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Project: (190486) Region of Peel Settlement Area Boundary Expansion Study

**To**

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**RE: REGION OF PEEL SETTLEMENT BOUNDARY AREA EXPANSION STUDY  
TRANSPORTATION TECHNICAL STUDY**

**TECHNICAL MEMORANDUM A – ASSESSMENT AND EVALUATION PROCESS  
AND INITIAL ASSESSMENT**

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This memorandum outlines the proposed assessment and evaluation process for the transportation component of the Region of Peel Settlement Area Boundary Expansion (SABE) Study. The memo also summarizes the findings of the transportation initial assessment.

## **Background**

The Region of Peel has embarked upon a comprehensive review of the Regional Official Plan (ROP) with the objective of updating policies and mapping that guide growth in Peel to the year 2051. Through the results of the **Peel 2041+** study, the updated ROP will make provisions for approximately 2.3 million residents and 1.1 million jobs in Peel Region to the year 2051 consistent with projections contained in *A Place to Grow*, the Provincial Growth Plan for the Greater Golden Horseshoe (the Growth Plan).

The Peel 2041+ study has identified the need for new lands outside the existing settlement area boundary to accommodate forecast population and employment growth in the Town of Caledon. The Region has retained Hemson Consulting to undertake the **Settlement Area Boundary Expansion (SABE) Study** to determine the appropriate location(s) for the additional residential and employment lands needed to serve this growth. The preferred expansion area(s) and complementary policies to guide development will be defined based on the results of a series of technical studies, including a transportation assessment being completed by Paradigm Transportation Solutions Limited as part of the Hemson team.

The first step in the SABE Study process has been to establish a broad area – known as the Focus Study Area (FSA) – to serve as the basis for the technical studies. The FSA comprises all lands in which the SABE area or areas *could* occur as supported by the results of the detailed investigations. The early stages of the SABE process was predicated on the residential and non-residential growth forecasts for the Region informed by the 2019 Growth

Plan (Schedule 3) to 2041. Following the release of the draft technical studies, the Province amended Schedule 3 and extended the planning horizon of the Growth Plan to 2051. This change increases the amount of land to be designated as part of the SABE process from about 1,300 hectares to approximately 4,300 hectares.

Preliminary forecasts assume the SABE will need to accommodate population growth of 183,500 people and additional employment of 67,700 jobs between 2021 and 2051. The size of the FSA is approximately 8,000 hectares, just under twice the size of the total estimated land need of 4,300 hectares required to accommodate these forecasts.

## Study Objectives and Approach

As one of the studies being conducted to help determine the SABE, the **Transportation Technical Study** identifies network capacity requirements in proximity to the expansion options being considered including both active transportation and transit infrastructure considerations. The analysis examines existing conditions, planned network expansion, potential growth projections, and travel demand forecasts. The study also identifies implications and initiatives required to accommodate potential growth.

The assessment and evaluation process for the Transportation Technical Study is being carried out in two steps consistent with the “filtering” approach being used for the broader SABE Study to identify the recommended SABE from the FSA. The process is as follows:

- ▶ The first step involves an **Initial Assessment** of the transportation implications of accommodating forecasted growth for different potential SABE expansion options. This qualitative screening examines the relative advantages and disadvantages of the alternative location(s) for additional residential and employment lands from a transportation perspective. The assessment considers the current/planned state of infrastructure improvements, examines potential constraints and impacts, and identifies areas more preferable for development than others as input into the broader SABE Study.
- ▶ The second step entails a **Detailed Evaluation** of the preliminary preferred SABE to help configure and refine the area. Using both qualitative and quantitative evaluation parameters, this step also includes sensitivity testing to help assess sub-alternatives of the preliminary preferred area from a transportation perspective. Required infrastructure to support development of the SABE is identified as well.

Both stages of the transportation assessment and evaluation distinguish areas more appropriate for residential development from lands more suitable for employment uses.



## Assessment and Evaluation Framework

**Table 1** (attached) details the assessment and evaluation framework for the Transportation Technical Study. The evaluation process specified in *Let's Move Peel – Long Range Transportation Plan 2019*<sup>1</sup> serves as the basis for the framework. The methodology specified in the Town of Caledon Transportation Master Plan (2018) was also considered (see **Appendix A**) but the LRTP approach was ultimately selected given its recency and to ensure consistency with other Region of Peel transportation planning initiatives. Other documents, including the Bolton Transportation Master Plan, Caledon Transit Feasibility Study, Metrolinx 2041 Regional Transportation Plan, Brampton Transportation Master Plan<sup>2</sup> and Brampton Active Transportation Master Plan, that did not factor into the framework will still be considered in completing the assessment and evaluation.

The proposed transportation assessment and evaluation framework is consistent with but more detailed than the criteria for defining the FSA specified in Table 2 of the *Settlement Area Boundary Expansion Study, Phase A: Focus Study Area* report<sup>3</sup>. By necessity, the FSA evaluation is broader and more encompassing than the transportation assessment.

Consistent with the LRTP<sup>4</sup>, the framework features five **categories** for assessment and evaluation of the different potential SABE expansion options from a transportation perspective, being:

- ▶ Transportation;
- ▶ Economy;
- ▶ Natural Environment;
- ▶ Social and Health; and
- ▶ Cultural Heritage.

The categories are further delineated into a series of assessment/evaluation **parameters** and associated **measures**, consistent with the methods applied in the LRTP for assessing future transportation planning alternatives. It is conceivable that certain parameters may be assessed more broadly through the “filtering” being carried out for the overall SABE Study, rendering consideration as part of the Transportation Technical Study unnecessary or redundant. Specifically, the *Public Facilities, Cultural Heritage and Health Assessment Technical Studies* are expected to assess some of these factors directly or indirectly (parameters in the “Social and Health” and “Cultural Heritage” categories in **Table 1**). The implications will be examined

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<sup>1</sup> Region of Peel, *Let's Move Peel: Long Range Transportation Plan 2019*.

<sup>2</sup> The City of Brampton is preparing to update its Transportation Master Plan. Also, the transit networks shown in the plan do not reflect the most recent Metrolinx Regional Transportation Plan (i.e. the Frequent Rapid Transit Network) or Brampton Transit's latest plans. City staff will provide guidance on updates to the plans for the Detailed Evaluation.

<sup>3</sup> Hemson Consulting in association with SvN, *Settlement Area Boundary Expansion Study, Phase A: Focus Study Area*, February 25, 2020, 11-16.

<sup>4</sup> Region of Peel, *Let's Move Peel: Long Range Transportation Plan 2019*, 62-71

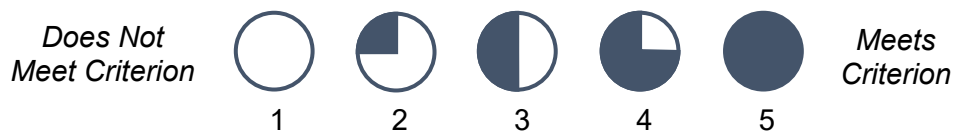


as the studies progress to ensure the assessment and evaluation approach for both the Technical Transportation Study and broader SABE Study remains technically robust and rigorous and avoids parallel (co-linear) criteria.

As **Table 1** shows, application of the parameters and measures differ for the **Initial Assessment** and **Detailed Evaluation** steps. This Initial Assessment step involves solely qualitative appraisals of the different potential SABE expansion options from a transportation perspective. Only six of the 13 LRTP evaluation criteria are assessed in the first step, commensurate with data availability and a “screening” level of precision required at this stage of the process.

The Detailed Evaluation step to follow will involve both qualitative and quantitative appraisals of the parameters based on all but two of the 13 LRTP evaluation criteria<sup>5</sup>. If appropriate, additional parameters outside the LRTP factors may be considered. The availability of population and employment forecasts at more disaggregate geography (i.e. Traffic Analysis Zone, Small Geographic Units) will enable use of the Region’s Travel Demand Forecasting Model (the EMME Model) to derive performance measures (e.g., volume to capacity ratios, vehicle kilometres of travel) for analysis and refinement. Geographical Information Systems (GIS) mapping, databases, and other tools (e.g., Region’s spreadsheet for emissions, Synchro model) will also be used to quantify implications for evaluation. Data requirements and availability will be discussed with Region of Peel staff as work progresses.

A Multiple Account Evaluation (MAE) framework will be used to compare alternatives and identify the preferred option from a transportation perspective for the Detailed Evaluation step. For each alternative, the parameters will be assigned a score between 1 and 5 based on the scale provided below:



For categories with multiple parameters, individual parameter scores will be averaged to derive an overall category score (out of 5). The alternatives will then be ranked based on total score for all categories (out of 25). The ranking scores will be supplemented with qualitative comments highlighting the advantages and disadvantages of each alternative, with potential impediments and constraints noted.

Sensitivity testing may be performed during the Detailed Evaluation step to examine how different weightings on the parameters or categories affect the findings. Testing may also be conducted with the Initial Assessment if factors requiring more nuanced examination emerge through the broader SABE Study.

<sup>5</sup> The LRTP evaluation criteria not proposed for consideration were “2.2 Cost of Congestion” and “4.1 Impact on Residents’ Physical and Mental Health”, as **Table 1** denotes in grey shading. The metrics will not vary materially between alternatives at this level of precision.



