

Appendix G

Road Network Alternative Evaluation

Date: July , 2008

TABLE OF CONTENTS

1. BACKGROUND.....	1
2. EVALUATION PROCESS.....	3
2.1. PHASE I: NEED AND JUSTIFICATION	4
2.2. PHASE II: CONSIDERATION OF A REASONABLE RANGE OF ALTERNATIVES OR “ALTERNATIVE SOLUTIONS”	5
2.3. EVALUATION CRITERIA AND INDICATORS	8
2.4. DETAILED EVALUATION RESULTS	11
2.4.1. <i>Road Network Alternatives – South Simcoe</i>	13
2.4.2. <i>Road Network Alternative Central Simcoe</i>	25
2.4.3. <i>Road Network Alternative Collingwood / Wasaga</i>	31
2.4.4. <i>Road Network Alternative Oro-Medonte – Orillia/Ramara</i>	37
2.4.5. <i>Road Network Alternative North Simcoe</i>	44
2.5. PROPOSED ROAD NETWORK IMPROVEMENTS – SHORT TERM	48
2.6. PROPOSED ROAD NETWORK IMPROVEMENTS – MEDIUM TERM	49
2.7. PROPOSED ROAD NETWORK IMPROVEMENTS – LONG TERM	50
3. SENSITIVITY ASSESSMENT – RECOMMENDED IMPROVEMENTS WITHOUT FULL DEVELOPMENT OF HIGHWAY 400 AND BARRIE BY-PASS.....	51

1. BACKGROUND

The Transportation Master Plan was initiated by the County to review its transportation needs for the next 25 years, based on updated forecasts of future growth and changes to transportation patterns and infrastructure. The effectiveness of a series of transportation strategies (e.g. cycling, transit, TDM etc.) were examined based on their ability to respond to future transportation requirements and an attempt was made to solve the deficiencies as much as possible through non-automobile oriented solutions.

However, the findings of the Transportation Strategy Report also suggests that even with an aggressive approach to encouraging future travel via non-auto transportation modes, there will still be a need for road improvements. Therefore, a review and assessment of road improvement alternatives is required.

The County of Simcoe has a number of projects planned and approved which are anticipated to be completed within the next ten (10) years. In addition, the Ministry of Transportation also has some planned improvements on their provincial facilities which are expected to be built sometime within the 2031 planning horizon, although some may still be subject to obtaining necessary EA approvals. For the purpose of this Transportation Master Plan, these projects have been included as common improvements within all transportation networks being assessed. The improvements include Highway 400 widening to 10 lanes (8 lanes plus High Occupancy Vehicle lanes (HOV) from Highway 9 through Barrie to the Highway 400 extension, extension of Highway 404 from Green Lane to Ravenshoe Road, widening of County road 88 (Bradford) to four lanes, widening of County Road 90 to five lanes between Barrie and Angus and the construction of the Highway 26 By-Pass between the Town of Wasaga Beach and the Town of Collingwood.

The implementation of planned and committed projects will address some of the future transportation needs in the community; however, many of the road segments in the County will still be approaching or over capacity in 2031 with these improvements in place. Based on forecasts of future travel demands in 2031, new road capacity will be required in a number of areas in the County. Figure 1-1 illustrates the areas of future capacity deficiencies anticipated in the County based on proposed 2031 population and employment allocations presented in the Simcoe Area Growth Plan.

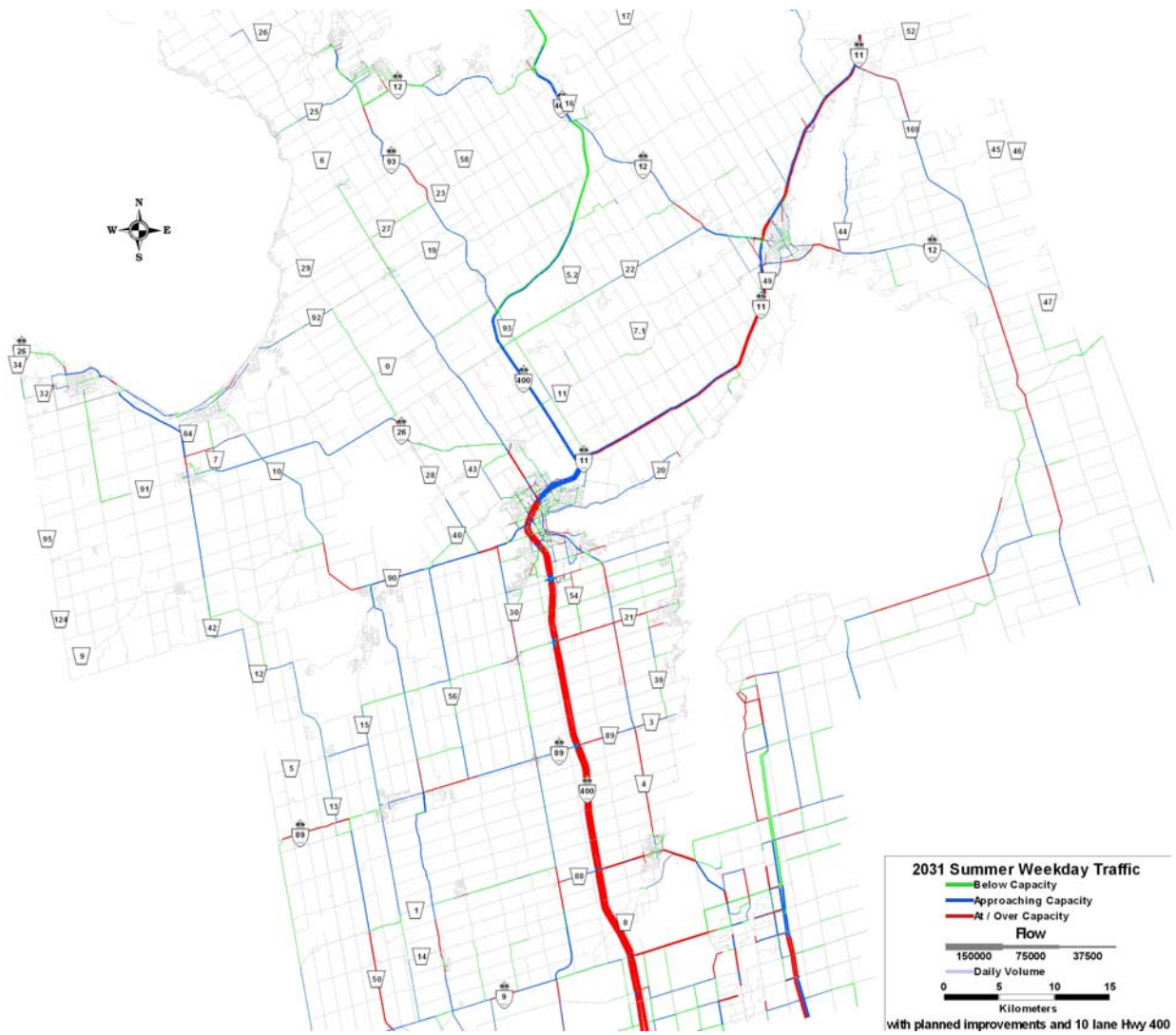


Figure 1.1 2031 Future Roadway Deficiencies – Summer Weekday Traffic

2. EVALUATION PROCESS

The Transportation Master Plan is being undertaken in accordance with the Municipal Class Environmental Assessment Process (October 2000, as amended in 2007), approved under the Environmental Assessment Act. The Transportation Master Plan has as one key objective to complete Phases 1 and 2, as outlined in **Figure 2.1**, below.

