/B
4 - Roundabout	A	A

*Eastbound Left/Through Lane

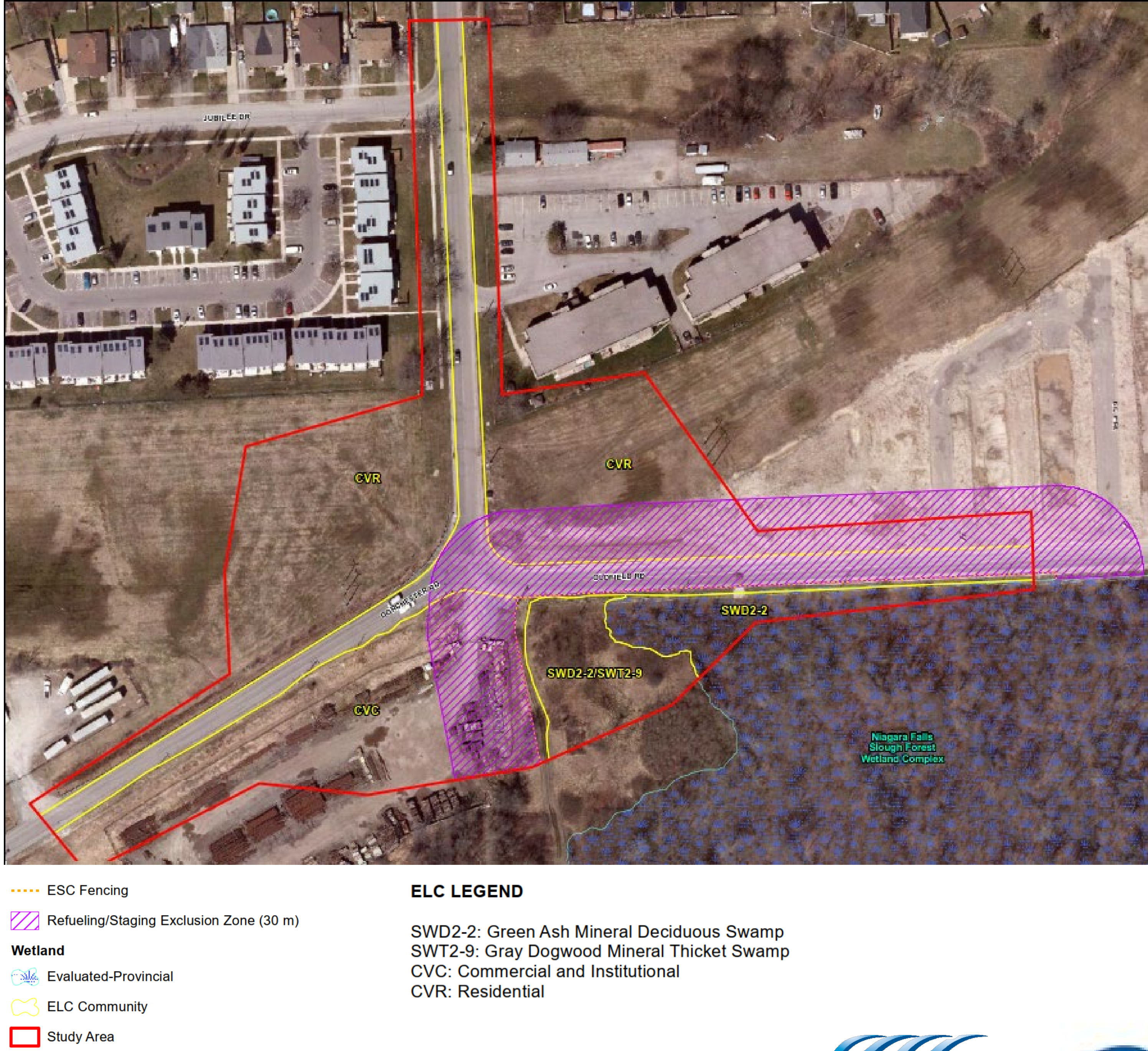
Level-of-Service (LOS) relates directly to average delays per vehicle with established LOS grades A through F, where A represents the highest level of service (least amount of delay) and F represents the lowest (unacceptable delays) – in general LOS A through D is acceptable, LOS E is cause for concern and F is unacceptable and triggers mitigating action.

ARCHAEOLOGICAL AND NATURAL ENVIRONMENT ASSESSMENTS

A Stage 1 Archaeological Assessment was completed for the Study Area. The Assessment determined that parts of the Study Area have been previously disturbed or assessed and do not retain archaeological potential. If the project limits extend into the green zone (map below) then a Stage 2 Archeological Assessment will be required.