## Initial Assessment Findings

The first step in completing the Initial Assessment was to subdivide the FSA into eight potential SABE expansion options, each contiguous to one of the three existing settlement areas of Bolton, Tullamore, or Mayfield West. **Figure 2** (attached) illustrates the expansion options, or FSA sub-areas, defined for the assessment.

A qualitative appraisal of the different FSA sub-areas was completed from a transportation perspective based on the following six parameters listed in **Table 1**:

- ▶ Transportation
  - Impact on Sustainable Modes of Transportation (1.1)
  - Impact on Vehicle Traffic (1.2)
  - Impact on Road Network Connectivity (1.3)
- ▶ Economic
  - Impact on Goods Movement Flow (2.1)
- ▶ Natural Environment
  - Impact to Natural Heritage System (3.1)
- ▶ Cultural Heritage
  - Impact on Cultural Heritage Sites (5.1)

The assessment parameters and related measures detailed in **Table 1** provided the basis to screen the options. This screening process involved assessing the relative advantages and disadvantages of each sub-area option from a transportation perspective. Referencing **Figures 3, 4, 5, and 6** (see attached), the assessment considered the current/planned state of infrastructure improvements to the year 2041 per the LRTP<sup>6</sup>, examined potential constraints and impacts, and identified areas more preferable for development than others as input into the broader SABE Study. **Table 2** (attached) documents the transportation initial assessment findings.

**Table 3** (attached) summarizes the results from **Table 2**, denoting the relative merit of the different FSA sub-areas for residential and employment development based on the Initial Assessment. The relative preference for Residential or Employment Uses is a preliminary assessment and subject to further review. In the case of Option 3, the Provincially Significant Employment Zone designation was considered. The terms "more preferred" and "less preferred" in the table are intended to reflect implications relative to other sub-areas. All options are considered feasible from a transportation perspective.

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<sup>6</sup> Peel Region has not completed a formal assessment of future transportation needs beyond the LRTP horizon year of 2041.



The screening results suggest Expansion Options 2, 3, 6, 7 and 8 are more preferred for residential development than Expansion Options 1, 4 and 5 from a transportation perspective. For employment uses, Expansion Options 3, 4, 5 and 6 are more preferred than Expansion Options 1, 2, 7 and 8. This information will serve as input into the broader SABE evaluation process.

The **Detailed Evaluation** step will further differentiate and highlight the advantages and disadvantages of the potential settlement area boundary expansion from a transportation perspective through more detailed analysis of travel demand implications, as noted above.



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**TABLE 1: TRANSPORTATION TECHNICAL STUDY ASSESSMENT AND EVALUATION FRAMEWORK**

Parameter (from Section 6.2 LRTP)	Measure	Initial Assessment	Detailed Evaluation
<b>1. Transportation</b>			
1.1 Impact on Sustainable Modes of Transportation (i.e. active transportation, carpooling and transit)	Positive or negative operational impacts on active transportation, carpooling and transit	<b>Qualitative:</b> Assessment of challenges/ opportunities to network expansion (e.g., logical connections/extensions of existing and planned networks, impediments due to natural/human-made barriers)	<b>Qualitative:</b> Initial Screening <b>Quantitative:</b> Properties within 800m of a transit route, bicycle lanes, multi-use paths (GIS)
1.2 Impact on Vehicle Traffic	Network level of service Degree of congestion	<b>Qualitative:</b> Assessment of traffic impact (e.g., impacts roads with/without known available or future capacity). Assessment of challenges/ opportunities to road network expansion (e.g., logical connections/ extensions of existing and planned networks to serve traffic, compatibility with LRTP network/assumptions).	<b>Qualitative:</b> Initial Screening for road network expansion plus assessment of implications on adjacent municipalities. <b>Quantitative:</b> Screenline volume to capacity ratios ( $\geq 0.9$ ) (model). Total VKmT on congested roads (may not be relevant) (model). Number of additional traffic lanes (model and analysis).
1.3 Impact on Road Network Connectivity	Effect on first and last-mile access	<b>Qualitative:</b> Assessment of challenges/ opportunities to road network access (e.g., ease of accessing/servicing land, logical connections/ extensions of existing and planned networks to provide access, impediments due to natural/human-made barriers). Assessment of challenges/ opportunities related to Area Municipal Road network (e.g., consistency with function of local road, need for upgrades to local roads, potential local traffic impacts).	<b>Qualitative:</b> Initial Screening
<b>2. Economic</b>			
2.1 Impact on Goods Movement Flow	Effect on mobility and ease of access for goods movement	<b>Qualitative:</b> Assessment of challenges/ opportunities for goods movement (e.g., proximity to Peel Region Strategic Goods Movement Network, proximity to proposed GTA West interchange)	<b>Qualitative:</b> Initial Screening <b>Quantitative:</b> Distance to Peel Region Strategic Goods Movement Network, proposed GTA West interchange (GIS)
2.2 Impact on Businesses	Effect on mobility and land service	n/a	<b>Qualitative:</b> Assessment of mobility and land service (e.g., access to employment areas)
2.3 Cost of Congestion	Effect of congestion on productivity and opportunities	n/a	n/a
2.4 Capital Costs	Cost of transportation projects	n/a	<b>Quantitative:</b> Estimated cost of transportation improvements required to serve development (based on benchmark costs)
<b>3. Natural Environment</b>			
3.1 Impact to Natural Heritage System	Effects on the natural heritage system caused by new construction initiatives, such as road expansion projects	<b>Qualitative:</b> Assessment of encroachment on natural heritage system (per Regional and Local Official Plans)	<b>Qualitative:</b> Initial Screening <b>Quantitative:</b> Assessment of encroachment on natural heritage system (GIS)
3.2 Impact on GHG Emissions	GHG emitted from vehicles	n/a	<b>Quantitative:</b> Estimated tonnes of CO <sub>2</sub> e emitted and change over time (Region's spreadsheet)
<b>4. Social and Health</b>			
4.1 Impact on Residents' Physical and Mental Health	Effect on residents' lives, health and well-being	n/a	n/a
4.2 Impact on Age-friendly Accessible Living	Degree of mobility and access for all ages and ability	n/a	<b>Qualitative:</b> Assessment of mobility and access (e.g., proximity of community facilities and services)
4.3 Impact on Air Quality	Pollutants emitted from vehicles including CO, NH <sub>3</sub> , NO <sub>x</sub> , PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>x</sub> , and VOC	n/a	<b>Quantitative:</b> Estimated tonnes of pollutants emitted and change over time (Region's spreadsheet)
<b>5. Cultural Heritage</b>			
5.1 Impact on Cultural Heritage Sites	Encroachment to sensitive areas such as existing and historical settlement areas, hamlets, places of worship and cemetery locations	<b>Qualitative:</b> Assessment of encroachment on sensitive features (per Regional and Local Official Plans)	<b>Qualitative:</b> Initial Screening <b>Quantitative:</b> Encroachment to sensitive features (GIS)