Transportation Master Plan (TMP) Municipal Class EA Process

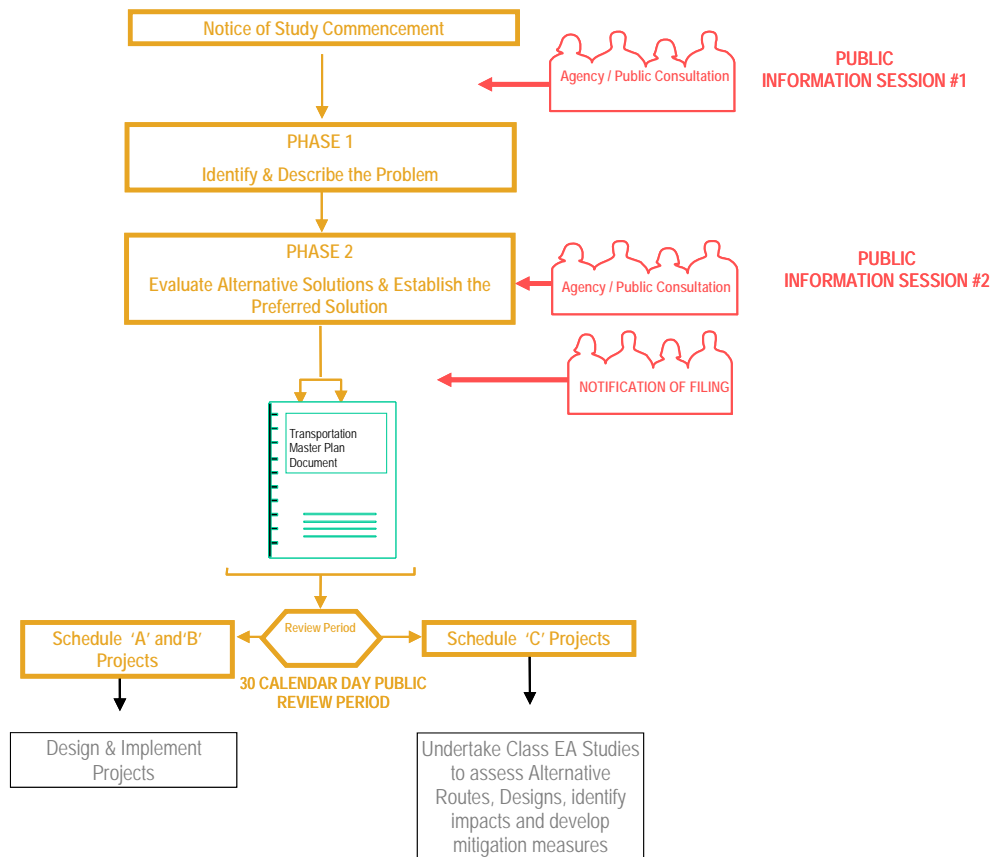


Figure 2.1 -Municipal Class Environmental Assessment Process

Within the context of a Master Planning Process, this project is intended to address the requirements of Phases 1 and 2 Municipal Class EA planning process, providing an assessment of the problem or opportunity and an assessment of alternative solutions. For projects recommended as part of the Master Plan that fall within the Schedule B category, approval of the Master Plan will constitute approval to proceed with the project. For more extensive Schedule C projects, with higher potential for environmental affects (both positive and negative), further project specific Environmental Assessment Studies may need to be completed by the County to examine alternative designs prior to implementation.

Under the EA Process, municipalities are required to consider all aspects of the environment in their assessment and evaluation of infrastructure projects. The EA Act includes a broad definition of the “environment”, including the technical, natural, social, cultural, built and economic environments. The EA Process requires a systematic evaluation of alternatives in terms of their advantages and disadvantages; and proponents are required to consider both positive and negative effects on the natural, social, cultural, and economic environments as part of their assessment and evaluation process.

The evaluation process has been based on the three important evaluation objectives set by the Municipal Class EA Process:

Compatibility: The evaluation should rely on existing County and local policies / plan wherever possible in evaluation, so that the resulting recommendations are compatible with other municipal and agency plans in the short and medium terms (0-20 years), as well as the long term (20 years and beyond) where appropriate.

Traceability: The evaluation process should follow a logical, consistent evaluation process so that the rationale for the final recommendations can be traced through clear and complete documentation.

Objectivity: The evaluation process should be undertaken in objective manner, free of any pre-conceived answers.

2.1. Phase I: Need and Justification

Phase 1 of the Master Plan, established the needs and opportunities for transportation improvements within the County of Simcoe, based on the work completed on the County of Simcoe Area Growth Plan developed to guide future growth in the County. This assessment and the resulting transportation issues were described in the *Needs and Opportunities Report*.

This report indicated that it will take a system wide approach to defining all future transportation needs of the County including walking, cycling, transit, rail, autos and trucks.

2.2. Phase II: Consideration of a Reasonable Range of Alternatives or “Alternative Solutions”

Since the Master Planning process requires a review of the transportation infrastructure on a system-wide basis, the development and evaluation of alternative solutions is typically more extensive and holistic than that undertaken for project specific EA Studies. To build upon the “system-wide” approach to the development and evaluation of alternatives, Phase 2 was broken down into a series of steps, which combine to result in the preferred Solution. These steps, illustrated in **Figure 2.2**, are briefly described below:

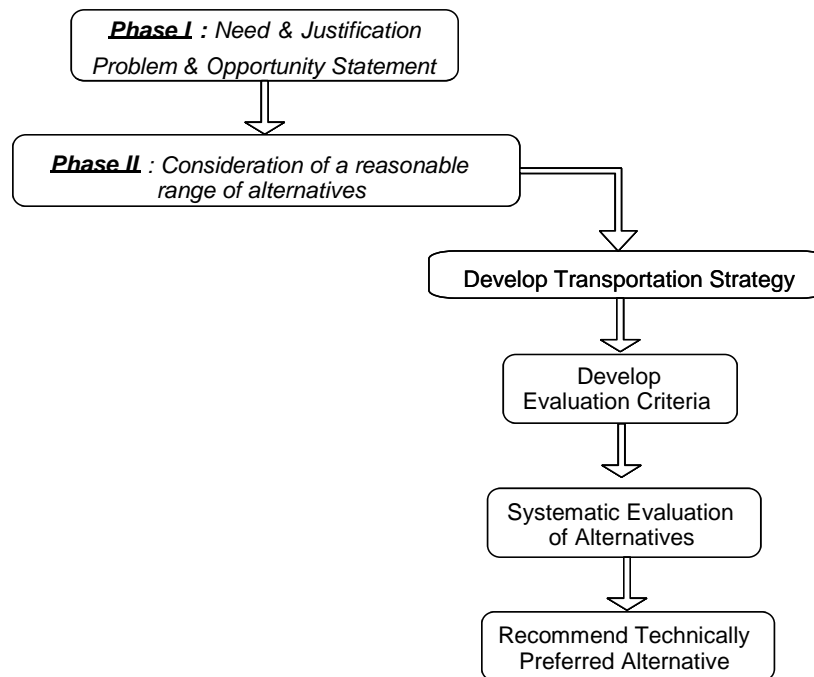


Figure 2.2-Approach to Development and Evaluation of Alternatives

Step 1: Development of a Transportation Strategy – This initial step looked at the entire transportation system and all of the prevailing modes of travel used by Simcoe residents today and in the future. Opportunities to improve transportation service and mobility, and reduce the need for new infrastructure was initially examined through a series of Transportation Strategy Options, which examined the effectiveness of various policy based approaches in meeting future transportation needs. These included specific assessment of the potential future role of:

- Walking & Cycling,
- Transit,
- Transportation Demand Management,
- Road Optimization
- Goods Movement, and
- Road Improvements

Within each policy area, three general policy approaches were developed that reflect various levels of aggressiveness, investment, and reliance on non-auto based forms of transportation. An assessment of each policy alternative was undertaken based on a number of sustainable transportation objectives representing a combination of sustainability indicators and key objectives from the *County of Simcoe Transportation Strategy Report*. A full discussion of the above is included in that report.

Even with the transportation strategies identified, there will still be a need for improving the road network. Not only are the requirements needed to accommodate future auto traffic; infrastructure improvements are required to help facilitate support of other modes of travel, such as transit.

Step 2: Development of Evaluation Criteria

The EA Act includes a broad definition of the “environment”, including the technical, natural, social, cultural, built and economic environments. The EA Process requires a systematic evaluation of alternatives in terms of their advantages and disadvantages; and proponents are required to consider both positive and negative effects on the natural, social, cultural, and economic environments as part of their assessment and evaluation process.

As part of the overall Public Consultation Strategy for the Transportation Master Plan the proposed evaluation criteria and indicators for use in evaluating subsequent road improvement alternatives was presented to the public and comments were requested. The evaluation criteria were grouped under the four key areas established as part of the Class EA process:

- Technical
- Social / Cultural
- Natural Environment; and

- Economic

A detailed discussion of the evaluation criteria, indicators, and measures used is provided below.