A Natural Environment Assessment was completed for the Study Area. The Assessment determined that a part of the Study Area is an evaluated provincial wetland. If the project limits extend into this area then further investigation and risk mitigation measures will be required. No Species at Risk (SAR) were identified within the Study Area.

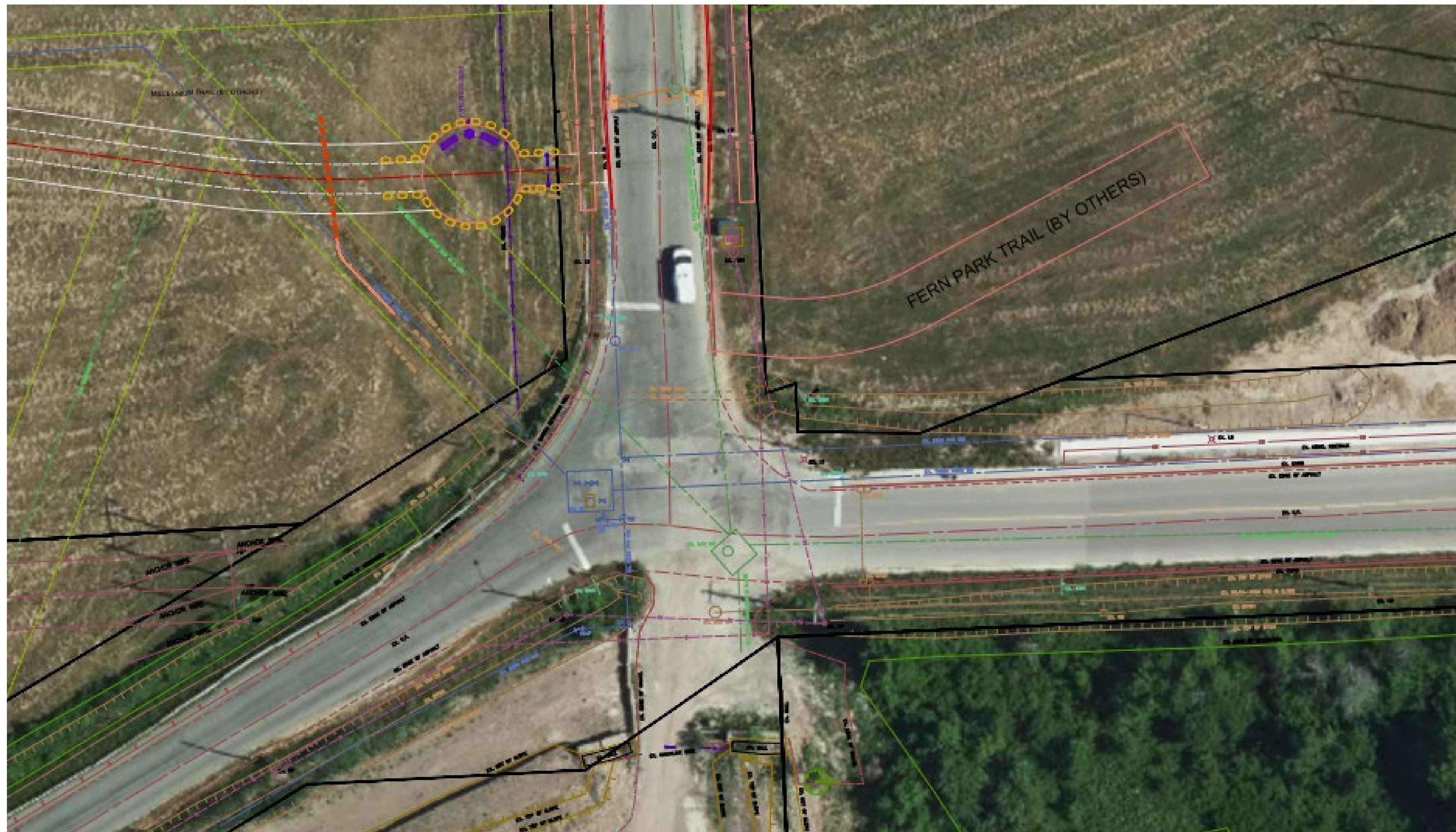


ALTERNATIVE SOLUTIONS

Throughout the MCEA process the following Alternative Solutions are being considered:

ALTERNATIVE 1: Do Nothing

- Intersection of Dorchester Road and Oldfield Road remains in its existing condition. No opportunity to improve the existing geometry and active transportation facilities to accommodate future development.
- This alternative is considered as a benchmark for comparison and required in all MCEA studies.