**TABLE 2: TRANSPORTATION INITIAL ASSESSMENT**

Expansion Option	Category	1. Transportation			2. Economic	3. Natural Environment	5. Cultural Heritage
	Criteria per LRTP	1.1 Impact on Sustainable Modes of Transportation	1.2 Impact on Vehicle Traffic	1.3 Impact on Road Network Connectivity	2.1 Impact on Goods Movement Flow	3.1 Impact to Natural Heritage System	5.1 Impact on Cultural Heritage Sites
	Measure	Positive or negative operational impacts on active transportation, carpooling and transit	Network level of service. Degree of congestion.	Effect on first and last-mile access	Effect on mobility and ease of access for goods movement	Effects on the natural heritage system caused by new construction initiatives, such as road expansion projects	Encroachment to sensitive areas such as existing and historical settlement areas, hamlets, places of worship and cemetery locations
	Parameter	Challenges/opportunities related to network expansion (e.g., logical connections/ extensions of existing and planned networks, impediments due to natural/human-made barriers)	Traffic impact (e.g., impacts roads with/ without known available or future capacity)  Challenges/opportunities related to road network expansion (e.g., logical connections/extensions of existing and planned networks to serve traffic, compatibility with LRTP network/assumptions).	Challenges/opportunities related to road network access (e.g., ease of accessing/ servicing land, logical connections/ extensions of existing and planned networks to provide access, impediments due to natural/human-made barriers)  Challenges/opportunities related to Area Municipal Road network (e.g., consistency with function of local road, need for upgrades to local roads, potential local traffic impacts)	Challenges/opportunities related to goods movement (e.g., proximity to Peel Region Strategic Goods Movement Network, proximity to proposed GTA West interchange)	Degree of encroachment on natural heritage system (per Regional and Local Official Plans)	Degree of encroachment to sensitive features (per Regional and Local Official Plans)
1. North of Bolton	Current/ Planned State	Existing active transportation facilities on Emil Kolb Parkway provide "trunk" connection. Highway 50 shown as Proposed Pedestrian and Cycling Improvement Corridors in LRTP.  GO Transit Route 38 operates along Highway 50 to Columbia Way. Could expand Town Bolton Route, which operates along Highway 50 to King Street.	Key arterial roads serving area operating within capacity except sections of Highway 50. Opportunities to expand arterial road network outside downtown Bolton if required.	Relies more on Regional roads (Emil Kolb Parkway and Highway 50) to access lands. Few perceived impediments to providing local road access albeit a few natural environmental features would likely require structure crossings. Could extend local road network from south for continuity.	Adjacent Regional/municipal road network not as congested. More proximate to resource extraction and agricultural.		
	Constraints	Somewhat distant location from key community facilities limits potential for active transportation use.  Somewhat isolated location limits opportunity to extend transit services from Brampton.	Somewhat isolated location contributes to additional vehicle travel. No planned road expansion in area.	Somewhat isolated location limits major road network options to access lands.	Somewhat distant from nearest GTA West interchange. Regional/municipal road expansion required to better serve option. Potential community impacts of additional truck traffic on Queen Street (Highway 50).		
	Potential Impacts		Heightens need for grade-separated crossing of CP Rail MacTier Subdivision on Coleraine Road. Likely requires Regional/Town road improvements. Requirements to be determined through Detailed Evaluation.	Potential community impacts of additional traffic on Queen Street (Highway 50) and Columbia Way.		Minimal "Natural Environment High Constraint" area. Bolton Resource Management Tract located in close proximity.	Minimal to no "Cultural Heritage Sites".
2. Northwest of Bolton	Current/ Planned State	The Gore Road, Coleraine Drive and King Street shown as Proposed Cycling Improvement Corridors in the LRTP.  Could expand Town Bolton Route, which operates along Coleraine Road to King Street. Potential GO Transit rail service expansion to Bolton beyond 2041 horizon.	Key arterial roads serving area operating within capacity except sections of Highway 50. Opportunities to expand arterial road network outside downtown Bolton if required. Expansion of Mayfield Road to 4/6 lanes and The Gore Road to 4 lanes by 2041 shown in LRTP.	Relies mostly on Regional roads (King Street and The Gore Road) to access lands. Few perceived impediments to providing local road access albeit some natural environmental features would likely require structure crossings.	Adjacent Regional/Town road network not as congested. More proximate to resource extraction and agricultural areas.		
	Constraints	No existing active transportation routes. Somewhat distant location from key community facilities limits potential for active transportation use.  Somewhat isolated location limits opportunity to extend transit services from Brampton.	Somewhat isolated location contributes to additional vehicle travel. Limited planned road expansion in area.	Somewhat isolated location limits major road network options to access lands. No continuity of local road network from adjacent areas.	Nearest proposed GTA West interchange somewhat proximate but not as close as for other options. Regional/Town road expansion required to better serve option.		
	Potential Impacts		Heightens need for grade-separated crossings of CP Rail MacTier Subdivision on Coleraine Road and King Street. Likely requires Regional/Town road improvements. Requirements to be determined through Detailed Evaluation.	Potential community impacts of additional traffic on existing roads.		Moderate "Natural Environment High Constraint" area. Number of creeks and wooded areas.	Minimal to no "Cultural Heritage Sites".

**TABLE 2: TRANSPORTATION INITIAL ASSESSMENT**

Expansion Option	Category	1. Transportation			2. Economic	3. Natural Environment	5. Cultural Heritage
	Criteria per LRTP	1.1 Impact on Sustainable Modes of Transportation	1.2 Impact on Vehicle Traffic	1.3 Impact on Road Network Connectivity	2.1 Impact on Goods Movement Flow	3.1 Impact to Natural Heritage System	5.1 Impact on Cultural Heritage Sites
	Measure	Positive or negative operational impacts on active transportation, carpooling and transit	Network level of service. Degree of congestion.	Effect on first and last-mile access	Effect on mobility and ease of access for goods movement	Effects on the natural heritage system caused by new construction initiatives, such as road expansion projects	Encroachment to sensitive areas such as existing and historical settlement areas, hamlets, places of worship and cemetery locations
	Parameter	Challenges/opportunities related to network expansion (e.g., logical connections/ extensions of existing and planned networks, impediments due to natural/human-made barriers)	Traffic impact (e.g., impacts roads with/ without known available or future capacity)  Challenges/opportunities related to road network expansion (e.g., logical connections/extensions of existing and planned networks to serve traffic, compatibility with LRTP network/assumptions).	Challenges/opportunities related to road network access (e.g., ease of accessing/ servicing land, logical connections/ extensions of existing and planned networks to provide access, impediments due to natural/human-made barriers)  Challenges/opportunities related to Area Municipal Road network (e.g., consistency with function of local road, need for upgrades to local roads, potential local traffic impacts)	Challenges/opportunities related to goods movement (e.g., proximity to Peel Region Strategic Goods Movement Network, proximity to proposed GTA West interchange)	Degree of encroachment on natural heritage system (per Regional and Local Official Plans)	Degree of encroachment to sensitive features (per Regional and Local Official Plans)
3. West of Bolton	Current/ Planned State	The Gore Road, Coleraine Drive, King Street and Mayfield Road shown as Proposed Cycling Improvement Corridors in the LRTP. Could extend existing/planned active transportation routes in Brampton for continuity.  Highway 50 and Mayfield Road carpool lot nearby. Could expand Town Bolton Route, which currently operates along Coleraine Road to George Bolton Parkway. Could expand existing/planned Brampton Transit routes for continuity. Interregional transit service likely along GTA West Corridor. Potential GO Transit rail service expansion to Bolton beyond 2041 horizon.  Maximizes opportunities to contribute to the Region's non-auto modal split target.	Key arterial roads serving area operating within capacity. Opportunities to expand arterial road network if required. Expansion of Mayfield Road to 4/6 lanes, The Gore Road to 4 lanes and Coleraine Road to 4 lanes by 2041 shown in LRTP. Proximity to GTA West Corridor interchange improves mobility for passenger vehicles.	Regional road (The Gore Road) and other network options available to access lands. Few perceived impediments to providing local road access albeit some natural environmental features would likely require structure crossings. Could extend local road network from east and south for continuity.	Nearest proposed GTA West interchange proximate - two interchanges close. Proposed Highway 427 extension relatively close. Closest to Pearson Airport and CP Rail intermodal facility.		
	Constraints	No existing active transportation routes. Somewhat distant location from key community facilities limits potential for active transportation use. Potential need for additional grade-separated crossing(s) of GTA West Corridor.	Relies more on Town roads to access lands.	Spacing of local roads to the east limits connectivity.	Some Regional/Town road expansion required to better serve option.		
	Potential Impacts	Potential crossing(s) of GTA West Corridor once highway constructed.	Likely requires Regional/Town road improvements. Requirements to be determined through Detailed Evaluation.	Potential crossing(s) of GTA West Corridor once highway constructed. Potential community impacts of industrial traffic from the east.		Moderate "Natural Environment High Constraint" area. Number of creeks and wooded areas.	Minimal to no "Cultural Heritage Sites".
4. Northeast of Tullamore	Current/ Planned State	The Gore Road, Mayfield Road and Airport Road shown as Proposed Cycling Improvement Corridors in the LRTP. Could extend existing/planned active transportation routes in Brampton for continuity.  Brampton Transit Route 30 operates along Airport Road to Tullamore Industrial Area. Could expand other existing/planned Brampton Transit routes for continuity. Interregional transit service likely along GTA West Corridor.	Key arterial roads serving area generally operating within capacity. Some opportunities to expand arterial road network if required. Expansion of Mayfield Road to 6 lanes and Airport Road to 4 lanes by 2041 shown in LRTP.	Relies more on Regional roads (Mayfield Road and The Gore Road) to access lands. Few perceived impediments to providing local road access albeit some natural environmental features would likely require structure crossings. Could extend local road network from south for continuity.	Nearest proposed GTA West interchange proximate - two interchanges close. Proposed Highway 427 extension relatively close. Relatively close to Pearson Airport and CP Rail intermodal facility.		
	Constraints	No existing active transportation routes. Somewhat distant location from key community facilities limits potential for active transportation use.		Access from Mayfield Road may be challenging. Spacing of future local roads to the south may limit connectivity.	Some Regional/Town road expansion required to better serve option.		
	Potential Impacts		Likely requires Regional/Town road improvements. Requirements to be determined through Detailed Evaluation.			Moderate "Natural Environment High Constraint" area. Number of creeks and wooded areas.	Minimal to no "Cultural Heritage Sites".