Step 3: Development of Alternative Road Network Improvements – Based on the projected travel demands and the effectiveness of the recommended transportation strategies, discussed above, road network improvements will still be required to ensure that the transportation system can accommodate Year 2031 daily travel demands.

The development of road network improvement alternatives must recognize that road network capacity deficiencies can either be created due to wide spread, systemic deficiencies (i.e. not enough lanes to carry peak direction flows) or localized deficiencies, caused by inefficient routing, localized demands in excess of capacity, or lack of access to / from key neighbourhoods. Often, improvements designed to address one problem can also benefit other problem areas in the County.

Individual improvements were assembled into alternative networks; each designed to address previously identified road network deficiencies. The alternative networks include projects designed to resolve capacity deficiencies as well as other improvements designed to resolve localized capacity deficiencies. Some of these localized improvements may be common to all or some alternative networks.

For the purpose of evaluation, each network alternative is subjected to a detailed comparative evaluation, using a “Reasoned Argument Process, which describes the advantages and disadvantages (or positive and negative affects) of each alternative in response to the evaluation criteria.

Step 4: Comparative Evaluation of Road Alternatives

The comparative evaluation will assess each of the alternatives based on four evaluation criteria and indicators, which range from minor impact to significant impact.

Minor impact – The alternative would likely have significant benefits in terms of the criteria and / or minimal negative affects that could be reduced or eliminated through standard mitigation measures.

Moderate impact – The alternative provides some minor benefit in terms of the criteria and could have minor negative affects (either localized or in terms of magnitude).

Significant impact – The alternative is least effective in terms of the criteria and / or could have significant negative affects.

On the basis of this information, the alternatives were comparatively evaluated to select on balance, the alternative that has the most advantages and least disadvantages and their overall evaluation was determined using three categories: Best, Second and Third.

2.3. Evaluation Criteria and Indicators

The criteria was developed recognizing the system-wide approach used in a Master Planning Study, and the fact that for many alternative improvements the specific route or design details are not developed at this stage of study. Detailed route planning or design is typically undertaken in Phase 3 of the EA process: Assessment of Design Alternatives. Thus, the evaluation compares the relative difference in potential affects that could be experienced as a result of the improvement rather than undertaking detailed assessments of specific affects, since the degree of impact could change significantly depending on the final route and / or design treatment chosen.

The following categories of consideration and their respective criteria are proposed for use in evaluating the growth:

Factor A: Technical

Criteria #1: Support for Transit / Non-Auto Modes

This criteria is based on a qualitative assessment of the ability of each alternative to support other transportation modes (e.g. pedestrian, bicycle, transit, etc.).

A road network improvement can support alternative modes of transportation where the improvement has the potential ability to reduce travel time on transit routes or where the construction of a new route provides an opportunity to enhance continuity and connectivity for non-auto modes of travel, between key origin and destination points. For example, a new river crossing may also reduce the walk / cycling distances between key origin and destination locations, improving the ability to attract some trips to alternative modes.

Criteria #2: Connectivity to County / Provincial Roads

This criteria is based on the ability of the specific roadway alternative to provide links to existing County and Provincial roads in order to help keep the road system working as needed. The connectivity indicator considers also the potential impact of traffic passing through congested settlement areas, the ability to provide route choice to commuters.

Criteria #3: Network Performance

This criterion measures the potential effectiveness of each alternative to enhance the level of transportation service on a network wide basis. Improvements to a transportation network may create a net increase / decrease in total travel time, which is a direct indicator of how well the network can serve local transportation needs in the movement of people and goods.

Factor B: Social / Cultural Environment

Criteria #4: Potential Impact to Neighbourhoods

This is a qualitative assessment of the degree to which an alternative road improvement may affect existing neighbourhoods and or communities. Changes in function and dimensions of roadways may alter some fundamental characteristics of adjacent land uses, thereby impacting neighbourhood character or community fabric. Reduction in volume of auto and truck traffic through communities can also improve community liveability, safety in residential neighbourhoods, and increase the enjoyment of residential areas or communities.

Criteria #5: Potential Impacts to Heritage Areas

This criterion compares the potential for different network improvements to affect designated natural heritage resources.

Criteria #6: Potential Impacts to Agricultural Areas

This criterion compares the potential for different network improvements to affect designated agricultural / farm growing areas.

Factor C: Natural Environment

Criteria #7: Potential Effects on Environmentally Sensitive Areas

This criterion assesses the relative affects of road network alternatives on designated Environmentally Sensitive Areas (ESA's). Designated ESA's can be areas designated by provincial legislation, or designated within the County's Official Plan. Natural features such as watercourses, woodlots and parkland, and fauna / flora species could be affected by road network improvements within or adjacent to the designated area. This occurs either by the direct removal of features or impacts caused by proximity of the road to the feature.

The evaluation of ecological impacts in the Transportation Master Plan is conducted at the system-wide master planning level, and accordingly does not address site-specific conditions, impacts or mitigation measures. The master planning evaluation highlights potential types of ecological impacts between various network alternatives, for comparative purposes only. Once the master plan selects a preferred network alternative, strategies to avoid, mitigate and/or compensate for ecological impacts will be addressed in subsequent Class Environmental Assessment processes for the design of specific projects. The provincial and federal EA process requires that where these impacts are expected, mitigation and/or compensation measures must be included as part of the project.

Criteria #8: Potential Impacts to Watercourses

Road Network Improvements may impinge upon or reduce the extent and quality of other Natural Areas which are not designated as Environmental Sensitive. This criterion evaluates if new road development would have an impact on watercourses, water streams and lakes.

Criteria #9: Potential Impacts to Habitat Areas

This criterion assesses the potential for different network improvements to affect designated Habitat Areas (Forest / Wooded). This criterion uses a qualitative assessment of the potential for impact based on the proximity of a road improvement to a designated habitat area.

Criteria #10: Potential Impacts on Air Quality

Increased traffic congestion and slower vehicle operating speeds can contribute to transportation related air quality problems due to higher levels of vehicle emissions than the same volume of traffic under efficient traffic conditions. Therefore, the ability of a network to improve travel speeds and minimize travel delays improves air quality compared to congested networks characterized by slower travel speeds and higher delays.

Factor D: Economic

Criteria # 11: Cost

The capital cost of a road network alternative is a significant factor in the County's ability to fund long range transportation infrastructure needs. For the purpose of this evaluation, the economic costs of the road improvement were identified as being more significant or less significant relative to each other.

Criteria # 12: Community Accessibility

This criterion evaluates if new road network improvements would be able to provide direct routes to existing population centres. The community accessibility indicator evaluates also whether the proposed road improvements would provide relief to other town areas.

Criteria # 13: Support Future Growth Areas

This criterion assesses the potential ability of the future road network to accommodate and support prospective settlement areas and future population/employment growth.

Criteria # 14: Support Goods Movement

This criterion evaluates the potential impacts of new road improvements on goods movement through the region, evaluates if construction of by-passes would divert traffic from urban centres and if additional roadway capacity is provided to trucks.

2.4. Detailed Evaluation Results

The attached tables summarize the evaluation of the alternatives developed to address road capacity deficiencies and highlight the positive and negative aspects of each alternative. The alternatives are ranked, using the evaluation methodology discussed previously, in terms of which alternative best satisfies the criteria or has the least potential for adverse impacts.

The overall evaluation is based on three measures of effectiveness, which range from best to third.

Best – The alternative would likely have significant benefits in terms of the criteria and /or minimal negative affects that could be reduced or eliminated through standard mitigation measures.

Second – The alternative provides some minor benefit in terms of the criteria and could have minor negative affects (either localized or in terms of magnitude).

Third – The alternative is least effective in terms of the criteria and/or could have significant negative affects.

On the basis of this information, the alternatives were comparatively evaluated to select on balance, the alternative that has the most advantages and least disadvantages.