ALTERNATIVE SOLUTIONS

ALTERNATIVE 2: All-way Stop Control (AWSC) with Geometric Improvements

- Dorchester and Oldfield Road intersection will remain an all-way stop control (AWSC) intersection
- Geometric improvements to horizontal alignments to function as a T-intersection with better sightlines
- Inclusion of active transportation facilities (sidewalks, bike lanes and cross-walks)
- Addition of dedicated turn lanes to improve operation and LOS of turning movements



Advantages:

- Improves visibility of the traffic control device for all movements
- Provides crosswalk facility on north and southwest approach (Dorchester Road)
- Sidewalk extension on north side of Oldfield Road improves pedestrian accessibility
- Provides cyclist facilities on all approaches to tie into existing/proposed facilities
- Pedestrian crossings are controlled
- Provides dedicated turning lanes to minimize delay and improve operation of intersection
- Less maintenance than traffic control signals
- Lowest construction cost
- No impact to surrounding property

Disadvantages:

- Vehicle idling will affect air quality
- No change in vehicle noise
- Minor utility impacts

ALTERNATIVE SOLUTIONS

ALTERNATIVE 3: Signalized with Geometric Improvements

- Dorchester and Oldfield Road intersection will become signalized intersection
- Geometric improvements to horizontal alignments to function as a T-intersection with better sightlines
- Inclusion of active transportation facilities (sidewalks, bike lanes and cross-walks)
- Addition of dedicated turn lanes to improve operation and LOS of turning movements



Advantages:

- Improves visibility of the traffic control device for all movements
- Provides controlled pedestrian crossings
- Provides crosswalk facility on north and southwest approaches (Dorchester Road)
- Sidewalk extension on north side of Oldfield Road improves pedestrian accessibility
- Provides cyclist facilities on all approaches to tie into existing/proposed facilities
- Provides dedicated turning lanes to minimize delay and improve operation of intersection
- No impact to surrounding property

Disadvantages:

- Introduces minor delays to traffic during off peak hours
- Vehicle idling will affect air quality
- No change in vehicle noise levels
- Will require signal maintenance
- Minor utility impacts

ALTERNATIVE SOLUTIONS

ALTERNATIVE 4: Roundabout

- Dorchester and Oldfield Road intersection will become single lane roundabout
- Inclusion of active transportation facilities (sidewalks, bike lanes and cross-walks)



Advantages:

- Reduces approach speeds in all directions which facilitates improved gap acceptance resulting in improved capacities
- Eliminates potential left-turn conflicts
- Provides crossing facility at all approaches
- Shortest continuous crossing for pedestrians
- Roundabouts have been proven to reduce the frequency and severity of collisions
- Roundabouts operate with lower delays and shorter queues than other forms of control
- Creates an aesthetically pleasing focal point within a community
- Less maintenance than traffic signals
- Sidewalk extension on all approaches improves pedestrian accessibility
- Roundabout is designed to accommodate transport trucks and busses