**TABLE 2: TRANSPORTATION INITIAL ASSESSMENT**

Expansion Option	Category	1. Transportation			2. Economic	3. Natural Environment	5. Cultural Heritage
	Criteria per L RTP	1.1 Impact on Sustainable Modes of Transportation	1.2 Impact on Vehicle Traffic	1.3 Impact on Road Network Connectivity	2.1 Impact on Goods Movement Flow	3.1 Impact to Natural Heritage System	5.1 Impact on Cultural Heritage Sites
	Measure	Positive or negative operational impacts on active transportation, carpooling and transit	Network level of service. Degree of congestion.	Effect on first and last-mile access	Effect on mobility and ease of access for goods movement	Effects on the natural heritage system caused by new construction initiatives, such as road expansion projects	Encroachment to sensitive areas such as existing and historical settlement areas, hamlets, places of worship and cemetery locations
	Parameter	Challenges/opportunities related to network expansion (e.g., logical connections/ extensions of existing and planned networks, impediments due to natural/human-made barriers)	Traffic impact (e.g., impacts roads with/ without known available or future capacity)  Challenges/opportunities related to road network expansion (e.g., logical connections/extensions of existing and planned networks to serve traffic, compatibility with L RTP network/assumptions).	Challenges/opportunities related to road network access (e.g., ease of accessing/ servicing land, logical connections/ extensions of existing and planned networks to provide access, impediments due to natural/human-made barriers)  Challenges/opportunities related to Area Municipal Road network (e.g., consistency with function of local road, need for upgrades to local roads, potential local traffic impacts)	Challenges/opportunities related to goods movement (e.g., proximity to Peel Region Strategic Goods Movement Network, proximity to proposed GTA West interchange)	Degree of encroachment on natural heritage system (per Regional and Local Official Plans)	Degree of encroachment to sensitive features (per Regional and Local Official Plans)
5. North of Tullamore	Current/ Planned State	Airport Road and King Street shown as Proposed Cycling Improvement Corridors in the L RTP.  Brampton Transit Route 30 operates along Airport Road to Tullamore Industrial Area. Interregional transit service likely along GTA West Corridor.	Key arterial roads serving area generally operating within capacity. Some opportunities to expand arterial road network if required. Expansion of Mayfield Road to 6 lanes and Airport Road to 4 lanes by 2041 shown in L RTP. Proximity to GTA West Corridor interchange improves mobility for passenger vehicles.	Relies more on Regional roads (Airport Road and King Street) to access lands. Few perceived impediments to providing local road access albeit several natural environmental features would likely require structure crossings.	Nearest proposed GTA West interchange proximate. Proposed Highway 410 extension relatively close. Somewhat close to Pearson Airport and CP Rail intermodal facility. Airport Road is a primary truck route.		
	Constraints	No existing active transportation routes. Somewhat distant location from key community facilities limits potential for active transportation use. Potential need for additional grade-separated crossing(s) of GTA West Corridor.  Location limits opportunity to extend transit services from Brampton.		No continuity of local road network from adjacent areas.	Some Regional/Town road expansion required to better serve option.		
	Potential Impacts	Potential crossing(s) of GTA West Corridor once highway constructed for active transportation and transit routes.	Likely requires Regional/Town road improvements. Requirements to be determined through Detailed Evaluation.	Potential crossing(s) of GTA West Corridor once highway constructed.		Considerable "Natural Environment High Constraint" area.	Minimal to no "Cultural Heritage Sites".
6. Northwest of Tullamore/ Northeast of Mayfield West	Current/ Planned State	Existing active transportation spine on Mayfield Road. Dixie Road shown as Proposed Cycling Improvement Corridor in the L RTP. Could extend existing/planned active transportation routes in Brampton for continuity.  Brampton Transit Route 30 operates along Airport Road to Tullamore Industrial Area. Proposed ZUM network expansion on Bramalea Road to north Brampton. Could expand other existing/planned Brampton Transit routes for continuity. Interregional transit service likely along GTA West Corridor.  Maximizes opportunities to contribute to the Region's non-auto modal split target.	Key arterial roads serving area generally operating within capacity. Some opportunities to expand arterial road network if required. Expansion of Mayfield Road to 6 lanes, Airport Road to 4 lanes and Dixie Road to 4 lanes by 2041 shown in L RTP. Proximity to GTA West Corridor interchange improves mobility for passenger vehicles.	Relies more on Regional roads (Mayfield Road and Dixie Road) to access lands. Few perceived impediments to providing local road access albeit several natural environmental features would likely require structure crossings. Could extend local road network from south for continuity.	Nearest proposed GTA West interchange proximate - two interchanges close. Proposed Highway 410 extension close. Somewhat close to Pearson Airport and CP Rail intermodal facility. Dixie Road is a primary truck route.		
	Constraints	Somewhat distant location from key community facilities limits potential for active transportation use.	Adjacent section of Mayfield Road may pose capacity constraints.	Access from Mayfield Road may be challenging.	Some Regional/Town road expansion required to better serve option.		
	Potential Impacts		Likely requires Regional/Town road improvements. Requirements to be determined through Detailed Evaluation.			Minimal "Natural Environment High Constraint" area.	Minimal to no "Cultural Heritage Sites".



**TABLE 2: TRANSPORTATION INITIAL ASSESSMENT**

Expansion Option	Category	1. Transportation			2. Economic	3. Natural Environment	5. Cultural Heritage
	Criteria per L RTP	1.1 Impact on Sustainable Modes of Transportation	1.2 Impact on Vehicle Traffic	1.3 Impact on Road Network Connectivity	2.1 Impact on Goods Movement Flow	3.1 Impact to Natural Heritage System	5.1 Impact on Cultural Heritage Sites
	Measure	Positive or negative operational impacts on active transportation, carpooling and transit	Network level of service. Degree of congestion.	Effect on first and last-mile access	Effect on mobility and ease of access for goods movement	Effects on the natural heritage system caused by new construction initiatives, such as road expansion projects	Encroachment to sensitive areas such as existing and historical settlement areas, hamlets, places of worship and cemetery locations
	Parameter	Challenges/opportunities related to network expansion (e.g., logical connections/ extensions of existing and planned networks, impediments due to natural/human-made barriers)	Traffic impact (e.g., impacts roads with/ without known available or future capacity)  Challenges/opportunities related to road network expansion (e.g., logical connections/extensions of existing and planned networks to serve traffic, compatibility with L RTP network/assumptions).	Challenges/opportunities related to road network access (e.g., ease of accessing/ servicing land, logical connections/ extensions of existing and planned networks to provide access, impediments due to natural/human-made barriers)  Challenges/opportunities related to Area Municipal Road network (e.g., consistency with function of local road, need for upgrades to local roads, potential local traffic impacts)	Challenges/opportunities related to goods movement (e.g., proximity to Peel Region Strategic Goods Movement Network, proximity to proposed GTA West interchange)	Degree of encroachment on natural heritage system (per Regional and Local Official Plans)	Degree of encroachment to sensitive features (per Regional and Local Official Plans)
7. North of Mayfield West	Current/ Planned State	Existing active transportation spine of King Street west of Highway 10. King Street shown as a Proposed Cycling Improvement Corridor in the L RTP west of Highway 10. Could extend planned active transportation routes in Mayfield West for continuity.  Brampton Transit Route 81 operates along Kennedy Road to Newhouse Boulevard/ Bonnieglen Farm Road. GO Transit Route 37 operates along Highway 10 to Orangeville. Proposed ZUM network expansion on Hurontario Street to Caledon. Could expand upon planned transit hub and network for Mayfield West Phase 2 community. Interregional transit service likely along GTA West Corridor.  Maximizes opportunities to contribute to the Region's non-auto modal split target.	Key arterial roads serving area generally operating within capacity. Some opportunities to expand arterial road network if required. Expansion of Mayfield Road to 6 lanes by 2041 shown in L RTP.	Regional road (King Street) and other network options available to access lands. Few perceived impediments to providing local road access albeit some natural environmental features would likely require structure crossings. Could extend local road network from south for continuity.	Nearest proposed GTA West interchange proximate. Proposed Highway 410 extension close. Hurontario Street is a primary truck route.		
	Constraints	Limited existing active transportation routes. Somewhat distant location from key community facilities limits potential for active transportation use. Potential need for additional grade-separated crossing(s) of GTA West Corridor.	Adjacent section of Mayfield Road may pose capacity constraints.	Relies more on Town roads and Provincial highways (Highway 10) to access lands. Limited continuity of local road network from adjacent areas.	Some Regional/Town road expansion required to better serve option.		
	Potential Impacts	Potential crossing(s) of GTA West Corridor once highway constructed for active transportation and transit routes.	Likely requires Regional/Town road improvements. Requirements to be determined through Detailed Evaluation.	Potential crossing(s) of GTA West Corridor once highway constructed. Potential community impacts of industrial traffic from the east.		Moderate "Natural Environment High Constraint" area.	Minimal to no "Cultural Heritage Sites".