2.4.1. Road Network Alternatives – South Simcoe

Preferred Alternatives:

Bradford (Alt 3) – Bradford By-Pass, Widening of CR 4

- Best transportation benefits / performance
- Social benefits to neighbourhoods and local air quality
- Best support for planned growth, community access & goods movement

Alliston (Alt 3) – Widening, Cookstown By-Pass using existing IC, Alliston By-Pass

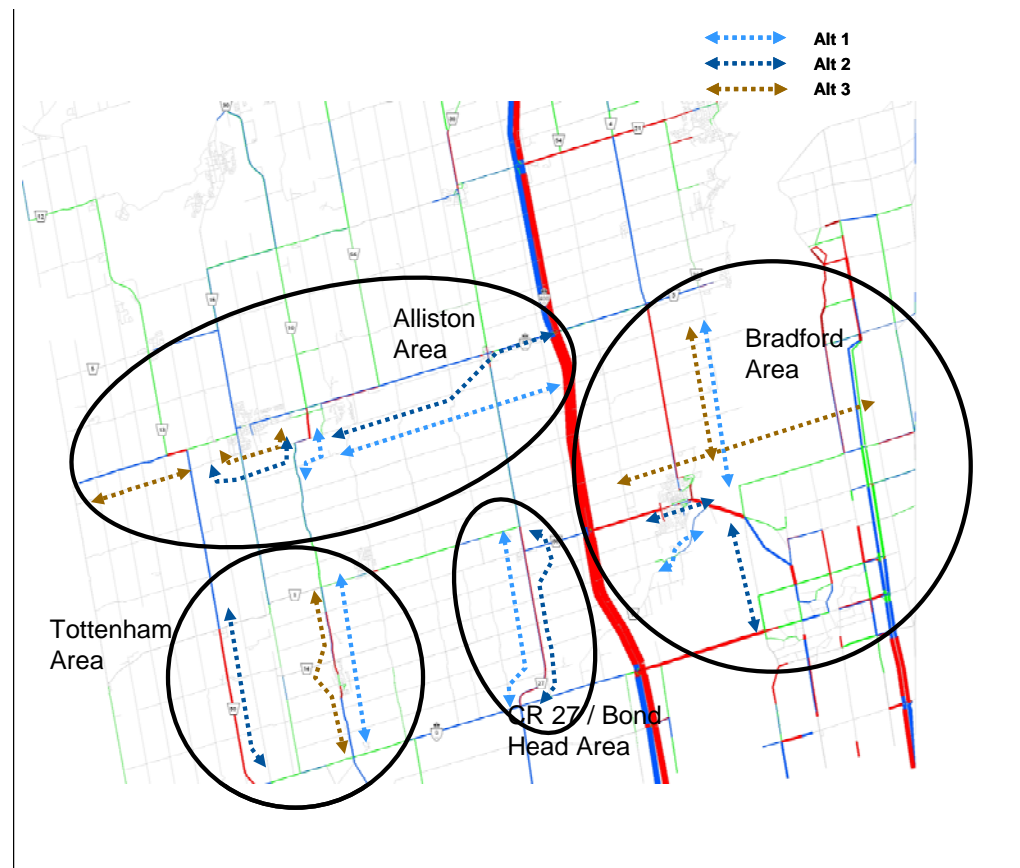
- Best overall transportation benefits / performance
- Minimizes loss of agricultural lands
- Provides best support for existing commercial development & community access

Tottenham (Alt 3) – Widening CR 10, Tottenham By-Pass

- Best overall transportation benefits / performance
- Social benefits to neighbourhoods and local air quality
- Best support for planned growth, community access & goods movement

CR 27 (Alt 2) – Widening CR 27, Bond Head By-Pass

- Best overall transportation benefits / performance
- Social benefits to neighbourhoods and local air quality



Alliston Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 89 through Cookstown Widen CR 10 South of 89	Alternative 2 Widen Hwy 89 New I.C. , Cookstown By-Pass , Alliston By-Pass	Alternative 3 Widen Hwy 89 Existing I.C., Cookstown By-Pass,Alliston By-Pass
Technical	Support for transit/non-auto modes	Provides minimal support for non-auto modes as new infrastructure may be limited. Increased traffic through Cookstown would degrade pedestrian environment.	Provides good support for non-auto modes as new infrastructure can be accommodated with By-passes. Enhanced pedestrian environment through Cookstown.	Provides good support for non-auto modes as new infrastructure can be accommodated with By-passes. Enhanced pedestrian environment through Cookstown.
	Connectivity to County/Provincial roads	Connectivity to County Roads and Provincial Highways affected by traffic passing through congested settlement areas.	Provides good connectivity to County roads and Provincial Highways but establishes new location for connection with Highway 400. Impacts connectivity to CR 89 to the east of Hwy 400.	Provides best connectivity to County roads and Provincial Highways and used existing IC with Highway 400. Maintains connectivity to CR 89 to the east of Hwy 400.
	Network Performance	Addresses capacity deficiency on Hwy 89 – modest benefit through Alliston area.	Addresses capacity deficiency on Hwy 89 – improved benefit through Alliston area.	Addresses capacity deficiency on Hwy 89 – improved benefit through Alliston area.
Social/Cultural Environment	Potential impacts to neighbourhoods	Highest impact to neighbourhoods as they will experience higher traffic volumes and delays in the future.	Least amount of impact on settlement areas as a result of future traffic volumes as traffic would use By-passes, removing future traffic from built up areas.	May not be as effective in diverting traffic away from Cookstown with use of existing interchange.
	Potential impacts to heritage areas	No impact to Natural Heritage Units	No impact to Natural Heritage Units	No impact to Natural Heritage Units
	Potential impacts to agricultural areas	Minor agricultural land would be needed to widen both roads	Agricultural land would be needed to construct the Cookstown By-Pass and the new interchange	Agricultural land would be needed to construct the Cookstown By-Pass
Natural	Potential effects on	Minor impact	Significant potential for impact	Moderate potential for impact

Alliston Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 89 through Cookstown Widen CR 10 South of 89	Alternative 2 Widen Hwy 89 New I.C. , Cookstown By-Pass , Alliston By-Pass	Alternative 3 Widen Hwy 89 Existing I.C., Cookstown By-Pass,Alliston By-Pass
Environment	environmentally sensitive areas			
	Potential impacts to watercourses	May impact Border Sand Plain	May impact Border Sand Plain New I.C. may impact Innisfil Till Plain and a few water streams	May impact Border Sand Plain
	Potential impacts to habitat areas	Minor impact on wooded areas	Significant potential for impact on wooded areas	Moderate impact on wooded areas
	Potential impacts on air quality	Increased capacity would lead to additional traffic through Cookstown and Alliston downtowns and increased vehicle emissions	Cookstown and Alliston By- Passes would alleviate traffic on downtowns, leading to less vehicle emissions	Cookstown and Alliston By- Passes would alleviate traffic on downtowns, leading to less vehicle emissions
Economic	Cost	Moderate cost for widening of Highway 89 (Provincial) and minor costs for widening for CR 10.	Highest overall cost resulting from new interchange with Highway 400 (Provincial) and By-passes for both Cookstown and Alliston. .	High costs associated with widening Highway 89 (Provincial) and By-passes for both Cookstown and Alliston
	Community Accessibility	Most desirable option for community accessibility as provides the most direct route.	Least desirable option for community accessibility with new IC further away from settlement area and introduction of two new By-passes.	Moderate desirable option for community accessibility as use of existing Hwy 400 IC but introduction of two new By- passes diverting traffic away from settlement areas..
	Support Future Growth Areas	Less ability to accommodate future growth areas as congestion through Cookstown and in Alliston occur.	Good ability to support future growth areas with new interchange location and provision of By- passes around settlement areas and improve operations though built up	Good ability to support future growth areas By-passes around settlement areas and improve operations though built up area.