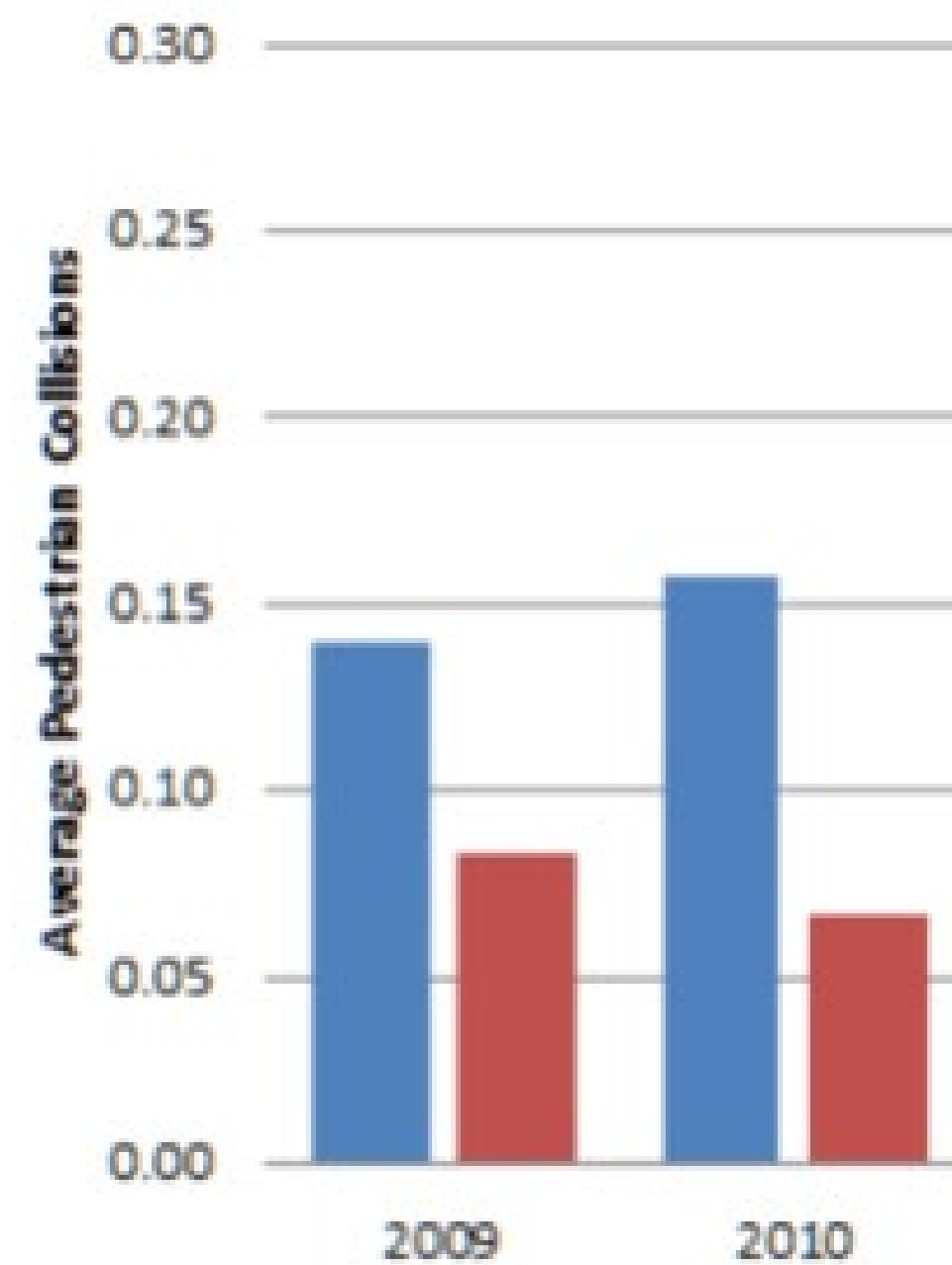
Disadvantages:

- Highest construction cost alternative but lower life cycle cost than signals
- Roundabouts may be more challenging for pedestrian with vision impairment or mobility challenges
- Cyclists consideration requires off-road treatments further increasing construction costs, property and utility impacts
- May require public education and outreach prior to construction as roundabouts are still not a familiar form of traffic control for many drivers, cyclists, and pedestrians
- Significant utility impacts
- Requires land acquisition

PEDESTRIAN EXPERIENCES AT INTERSECTIONS

There are four (4) components of the pedestrian experience at intersections:

1) Statistical Level of Safety



2) Feeling of Safety (Security)



3) Level of Accessibility



4) Convenience



PEDESTRIAN SECURITY AT TRAFFIC SIGNALS

- Pedestrians often feel safer at intersections with traffic signals because of the pedestrian signals
- This feeling of safety (security) happens when the signals tell them it's "safe" to cross
- Most crashes involving pedestrians occur when drivers turn left or right across the crosswalk while the pedestrian has a Walk indication
- There are a greater number of vehicle-pedestrian conflict points at a signalized/stop control intersection than at a roundabout

PEDESTRIAN SAFETY AT ROUNDABOUTS

- Statistically, roundabouts (especially single-lane) are safer for pedestrians than traffic signals
- Traffic speeds are lower, giving pedestrians and drivers more time to judge gaps and react to each other
- Roundabouts are designed to lower vehicle speeds as drivers approach, giving pedestrians and drivers more time to judge gaps and react to each other
- The crossing distance for pedestrians is less
- Pedestrians need only watch for traffic in one direction at a time
- Drivers are more likely to be looking in the direction of pedestrians, instead of up at signals or left while turning right

EVALUATING THE ALTERNATIVES

As part of the MCEA process, the developed alternatives are evaluated against a set of criteria to determine the preferred solution for the Study Area. The criteria that were used to evaluate the proposed alternatives are summarized below. The evaluation matrix summarizing the evaluation of each alternative is provided on the next display.