**TABLE 2: TRANSPORTATION INITIAL ASSESSMENT**

Expansion Option	Category	1. Transportation			2. Economic	3. Natural Environment	5. Cultural Heritage
	Criteria per L RTP	1.1 Impact on Sustainable Modes of Transportation	1.2 Impact on Vehicle Traffic	1.3 Impact on Road Network Connectivity	2.1 Impact on Goods Movement Flow	3.1 Impact to Natural Heritage System	5.1 Impact on Cultural Heritage Sites
	Measure	Positive or negative operational impacts on active transportation, carpooling and transit	Network level of service. Degree of congestion.	Effect on first and last-mile access	Effect on mobility and ease of access for goods movement	Effects on the natural heritage system caused by new construction initiatives, such as road expansion projects	Encroachment to sensitive areas such as existing and historical settlement areas, hamlets, places of worship and cemetery locations
	Parameter	Challenges/opportunities related to network expansion (e.g., logical connections/ extensions of existing and planned networks, impediments due to natural/human-made barriers)	Traffic impact (e.g., impacts roads with/ without known available or future capacity)  Challenges/opportunities related to road network expansion (e.g., logical connections/extensions of existing and planned networks to serve traffic, compatibility with L RTP network/assumptions).	Challenges/opportunities related to road network access (e.g., ease of accessing/ servicing land, logical connections/ extensions of existing and planned networks to provide access, impediments due to natural/human-made barriers)  Challenges/opportunities related to Area Municipal Road network (e.g., consistency with function of local road, need for upgrades to local roads, potential local traffic impacts)	Challenges/opportunities related to goods movement (e.g., proximity to Peel Region Strategic Goods Movement Network, proximity to proposed GTA West interchange)	Degree of encroachment on natural heritage system (per Regional and Local Official Plans)	Degree of encroachment to sensitive features (per Regional and Local Official Plans)
8. Northwest of Mayfield West	Current/Planned State	Mayfield Road (part) and Mississauga Road shown as Proposed Cycling Network routes in the L RTP. Could extend existing/planned active transportation routes in Brampton for continuity.  Mount Pleasant GO Station and Kitchener GO Transit rail service somewhat nearby. Proposed ZUM network expansion on Chinguacousy Road to north Brampton. Could expand other existing/planned Brampton Transit routes for continuity. Interregional transit service likely along GTA West Corridor.  Maximizes opportunities to contribute to the Region's non-auto modal split target.	Key arterial roads serving area generally operating within capacity. Some opportunities to expand arterial road network if required. Expansion of Mayfield Road to 4/6 lanes and Mississauga Road to 4 lanes by 2041 shown in L RTP. Proximity to GTA West Corridor interchange improves mobility for passenger vehicles.	Relies more on Regional roads (Mayfield Road and Mississauga Road) to access lands. Few perceived impediments to providing local road access albeit several natural environmental features would likely require structure crossings. Could extend local road network from east and south for continuity.	Nearest proposed GTA West interchange proximate - two interchanges close. Mississauga Road is a primary truck route.		
	Constraints	No existing active transportation routes. Somewhat distant location from key community facilities limits potential for active transportation use.	Adjacent section of Mayfield Road may pose capacity constraints.	Access from Mayfield Road may be challenging.	Some Regional/Town road expansion required to better serve option.		
	Potential Impacts		Likely requires Regional/Town road improvements. Requirements to be determined through Detailed Evaluation.	Potential community impacts of additional traffic on existing roads. Potential crossing(s) of Orangeville Brampton Railway.		Moderate "Natural Environment High Constraint" area.	Minimal to no "Cultural Heritage Sites".

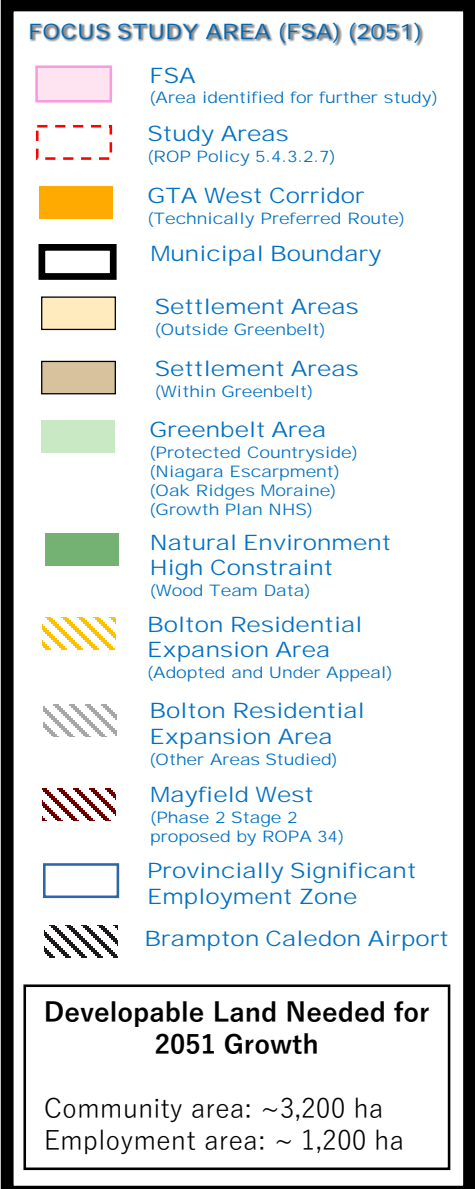
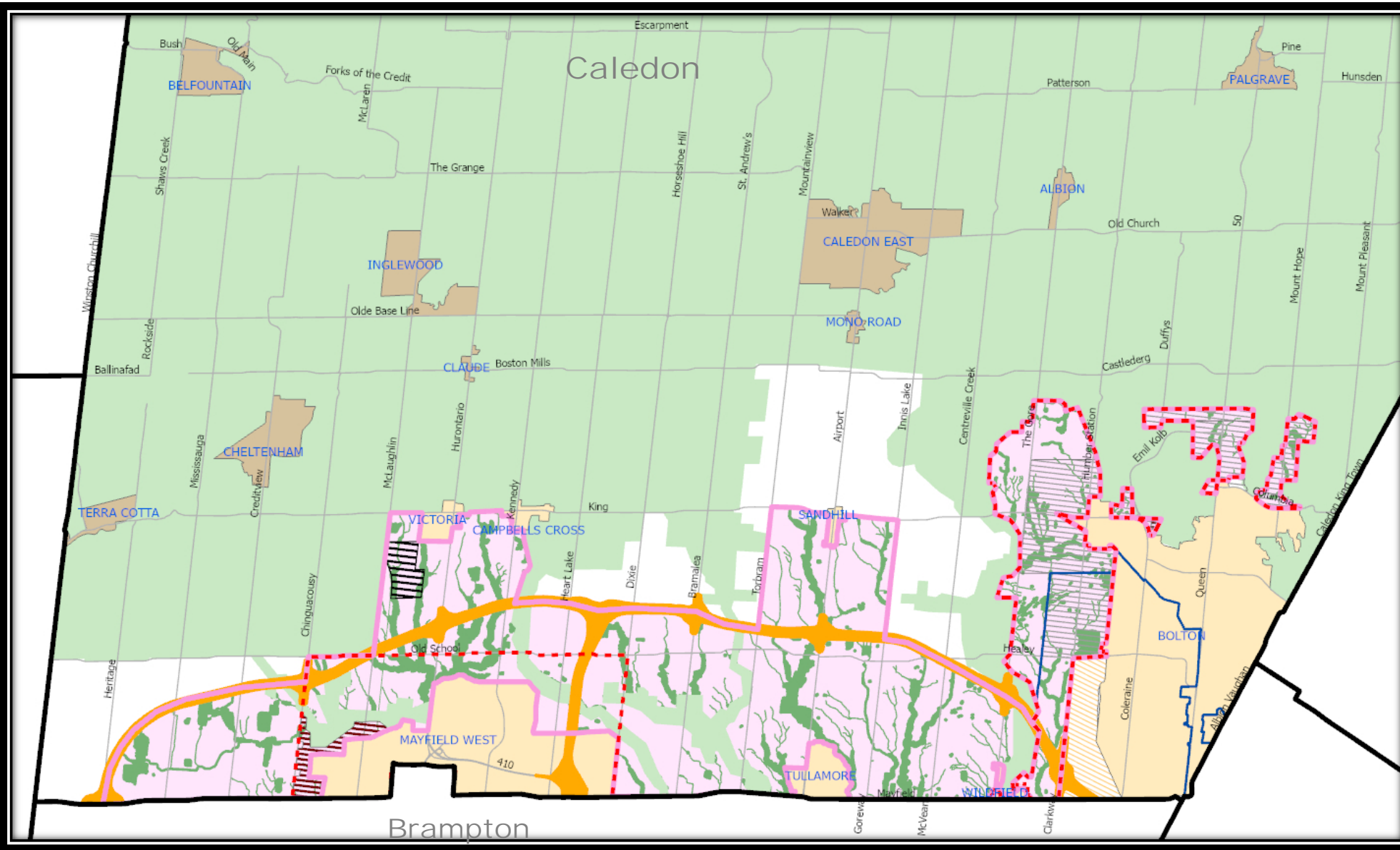
**TABLE 3: TRANSPORTATION INITIAL ASSESSMENT SUMMARY**

EXPANSION OPTION	Residential Uses	1. Transportation			3. Natural Environment	Employment Uses	2. Economic
		1.1 Impact on Sustainable Modes of Transportation	1.2 Impact on Vehicle Traffic	1.3 Impact on Road Network Connectivity	3.1 Impact to Natural Heritage System		2.1 Impact on Goods Movement Flow
1. North of Bolton	Less Preferred	↓	↓	↓		Less Preferred	↓
2. Northwest of Bolton	More Preferred	↑	↓	↑		Less Preferred	↓
3. West of Bolton	More Preferred	↑	↓	↑		More Preferred	↑
4. Northeast of Tullamore	Less Preferred	↓	↑	↓		More Preferred	↑
5. North of Tullamore	Less Preferred	↓	↑	↓	↓	More Preferred	↑
6. Northwest of Tullamore/Northeast of Mayfield West	More Preferred	↑	↑	↑		More Preferred	↑
7. North of Mayfield West	More Preferred	↑	↑	↓		Less Preferred	↓
8. Northwest of Mayfield West	More Preferred	↑	↑	↑		Less Preferred	↓

LEGEND:	↑	More Preferred	↓	Less Preferred
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**Notes:**

1. The terms "more preferred" and "less preferred" are intended to reflect implications relative to other Expansion Options. All options are considered feasible from a transportation perspective.
2. The rating for 5. Cultural Heritage, 5.1 Impact on Cultural Heritage Sites is not shown since it is the same (neutral) for all Expansion Options.
3. The relative preference for Residential or Employment Uses is a preliminary assessment and subject to further review. In the case of Option 3, the Provincially Significant Employment Zone designation was considered.