Alliston Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 89 through Cookstown Widen CR 10 South of 89	Alternative 2 Widen Hwy 89 New I.C. , Cookstown By-Pass , Alliston By-Pass	Alternative 3 Widen Hwy 89 Existing I.C., Cookstown By-Pass,Alliston By-Pass
			area.	
	Support Goods Movement	Least supportive of Goods movement as trucks would travel through built up areas.	Provision of By-passes supports Goods movement activity and minimizes impacts to settlement areas as a result of truck traffic.	Provision of By-passes supports Goods movement activity and minimizes impacts to settlement areas as a result of truck traffic.
OVERALL EVALUATION		THIRD	SECOND	BEST Best overall transportation benefits / performance Minimizes loss of agricultural lands Provides best support for existing commercial development and community access

Bradford Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 – 5th Line IC, Widen CR 4, Bridge Street	Alternative 2 – CR88- 6 lane, CR 4 connection to Keele	Alternative 3 Bradford By-Pass, Widen CR4-
Technical	Support for transit/non-auto modes	Limited benefit to traffic congestion through downtown Bradford. Through traffic in downtown will still reduce attractiveness for walking / cycling.	Widening to 6 lanes would not provide a pedestrian / cycling friendly environment. Through traffic still directed through downtown Bradford reducing activeness for walking / cycling.	Provides best benefit to downtown Bradford as through traffic drawn to new by-pass. Reduced traffic though downtown provides enhance pedestrian / cycling environment. Assumed HOV / transitway facilities on new by-pass would enhance interregional transit linkages to Hwy 404 corridor.
	Connectivity to County/ Provincial roads	New interchange provided at Highway 400 and 5 th Line providing another connection for Bradford to Highway 400.	New connection provided to Keele Street in York Region but no new connections to Provincial highways. Replaces Canal Road interchange.	New Highway connecting Highway 404 with Hwy 400 completes a major link serving goods provincial flows that currently use local roads. Provides route choice for commuters and trucks between Hwy 400 and Hwy 404 corridors.
	Network Performance	Provides some relief to congestion on CR 88, but limited benefit to Holland Street / Bridge street.	Provides some relief to congestion on CR 88, but limited benefit to Holland Street / Bridge street.	Provides the best overall network performance, significantly reducing congestion in Bradford and on Hwy 400 to south.
Social/Cultural Environment	Potential impacts to neighbourhoods	Negative impact on exiting neighbourhoods as more traffic will travel through neighbourhood. Provides no alternate route for travelers.	New connection to Keele Street at south end of Bradford. Potential diversion of trips from using Bridge St./Dissette corridor and infiltration through neighbourhood	Positive impact to Bradford area residence by reducing the vehicle traffic traveling through existing neighbourhoods.
	Potential impacts to heritage areas	No Natural Heritage Areas	No Natural Heritage Areas	No Natural Heritage Areas

Bradford Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 – 5 th Line IC, Widen CR 4, Bridge Street	Alternative 2 – CR88- 6 lane, CR 4 connection to Keele	Alternative 3 Bradford By-Pass, Widen CR4-
	Potential impacts to agricultural areas	Modest potential for impact to agricultural areas.	New crossing of Holland Marsh would have significant potential for impact to prime farmland.	Modest potential for impacts to agricultural areas.
Natural Environment	Potential effects on environmentally sensitive areas	Bridge Street widening would cross a narrow section of the Innisfil Till Plain and Provincial Wetland (only would add two new lanes)	New CR4 connect to Keele Street would cross a wide section of Holland River and both canals.	Bradford By-Pass would cross a wide section of the Holland Marsh, a Provincially Significant Wetland, with a four new lane cross section. Impacts could be minimized during route selection.
	Potential impacts to watercourses	No new crossing of watercourse as with other alternatives. However, widening would have some impact on existing crossing.	Negative impact as the new road crossing would require a new crossing of the Holland River and canals.	Negative impact as new road would require a new crossing of the Holland River. Would likely have more impact than Alternative 2 as would be larger road facility.
	Potential impacts to habitat areas	Scanlon Creek Conservation Area is located on East side of CR 4	Modest potential for impacts through Holland Marsh corridor.	Scanlon Creek Conservation Area is located on East side of CR 4. Bradford By-Pass would cross several wooded areas. Impacts could be minimized during route selection.
	Potential impacts on air quality	Provides more congestion relief than Alternative 2 thereby leading less vehicle emissions than in Alternative 2	Increased capacity would lead to additional traffic on Bradford downtown roads and increased vehicle emissions	Bradford By-Pass would alleviate traffic congestion through Bradford, leading to less vehicle emissions
Economic	Cost	Has significant costs associated with construction of interchange, widening of CR 4 and Bridge Street.	Has the least significant cost of all three options as does not require interchange.	Most significant cost of all options as requires construction of freeway and interchanges.

Bradford Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 – 5 th Line IC, Widen CR 4, Bridge Street	Alternative 2 – CR88- 6 lane, CR 4 connection to Keele	Alternative 3 Bradford By-Pass, Widen CR4-
	Community Accessibility	Road improvement alternatives will assist in linking to other communities.	Limited ability to link communities and make more accessible.	Provides key link between communities making them more accessible.
	Support Future Growth Areas	Provides additional connection to provincial highway system for growth areas.	Provides minimal support for future growth areas as new connection to Keele St. has limited effectiveness in linking areas.	Provides additional road capacity required to accommodate future growth and provides additional goods movement corridor.
	Support Goods Movement	Provides opportunity for alternate goods movement route to other areas of the County. Provides additional capacity for vehicles and for goods movement traveling through Bradford to other areas..	New connection to Keele Street provides some support for goods movement, however, does not serve (link to) existing goods movement corridors. CR88 only provides minimal support as it only services between Brantford and Highway 400.	Bradford By-Pass is a key element in supporting goods movement through the region as it connects exiting key goods movement corridors, Highways 404 and 400.
Overall Evaluation		SECOND	THIRD	BEST Best transportation benefits / performance Social benefits to neighbourhoods and local air quality Best support for planned growth, community access & goods movement

County Road 27 Area Alternatives			
Evaluation Criteria	Indicators	Alternative 1 – Widen CR 27 through Bond Head	Alternative 2 – Widen CR 27 + Bond head By-Pass
Technical	Support for transit/non-auto modes	Limited ability to accommodate additional infrastructure elements related to non-auto modes of transportation through built up area.	Potential to incorporate infrastructure requirements to accommodate transit or non auto modes of transportation new section of By-pass. By-pass allows for enhanced pedestrian environment within Bond Head – less traffic
	Connectivity to County/Provincial roads	Road continues to travel through built up area which impacts connectivity to other County Roads. Jog between CR 88 and CR 1 remains.	Provides better connectivity between CR 1, CR 88, and CR 27.
	Network Performance	Addresses capacity deficiencies on CR 27	Addresses capacity deficiencies on CR 27
Social/Cultural Environment	Potential impacts to neighbourhoods	Negative impact as all traffic continues to pass through main settlement area.	Positive impact as route By-passes the main settlement area.
	Potential impacts to heritage areas	No impact on existing Natural Heritage Units	No impact on existing Natural Heritage Units
	Potential impacts to agricultural areas	Less land required than Alternative 2.	By-pass would impact more areas surrounding Bond Head.
Natural Environment	Potential effects on environmentally sensitive areas	No designated environmentally sensitive areas affected	No designated environmentally sensitive areas affected
	Potential impacts to watercourses	Approximately 13 water streams would be crossed by the CR 27 widening from Highway 9 to CR 1. May affect Little Pottagevillage Wetland to the south	Approximately 13 water streams would be crossed by the CR 27 widening from Highway 9 to CR 1. May affect Little Pottagevillage Wetland to the south.

County Road 27 Area Alternatives			
Evaluation Criteria	Indicators	Alternative 1 – Widen CR 27 through Bond Head	Alternative 2 – Widen CR 27 + Bond head By-Pass
	Potential impacts to habitat areas	No impact on existing wooded areas	Bond Head By-Pass may affect wooded areas around its urban perimeter
	Potential impacts on air quality	Increased capacity would lead to additional traffic through Bond Head settlement area and increased vehicle emissions	Bond Head By-Pass would alleviate traffic through settlement area, leading to less vehicle emissions.
Economic	Cost	Moderate costs for widening.	Slightly longer route and construction of new road for By-Pass would make Alternative more expensive to construct than Alternative 1.
	Community Accessibility	Better access to community as road travels through settlement area.	By-pass directs traffic away from settlement area which may have slight impact on community accessibility and local businesses.
	Support Future Growth Areas	Existing alignment does not support future growth areas as well as with the provision of a By-pass as bottlenecks would occur through settlement area.	Creation of a By-pass would provide additional capacity to accommodate future growth in the area.
	Support Goods Movement	Does not support Goods movement as trucks continue to travel through the existing settlement area.	By-pass will provide better support for Goods Movement at trucks would not have to travel through existing settlement area.
Overall Evaluation		SECOND	BEST Best overall transportation benefits / performance Social benefits to neighbourhoods and local air quality Best support for planned growth, community access & goods movement