Evaluation Criteria	Weight	Performance Measure
Vehicular Transportation	28%	- Anticipated traffic performance - Impacts to existing and future traffic conditions - Safety - Compatibility and connectivity with the local road network - Ability and need to accommodate planned developments
Active Transportation	28%	- Statistical level of safety - Feeling of safety - Level of Accessibility - Compatibility and connectivity with the local road network - Ability and need to accommodate planned developments
Natural Environment	5%	- Potential encroachment to designated natural areas - Impacts to significant wildlife and their habitat, including Species at Risk (SAR) - Impacts to vegetation communities - Change in quantity and quality of stormwater runoff - Impacts to air quality due to vehicle travel and congestion
Socio-Economic Environment	10%	- Impacts to private properties and possible need for land acquisition - Opportunity to improve urban design and streetscaping - Potential for increase in traffic noise - Opportunity to promote active transportation and healthy choices - Impacts of construction on local road users
Cultural Environment	4%	Displacement or disruption of built and cultural heritage features or archaeological resources
Engineering/Constructability	10%	- Impacts on existing utilities and need for utility relocation or implementation - Key considerations for design and construction - Future maintenance
Cost Consideration	15%	- Construction Capital costs - City's operating costs

EVALUATION SCALE:

- To provide an impartial, traceable and consistent evaluation, as required by the MCEA process, the following method was used to illustrate the highest and lowest impact of each alternative relative to the evaluation criteria.
- The alternatives were evaluated against the seven (7) criteria using a five-point scale as summarized below, ranging from most desirable (50) to least desirable (10).

Rating	Numerical Rating	Colour Code
Most Desirable	50	
Better Choice	40	
Adequate Choice	30	
Worse Choice	20	
Least Desirable	10	