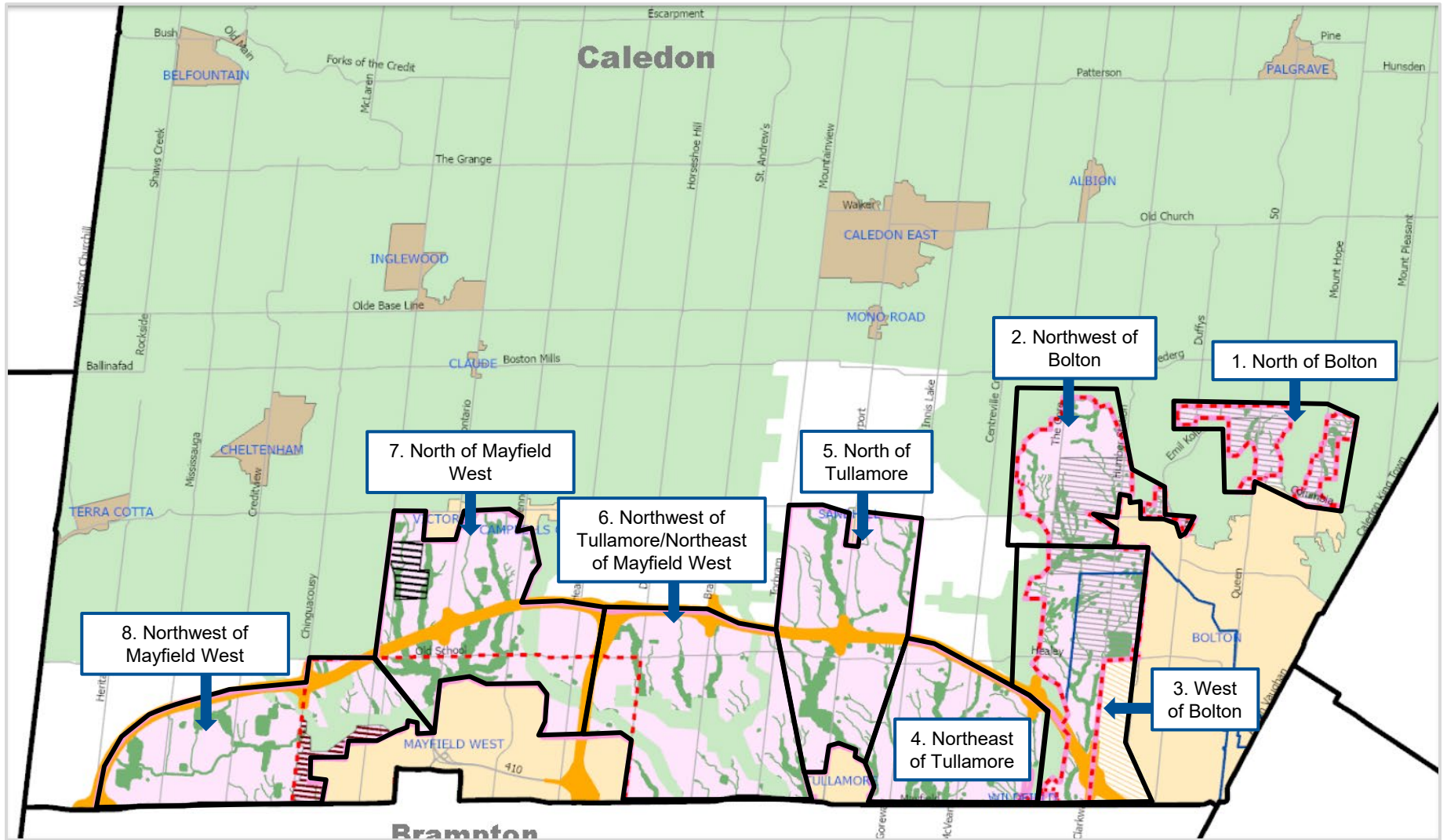
**Disclaimer:** This map has been developed for the Settlement Area Boundary Expansion (SABE) Study and represents a conceptual area for the SABE based on technical studies. For additional information, please refer to the technical studies at <http://www.peelregion.ca/officialplan/review/focus-areas/settlement-area-boundary.asp>

- Note:**
- (1) There may be opportunities to expand rural settlements outside the FSA as part of the SABE Study.
  - (2) Other natural environmental constraints not identified on this map, including potential restoration lands, will be identified through further analysis and may further limit development
  - (3) ROP Policy 5.4.3.2.7 as it relates to the area surrounding Bolton is under appeal.
  - (4) The ~4,300 ha SABE is based on a draft land needs assessment which is under review.

Figure 1

1 cm = 1 km





## Sub-Areas for Transportation Initial Assessment

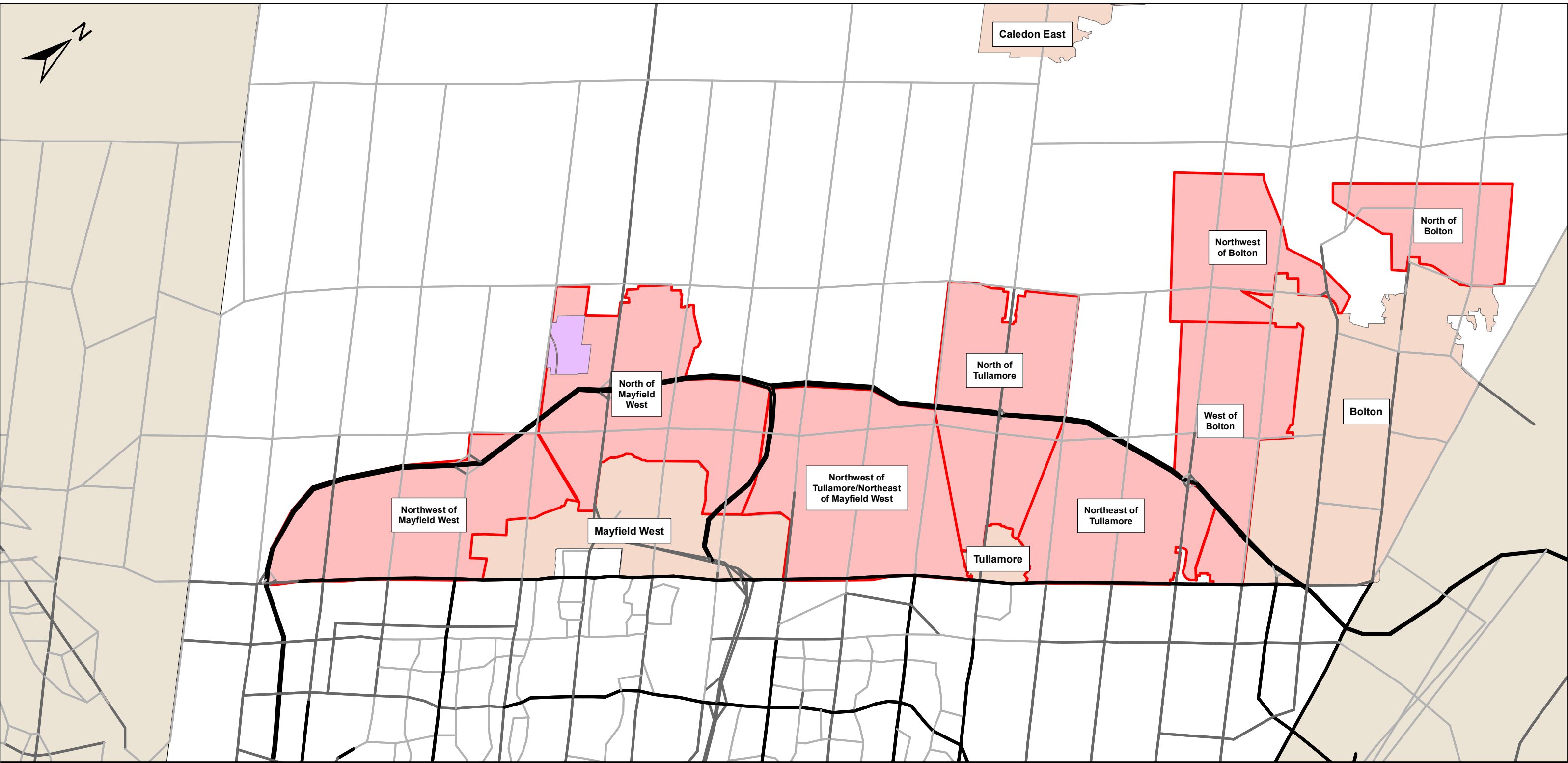


Figure 3: Future 2041 Road Network -  
Lanes by Direction

Region of Peel Settlement Area Boundary Expansion Study  
Transportation Technical Study