County Road 10/50 (Tottenham) Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 – Widen CR 50	Alternative 2 – Widen CR 10 through Tottenham	Alternative 3 – Widen CR 10+Tottenham By- pass
Technical	Support for transit/non-auto modes	Widening provides an opportunity to provide infrastructure required to accommodate non-auto modes or transit but is located further away from populated areas.	Widening provides an opportunity to provide infrastructure required to accommodate non-auto modes or transit but is located further away from populated area	Provides best support for transit and non-auto modes of transportation. By-pass provides opportunity for infrastructure to accommodate other modes of travel. Enhanced pedestrian environment in Tottenham.
	Connectivity to County/ Provincial roads	Maintains connection to county and provincial roads but not as convenient route at CR 10	Provides good connectivity to County Roads and Provincial Highways, but vehicles may experience slight delays while passing through settlement area of Tottenham.	Provides better connectivity (and less travel delays) to adjacent Provincial highways and county road system and settlement areas with the By-pass of the built up area of Tottenham
	Network Performance	Address capacity deficiencies on CR 50 corridor – CR 10 remains at / over capacity	Address capacity deficiency on CR 50 and CR 10, except through Tottenham due to delays in urban area.	Address capacity deficiency on CR 50 and CR 10, reduced delays through Tottenham.
Social/Cultural Environment	Potential impacts to neighbourhoods	Widening of CR 50 may attract some trips away from CR 10 thereby improving operations through Tottenham.	With increase in trips in the future, there will be more impacts to Tottenham. Impact on attractiveness of downtown area.	Improves operations through the settlement area of Tottenham with the By-pass. Removes through traffic from downtown neighbourhood areas.
	Potential impacts to heritage areas	May impact Oak Ridges Moraine Natural Heritage Unit – Upper Bailey Creek	No impact on existing Natural Heritage Units	No impact on existing Natural Heritage Units
	Potential impacts to agricultural areas	Minimal potential for impact	Modest potential for impact north of Tottenham	Modest potential for impact north of Tottenham

County Road 10/50 (Tottenham) Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 – Widen CR 50	Alternative 2 – Widen CR 10 through Tottenham	Alternative 3 – Widen CR 10+Tottenham By-pass
Natural Environment	Potential effects on environmentally sensitive areas	Modest potential for impacts to designated environmentally sensitive areas.	Minimal potential for impacts	Higher potential for impact to Conservation area on west side of Tottenham – could be mitigated by route to east of Tottenham.
	Potential impacts to watercourses	CR 50 crosses a number of minor watercourses + Nottawasaga River. Moderate potential for impacts – can be mitigated through design.	CR 10 crosses a number of minor watercourses + Nottawasaga River. Moderate potential for impacts – can be mitigated through design..	Higher potential for impact to Conservation area on west side of Tottenham – could be mitigated by route to east of Tottenham.
	Potential impacts to habitat areas	Higher potential for impact	Modest potential for impact	Higher potential for impact to Conservation area.
	Potential impacts on air quality	Attracts some traffic away from CR 10 but congestion in Tottenham will still affect local air quality	Higher traffic through Tottenham will affect local air quality.	Provides best benefit to local air quality as traffic removed from congested downtown area of Tottenham.
Economic	Cost	Moderate costs for construction of CR 50.	Potential high cost for Alternative as widening will likely require additional private property through Tottenham.	Moderate costs for widening CR 10 and construction of By-Pass.
	Community Accessibility	Alternative provides limited additional accessibility for communities as CR does not directly service settlement areas.	Provides most direct route into community making it more accessible to others.	Provides good accessibility for the community as it is close to and services the settlement area.
	Support Future Growth Areas	Provides minimal support for future growth areas as is further away from areas planned growth areas.	Provides support for future planned growth areas but is limited by delays created though settlement area.	Best support for supporting future planned growth areas as By-pass provides additional capacity required.

County Road 10/50 (Tottenham) Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 – Widen CR 50	Alternative 2 – Widen CR 10 through Tottenham	Alternative 3 – Widen CR 10+Tottenham By-pass
	Support Goods Movement	Widening of CR 50 would support Goods movement but may not provide direct connection to industrial area.	Least supportive of Goods movement as trucks would have to pass through settlement area.	By-pass provides good support for Goods movement as can still accommodate trucks without impacting settlement area.
Overall Evaluation		THIRD	SECOND	BEST Best overall transportation benefits / performance Social benefits to neighbourhoods and local air quality Best support for planned growth, community access & goods movement

2.4.2. Road Network Alternative Central Simcoe

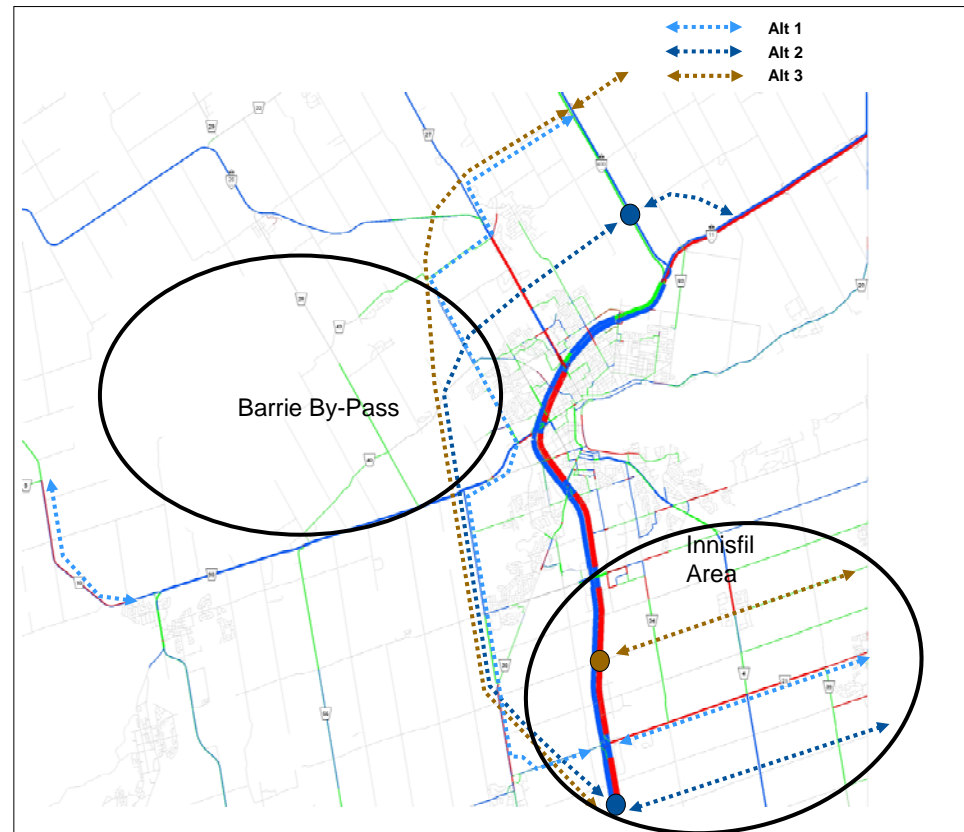
Preferred Alternatives:

Innisfil (Alt 1) – Widen CR 21

- Best transportation benefits / performance
- Minimizes loss of agricultural lands
- Lower Cost – eliminates new interchange
- Best support for planned growth, community access & goods movement

Barrie By-Pass (Alt 3) – New Freeway By-Pass North of Midhurst

- Best overall transportation benefits / performance
- Minimizes natural environmental impacts, and impacts to existing built up areas
- Provides support for future growth areas, and best support for goods movement