Criteria	Alt 1: Do Nothing	Alt 2: AWSC with Geometric Improvements	Alt 3: Signalized with Geometric Improvements	Alt 4: Roundabout
Vehicular Transportation	- Operation of intersection will diminish with future planned developments - Future peak hour delays are expected with eastbound left/through lane having LOS F (2031 & 2041) - Geometry of intersection remains unchanged	- Intersection will operate satisfactorily with future planned developments - Future peak hour delays are expected; however, improved with dedicated turning lanes - Dedicated eastbound left turn lane and through lane have LOS D (2031 & 2041) and southbound right turn lane reducing delay by 11 seconds per vehicle	- Intersection will operate satisfactorily with future planned developments - Future peak hour delays are minimized (v/c for all movements less than 0.85); however, delays during off-peak hours are increased - Traffic signal justification analysis resulted in low compliance with justification threshold	- Intersection will operate well with future planned developments - Low delays during future peak hours, as well as off peak hours - All movements have LOS A (2031 & 2041) - Statistically the safest type of intersection for all road users - Reduces approach speeds in all directions - Lowest conflict points for all options
	Worse Choice (5.6)	Better Choice (11.2)	Adequate Choice (8.4)	Most Desirable (14)
Active Transportation	- Lacking pedestrian facilities and connectivity - No dedicated facilities for cyclists	- Active transportation facilities provided and connected to existing and planned facilities surrounding study area - Longer crossing distances for pedestrians (crossing 3 lanes of traffic for each approach) - Controlled pedestrian crossings - Designated operating space for cyclists	- Active transportation facilities provided and connected to existing and planned facilities surrounding study area - Longer crossing distances for pedestrians (crossing 3 lanes of traffic for each approach) - Controlled pedestrian crossings - Pedestrians feel safest with signalized crossings - Designated operating space for cyclists	- Shortest crossing distances for pedestrians, pedestrians only have to look in one direction at a time - Designated operating space for cyclists and pedestrians - Statistically the safest type of intersection for all road users
	Least Desirable (2.8)	Better Choice (11.2)	Better Choice (11.2)	Most Desirable (14)
Natural Environment	No impacts to natural areas	- No impact to natural areas - Minor potential impact to roadside vegetation	- No impact to natural areas - Minor potential impact to roadside vegetation	- Minor impact to natural areas - Impact to roadside vegetation - Minor impacts to wetlands
	Most Desirable (2.5)	Better Choice (2)	Better Choice (2)	Adequate Choice (1.5)
Socio-Economic Environment	- No property impacts - No opportunity for streetscaping - No connectivity to promote active transportation - No inconvenience due to construction activities	- Potential minor property impacts for grading - Minor opportunity for streetscaping - Promotes active transportation - Moderate inconvenience during construction with staged lane closures	- Potential minor property impacts for grading - Minor opportunity for streetscaping - Promotes active transportation - Unwarranted signal may negatively impact road users - Moderate inconvenience during construction with staged lane closures	- Moderate property impacts/ acquisition to accommodate roundabout on Hydro One and private lands - Significant opportunity for streetscaping within central island - Will require public education program - Promotes active transportation - Moderate inconvenience during construction
	Adequate Choice (3)	Most Desirable (5)	Most Desirable (5)	Better Choice (4)
Cultural Environment	No impact	No impact; maintains all works within ROW	No impact; maintains all works within ROW	Minor impact outside of ROW; need for Stage 2 AA
	Most Desirable (2)	Most Desirable (2)	Most Desirable (2)	Better Choice (1.6)
Engineering/ Constructability	- No issues with existing utilities or construction - Status quo for maintenance - No constructability concerns	- Minor utility impacts requiring pole relocations - Status quo for maintenance	- Minor utility impacts requiring pole relocations - Will require signal maintenance	- Significant utility impacts requiring pole and hydro vault relocations - Will require minor landscaping maintenance (central island) - Grading along northeast quadrant may require retaining wall
	Most Desirable (5)	Better Choice (4)	Adequate Choice (3)	Worst Choice (2)
Cost Consideration	- No capital cost - Eventual cost to City to rehabilitate asphalt surface - No operating costs	- Moderate capital cost - No operating costs	- High capital cost - Operating costs of signal infrastructure	- Highest capital cost - No operating costs - Estimated life cycle cost 1.1 times greater than signalized intersection (within recommended 1.5 times threshold)
	Most Desirable (7.5)	Better Choice (6)	Adequate Choice (4.5)	Worst Choice (3)
OVERALL	Although doing nothing is the lowest-cost alternative, it will not address peak hour delays for future conditions or improve active transportation amenities and connectivity	Maintaining the AWSC with geometric improvements improves future peak hour delays with LOS D and active transportation amenities and connectivity; it has minor impact on utilities and no impact on property	A signalized intersection will improve future peak hour delays (v/c < 0.85) but introduce delays during off peak hours; improve active transportation amenities and connectivity, but has a greater capital and maintenance cost than AWSC; transportation assessment results identified signals are not warranted	The roundabout alternative will address peak hour delays (all movements LOS A), provide the best operational performance and improve safety of pedestrians and cyclists, as well as vehicle noise and speeds; however, will have the greatest impact on utilities and property and have the highest capital cost
RANKING	NOT RECOMMENDED (28.4)	RECOMMENDED (41.4)	NOT RECOMMENDED (36.1)	NOT RECOMMENDED (40.1)

NEXT STEPS

Once the preferred solution is confirmed and the MCEA study is finalized, the City will transition to design of the preferred solution, including:

- Develop detailed design of road works including streetscaping, signage and lighting;
- Develop detailed design of storm drainage modifications;
- Construction staging and review and recommendation including timing of works to determine anticipated construction schedule;
- Coordinate design requirements with regulatory agencies and obtain all necessary approvals and permits;
- Coordinate property easements/acquisitions (if required) to facilitate implementation of proposed works; and
- Coordinate relocation of utilities that are in conflict with proposed works, as required.

Following this PIC, the project team will:

- Integrate feedback received from the public and stakeholders;
- Confirm the Preferred Solution;
- Document the MCEA process including considerations for detailed design to be carried forward; and
- File the Project File Report for 30-day public review.

HOW YOU CAN GET INVOLVED:

- Ask questions and provide input today by talking with the team or filling in a comment form ([return by July 20, 2022](#))
- Visit the City's *Let's Talk Niagara Falls* platform for project updates and documentation
- Review the Project File Report once prepared (September 2022)

For any comments or questions, please contact:

NICK GOLIA

Senior Project Manager
City of Niagara Falls
4310 Queen Street
Niagara Falls, ON L2E 6X5
T: 905.366.7521 x4290
E: ngolia@niagarafalls.ca

ANDREA LAPLANTE

Project Manager
Associated Engineering (Ont.) Ltd.
Suite 301, 101 Lampman Court
Niagara-on-the-Lake, ON L0S 1J0
T: 289.434.4804
E: laplantea@ae.ca