Technical Memorandum A - Assessment and Evaluation Process  
and Initial Assessment

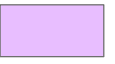
**Legend**

**Number of Lanes**

- 1 Lane
- 2 Lane
- 3 Lane



FSA



Airport



Major Rural Settlement Boundary



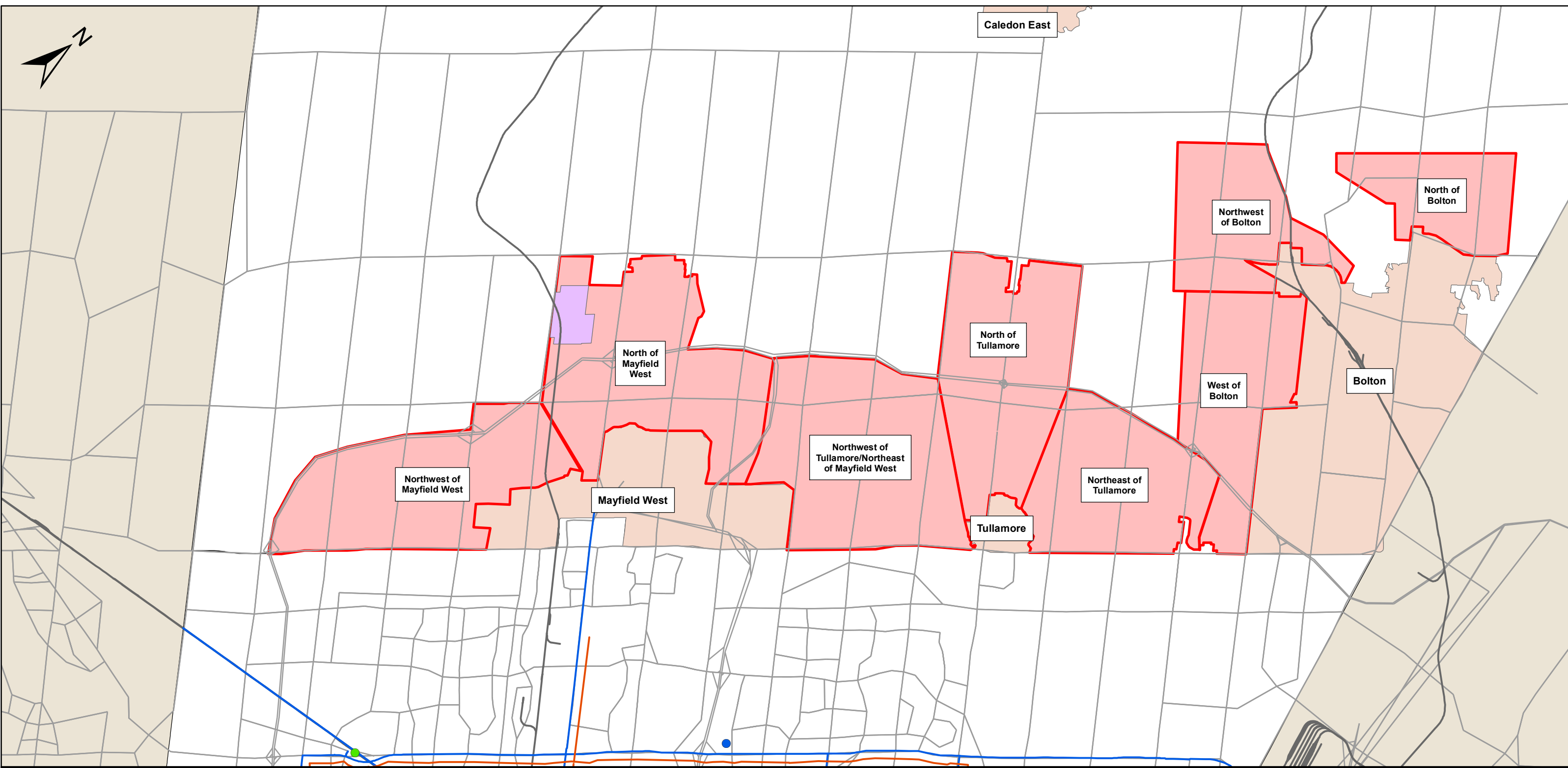


Figure 4: Future 2041 LRTP Transit Network

Region of Peel Settlement Area Boundary Expansion Study  
Transportation Technical Study

Technical Memorandum A - Assessment and Evaluation Process  
and Initial Assessment



**Legend**

**Transit Network**

- Rapid Transit Destination
- GO Station Existing Proposed
- Züm Line
- RTP within Peel
- Rail
- FSA
- Airport
- Major Rural Settlement Boundary



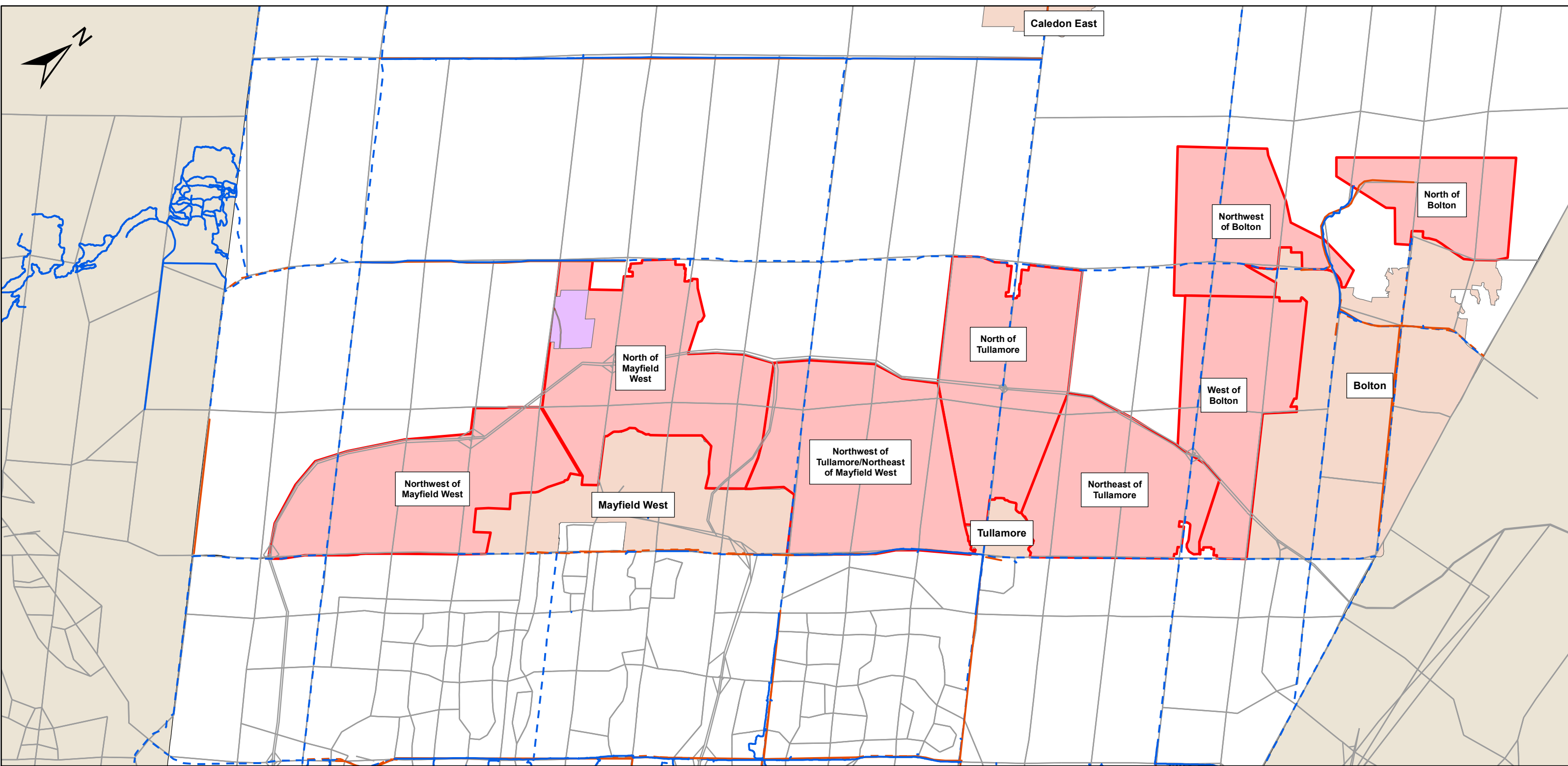


Figure 5: Future 2041 L RTP Active Transportation Network

Region of Peel Settlement Area Boundary Expansion Study  
Transportation Technical Study