Innisfil Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen CR 21	Alternative 2 New 5th Line I.C., Improve 5th Line	Alternative 3 New 10th Line I.C., Improve 10th Line
Technical	Support for transit/non-auto modes	Widening offers opportunity to provide some non-auto facilities – enhances access to existing Hwy 400 carpool lot	New 5 th Line connection could be designed to provide cycling facilities in Right-of-way	Widening 10 th line would increase traffic and reduce attractiveness for walking / cycling – Stroud area
	Connectivity to County/Provincial roads	Maintains existing connectivity to County and Provincial Roads.	Improves connectivity to County/Provincial roads as provides new connection with Highway 400.	Improves connectivity to County/Provincial roads as provides new connection with Highway 400.
	Network Performance	Provides best overall level of service for trips in / out of Innisfil – addresses congestion on CR 21	Does not attract enough trips from CR 21 corridor to address deficiency	Does not attract enough trips from CR 21 corridor to address deficiency – Results in new congestion through Stroud
Social/Cultural Environment	Potential impacts to neighbourhoods	Widening may have moderate impact to industrial/commercial area close to Hwy. 400.	No impact to neighbourhoods.	May negatively impact Stroud with introduction of additional traffic and widening through hamlet.
	Potential impacts to heritage areas	Moderate impact on Innisfil Till Plain Natural Heritage Unit – Lover’s Creek Valley	Minor impact on Innisfil Till Plain Natural Heritage Unit – Lover’s Creek Valley	Significant impact on Innisfil Till Plain Natural Heritage Unit – Lover’s Creek Valley
	Potential impacts to agricultural areas	Minor loss of agricultural lands	Significant loss of agricultural lands	Moderate loss of agricultural lands
Natural Environment	Potential effects on environmentally sensitive areas	Higher potential for impact on environmentally sensitive areas	Moderate impact on environmentally sensitive areas	Minor impact on environmentally sensitive areas
	Potential impacts to watercourses	Higher potential for impact on Innisfil Till Plain Natural Heritage	Moderate potential for impact on Innisfil Till Plain Natural Heritage	Minor potential for impact on Innisfil Till Plain Natural Heritage

Innisfil Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen CR 21	Alternative 2 New 5th Line I.C., Improve 5th Line	Alternative 3 New 10th Line I.C., Improve 10th Line
		Unit – Lover’s Creek Valley	Unit – Lover’s Creek Valley	Unit – Lover’s Creek Valley
	Potential impacts to habitat areas	Higher potential for impact to wooded areas adjacent to corridor	Moderate potential impact on wooded areas	Minor potential for impact on wooded areas
	Potential impacts on air quality	Moderate – additional traffic attracted to corridor, although congestion is reduced	Minor impact – limited development around corridor	Moderate – impacts to existing neighbourhoods in Stroud due to added traffic / congestion
Economic	Cost	Lower cost as no new interchange with Hwy. 400	High cost associated with new interchange with Hwy. 400.	High cost associated with new interchange with Hwy. 400.
	Community Accessibility	Maintains direct connection with community and provides easier access to the community.	Provides another connection with Hwy. 400 but may not improve traffic operations on CR 21 as well as Alternative 1 to aid in improving community accessibility	Provides another connection with Hwy. 400 but may not improve traffic operations on CR 21 as well as Alternative 1 to aid in improving community accessibility
	Support Future Growth Areas	Widening of CR 21 helps address capacity issue and supports planned growth areas within Innisfil.	Located south of major growth areas, does not provide as much support as alternative services a smaller area.	Provides good support for future planned growth areas in Innisfil, improved access to Hwy 400.
	Support Goods Movement	Best supports goods movement – promotes existing County Road.	Limited ability to support Goods movements as Township road likely cannot accommodate truck traffic.	Limited ability to support Goods movements as Township road likely cannot accommodate truck traffic.
OVERALL EVALUATION		BEST Best transportation benefits / performance Minimizes loss of agricultural lands Lower Cost – eliminates new interchange Best support for planned growth, community access and goods movement	SECOND	THIRD

Barrie By-Pass Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Improve / Widen County Roads CR 21, 27, CR 90 to Ferndale/Wilson Road (or Miller Dr. to CR 40 to Wilson)	Alternative 2 New Freeway By-Pass South of Midhurst	Alternative 3 New Freeway By-Pass North of Midhurst
Technical	Support for transit/non-auto modes	Does not support transit / non auto modes of travel – by-pass via local roads will reduce attractiveness for walking and cycling and impede current local transit service (in Barrie)	Provides good support for transit (opportunity for transitway / HOV within new corridor). Reduced volumes on local roads makes transit more effective, and walking / cycling more attractive. Congestion on Hwy 26 / Bayfield still remains, impeding transit in this key corridor.	Provides good support for transit (opportunity for transitway / HOV within new corridor). Reduced volumes on local roads makes transit more effective, and walking / cycling more attractive. Provides better relief to congestion on Hwy 26 / Bayfield, improving transit in this key corridor.
	Connectivity to County/ Provincial roads	Provides connectivity to County Roads and provincial highways but not direct connections.	Good connection between Hwy. 400 south of Barrie and north of Barrie. New interchange south of CR 21 and connects to Hwy 400 at new IC south of CR 11.	Best connection between Hwy. 400 south of Barrie and north of Barrie. New interchange south of CR 21 and connects to Hwy 400 at CR 11.
	Network Performance	Does not draw enough traffic from Hwy 400 to resolve long term congestion – only a short-medium term alternative	Addresses congestion in Barrie by diverting through traffic (primarily for Hwy 26 corridor. Congestion on Hwy 26 and CR 27 still remain.	Addresses congestion in Barrie by diverting through traffic for Hwy 26 and Hwy 400 corridors. Congestion on Hwy 26 and CR 27 addressed.
Social/Cultural Environment	Potential impacts to neighbourhoods	Most significant impact on neighbourhoods as route directs traffic into an existing neighbourhood along Ferndale Road. Potentially less impact on neighbourhoods if using Miller Dr.)	Provides alternate route for traffic around Barrie but will impact neighbourhoods in Midhurst	Provides positive impact to neighbourhoods as alternative provides an alternate route for traffic around Barrie and Midhurst to connect with Hwy. 400

Barrie By-Pass Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Improve / Widen County Roads CR 21, 27, CR 90 to Ferndale/Wilson Road (or Miller Dr. to CR 40 to Wilson)	Alternative 2 New Freeway By-Pass South of Midhurst	Alternative 3 New Freeway By-Pass North of Midhurst
	Potential impacts to heritage areas	Minor impact on existing Heritage Units	Moderate impact on Borden Sand Plain Heritage Unit – Allandale Bluffs / Bear Creek and Oro Moraine Heritage Unit – Willow Creek Valley	Significant impact on Borden Sand Plain Heritage Unit – Allandale Bluffs / Bear Creek and Oro Moraine Heritage Unit – Willow Creek Valley
	Potential impacts to agricultural areas	Minor impact on loss of agricultural land	Significant impact on loss of agricultural land	Moderate impact on loss of agricultural land
Natural Environment	Potential effects on environmentally sensitive areas	Minor impact on Border Sand Plain Greenland and Innisfil Till Plain	Significant impact on Border Sand Plain Greenland and Innisfil Till Plain	Moderate impact on Border Sand Plain Greenland and Innisfil Till Plain
	Potential impacts to watercourses	Significant impact on Bear Creek Wetland. May impact Allandale Lake Algonquin Bluffs	Moderate impact on Bear Creek Wetland. May impact Allandale Lake Algonquin Bluffs	Minor impact on Bear Creek Wetland. May impact Allandale Lake Algonquin Bluffs
	Potential impacts to habitat areas	Moderate impact on wooded area. Existing trail through wooded area along Miller Drive)	Moderate impact on wooded areas	Significant impact on wooded areas
	Potential impacts on air quality	Significant potential for impact due to longer travel distance, slower speeds, and proximity to residential areas.	Moderate impact adjacent to route – benefits to local air quality within Barrie due to reduced congestion	Moderate impact adjacent to route – benefits to local air quality within Barrie due to reduced congestion
Economic	Cost	Most cost effective alternative. Cost to widen road will be minimal compared to constructing new highway.	High construction costs as new interchanges required along with construction of new highway.	High construction costs with new interchanges, and construction of longer length of highway than Alternative 2.