Technical Memorandum A - Assessment and Evaluation Process  
and Initial Assessment



**Legend**

- Existing Cycling Network
- Existing Pedestrian Network
- - - Proposed Cycling Network
- - - Proposed Pedestrian Network
- FSA
- Airport
- Major Rural Settlement Boundary





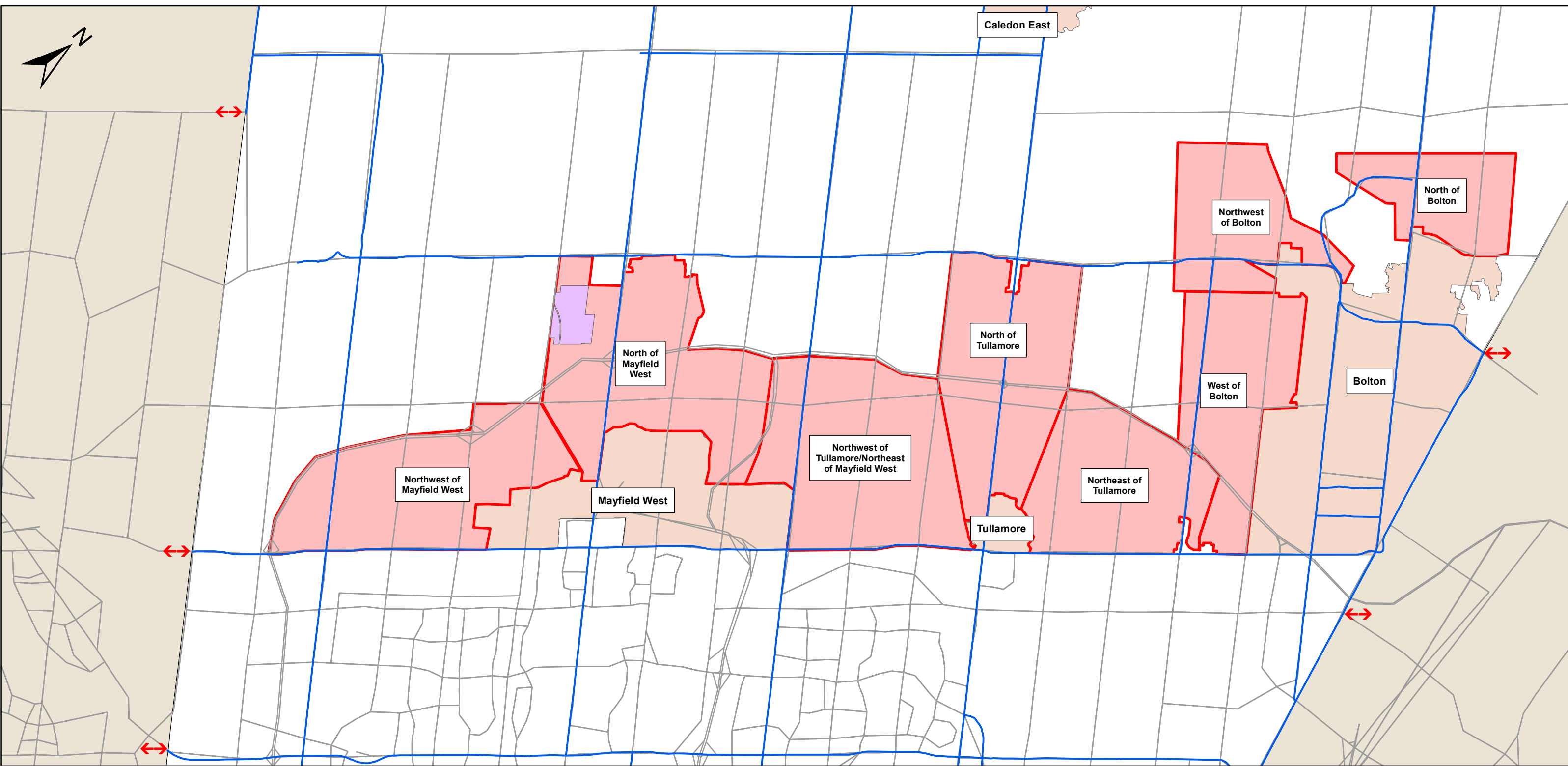



Figure 6: Future 2041 LRTP Goods Movement Network  
 Region of Peel Settlement Area Boundary Expansion Study  
 Transportation Technical Study  
 Technical Memorandum A - Assessment and Evaluation Process  
 and Initial Assessment

**Legend**

-  Connections to Network Outside Peel Region
-  Truck Network
-  FSA
-  Airport
-  Major Rural Settlement Boundary



## APPENDIX A

### Transportation Master Plan Assessment Frameworks

**Figure A.1** compares the methods used to assess alternative transportation planning strategies in the Region of Peel Long Range Transportation Plan (LRTP) (2019)<sup>7</sup> and Town of Caledon Transportation Master Plan (2018)<sup>8</sup>. Both plans applied similar assessment approaches but slightly different methodologies featuring primarily qualitative criteria, supplemented with quantitative measures.

The LRTP approach was ultimately selected for the assessment and evaluation framework for this study given its recency and to ensure consistency with other Region of Peel transportation planning initiatives. It is interesting to note sensitivity testing performed for the Town of Caledon Transportation Master Plan to determine if the weighting would affect the ranking indicated the preferred alternative remained the same regardless of the criteria weights applied.

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<sup>7</sup> Region of Peel, *Let's Move Peel: Long Range Transportation Plan 2019*.

<sup>8</sup> Town of Caledon (Paradigm Transportation Solutions Limited, LURA and Watt Consulting Group), *Town of Caledon Transportation Master Plan*, November 2017.



**FIGURE A.1: TRANSPORTATION MASTER PLAN ASSESSMENT FRAMEWORKS**

Category	Evaluation Criteria
<b>Region of Peel Long Range Transportation Plan (2019)</b>	
1. Transportation <sup>1</sup>	1. Impact on sustainable modes of transportation include any positive or negative operational impacts on active transportation, carpooling and transit.
	2. Impact on vehicle traffic can be: a) Impact on road network level-of-service (screen-line v/c < 0.9); and b) Impact on congestion (number KMs of road that are >= 0.9).
	3. Impact on road connectivity includes first and last-mile access, which is the ease of accessing the transportation network from/to the origin and destination.
	4. The impact on goods movement.
2. Economic	Impact on businesses (network connectivity, the goods movement sector)
	Cost of congestion (loss of productivity and opportunities)
3. Natural Environment	Capital costs (number of road improvements, from planning, design, construction, maintenance and operations)
	Impact to natural heritage system (caused by new construction initiatives, such as road widening projects)
4. Social and Health	Impact on GHG emissions (analysis only considers automobiles (vehicles and trucks), and analyzes the emissions as carbon dioxide equivalents (CO <sub>2</sub> e) ... also analysis does not consider emerging technologies, such as the penetration of electric vehicles, nor does it consider any policies or programs aimed at reducing emissions)
	Impact on residents' physical and mental health (pollutants emitted from vehicles can negatively affect the physical health of residents ... pollutants considered include CO, NH <sub>3</sub> , NO <sub>x</sub> , PM <sub>10</sub> , PM <sub>2.5</sub> , SO <sub>x</sub> , and VOC)
	Impact on age-friendly accessible living
5. Cultural Heritage	Impact on air quality <sup>2</sup>
	Impact on cultural heritage sites (encroachment to sensitive areas such as existing and historical settlement areas, hamlets, places of worship and cemetery locations)
<b>Notes:</b>	
1. There is greater detail and explanation given to the Transportation category as the criteria used to evaluate the transportation directly impacts the other four evaluators.	
2. The same approach was taken to estimate pollutants as estimating GHG emissions. Refer to the natural environment criteria for the methodology used and limitations present in the analysis.	
<b>Town of Caledon Transportation Master Plan (2018)</b>	
Transportation	Volume to capacity ratios
	Congested vehicle kilometer travelled
	Network connectivity and continuity
	Goods movement
	Support for transit
	Support for active transportation
Environment	Greenhouse gas emissions
	Potential impacts/encroachments on any environmentally sensitive areas such as wetlands, woodlands, Oak Ridges Moraine, Greenbelt, Niagara Escarpment, etc.
Social	Health issues related to air quality
	Appropriateness for the changing demography
	Support for a healthier commute
Cultural Heritage	Potential impacts, such as noise exposure, intensification corridor, and urban system
	Potential impacts to major structures, places of worship, cemeteries, existing and historical settlement areas and hamlets
Economic	Cost of congestion
	Network connectivity and continuity, including access to employment lands and regional and provincial network
Other – Costs or Impact on Utility Corridors	Qualitative discussion about the potential costs and/or impact to utility corridors
Customer Service	Vehicle operating costs
	Travel time for users
	Safety of travel modes
	Convenience and accessibility for users
<b>Notes:</b>	
The evaluation criteria were equally weighted (value of 1) in the base Multiple Account Evaluation matrix . Sensitivity testing performed to determine if the weighting would affect the ranking indicated the preferred alternative remained the same regardless of the criteria weights.	