Barrie By-Pass Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Improve / Widen County Roads CR 21, 27, CR 90 to Ferndale/Wilson Road (or Miller Dr. to CR 40 to Wilson)	Alternative 2 New Freeway By-Pass South of Midhurst	Alternative 3 New Freeway By-Pass North of Midhurst
	Community Accessibility	Minor improvement to community accessibility with widening of roads.	Moderate improvement in community accessibility with introduction of the By-pass.	High improvement in community accessibility to the northern Simcoe communities.
	Support Future Growth Areas	Minimal support for future growth areas as utilizing existing roads which may have limited capacity.	Moderate support for future growth areas in Barrie, but may impact growth in Midhurst.	Good support for future growth areas and Midhurst Secondary Plan Area, as it provides additional road capacity around congested areas.
	Support Goods Movement	Least supportive of goods movement as routes travels through existing neighbourhood areas	Supports Goods movement as it provides an alternate route around Barrie but may experience some delays around Midhurst as area develops.	Most supportive of Goods Movement as route provides an alternative to traveling “through” congested areas of Barrie. Best support of goods movement to northern communities.
OVERALL EVALUATION		<p>THIRD</p> <ul style="list-style-type: none"> This alternative is ranked third in its ability to accommodate anticipated traffic volumes under 2031 conditions on its own without any other improvements. However, this route, is recommended as an interim measure to accommodate local traffic and to act as an alternate route to Bayfield Street. Road optimization strategy recommends improving existing roads prior to building new roads. 	<p>SECOND</p>	<p>BEST</p> <ul style="list-style-type: none"> Best overall transportation benefits / performance Minimizes natural environmental impacts, and impacts to existing build up areas Provides support for future growth areas, and best support for goods movement

2.4.3. Road Network Alternative Collingwood / Wasaga

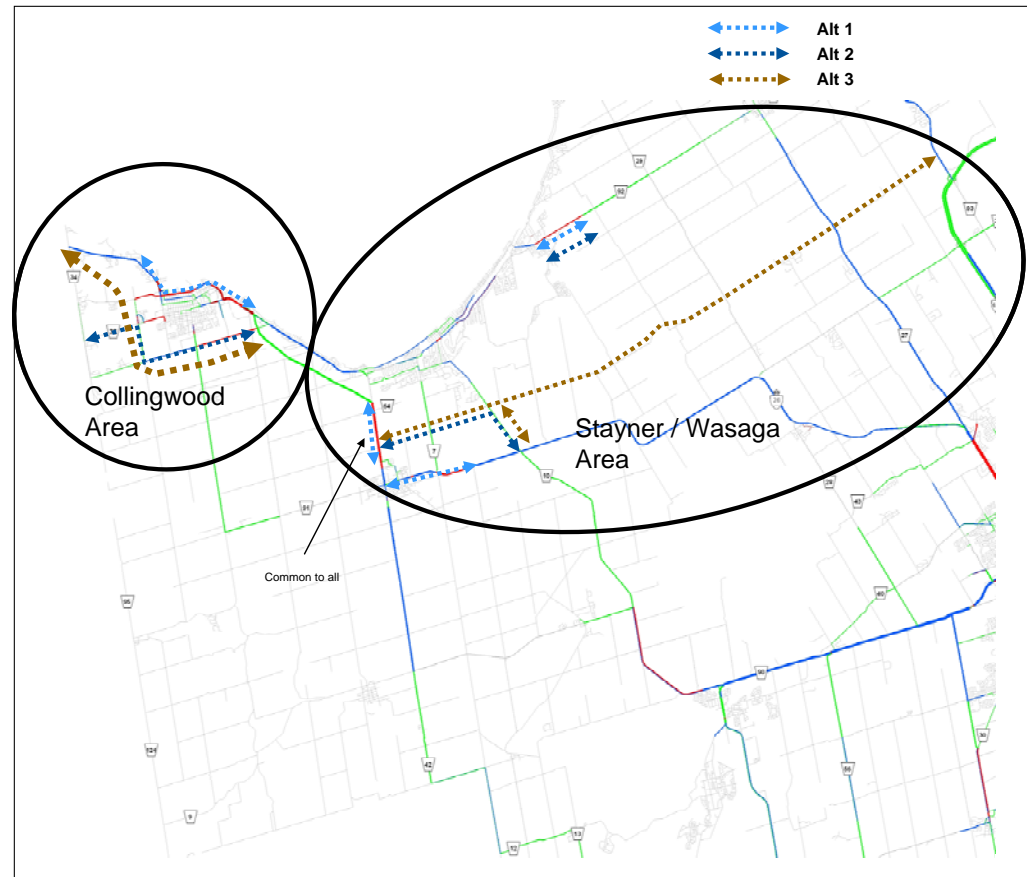
Preferred Alternatives:

Collingwood Area (Alt 3) – Collingwood By-Pass

- Best transportation benefits / performance
- Social benefits to neighbourhoods and local air quality
- Higher potential for natural environmental affects – can be mitigated through route selection / design
- Best support for planned growth, community access & goods movement

Stayner / Wasaga Area (Alt 3) – New County Road via Flos Road 4, Improve CR 10

- Best overall transportation benefits / performance
- Minimizes impacts to existing built up areas
- Provides support for future growth areas, and good support for goods movement



Collingwood Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 26 Through Collingwood	Alternative 2 County Road By-Pass via Widened Poplar SR, 10 th , CR 32	Alternative 3 New Hwy 26 By-Pass
Technical	Support for transit/non-auto modes	Provides some support in improving operations on other roads throughout the town which could accommodate non-auto modes of travel.	Provides some support for non-auto trips as improvements could include infrastructure to accommodate other modes of travel.	Provides good support for transit with a new corridor. Reduces volumes on other roads in the Town making them more effective for transit and other modes of transportation.
	Connectivity to County/Provincial roads	Does not provide any new connections to County roads or Provincial Highways.	Provides good connectivity to other roads in the area and provides a new connection on the south side of the Town.	Best connectivity to other County roads and highways with new by-pass.
	Network performance	Does not address completely congestion issues in Collingwood.	Good interim measure in dealing with congestion in Collingwood however, located within a built up area.	Best solution in addressing traffic congestion issues in the Town as a result of future growth.
Social/Cultural Environment	Potential impacts to neighbourhoods	Potential for neighbourhood infiltration is Hwy 26 is congested.	Route travels through and existing neighbourhood but may help relieve potential neighbourhood infiltration in other areas of the Town as a result of congestion.	By-passes existing neighbourhoods. Should minimize traffic infiltration in other areas of the Town which result from capacity issues on "old Hwy. 26.
	Potential impacts to heritage areas	Significant impact on Collingwood Shores and Pretty River in Wasaga Lowlands Natural Heritage Unit	Moderate impact to Pretty River in Wasaga Lowlands Natural Heritage Unit	Minor impact - no heritage areas affected
	Potential impacts to agricultural areas	Minor impact to agricultural lands	Moderate impact to agricultural lands	Significant impact to agricultural lands

Collingwood Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 26 Through Collingwood	Alternative 2 County Road By-Pass via Widened Poplar SR, 10 th , CR 32	Alternative 3 New Hwy 26 By-Pass
Natural Environment	Potential effects on environmentally sensitive areas	Significant impact on Collingwood Shores and Pretty River in Wasaga Lowlands Natural Heritage Unit	Moderate impact to Pretty River in Wasaga Lowlands Natural Heritage Unit	Minor impact - no heritage areas affected
	Potential impacts to watercourses	Minor impact	Moderate impact	Significant impact
	Potential impacts to habitat areas	Minor impact to wooded areas	Moderate impact to wooded areas	Significant impact to wooded areas
	Potential impacts on air quality	Significant impact due to increased traffic and vehicle emissions on Collingwood urban area	Moderate impact due to traffic diverted to By-Pass	Minor impact due to reduced traffic and vehicle emissions affecting Collingwood urban area
Economic	Cost	Least construction cost of alternatives as widening of existing highway.	Moderate construction costs as existing roads required upgrading to accommodate anticipated traffic.	Most significant cost of alternatives as required construction of a new Highway.
	Community Accessibility	Minor improvements to community accessibility but no new route created with this alternative.	Helps provide relief to other areas of the Town thereby improving community accessibility.	Best alternative for supporting community accessibility as it provides relief for other areas of the Town and provides a new route.
	Support Future Growth Areas	Minimal support for future growth as capacity of improvement is limited.	Moderate support for future growth areas as it provides an opportunity for alternate route around the Town.	Best support for future growth areas as it can accommodate future traffic associated with future growth.
	Support Goods Movement	Some support for Goods movement as it improves operations along existing Goods movement corridor.	Minimal support for Goods movement. May help create more road capacity in other areas of the Town used for Goods movement.	Best support for Goods movement with new route around the Town.

Collingwood Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 26 Through Collingwood	Alternative 2 County Road By-Pass via Widened Poplar SR, 10 th , CR 32	Alternative 3 New Hwy 26 By-Pass
OVERALL EVALUATION		SECOND	THIRD <ul style="list-style-type: none"> This alternative is ranked third overall in its ability to accommodate anticipated traffic volumes in 2031 on its own without any other improvements. However, this route, is recommended as an interim measure to accommodate additional traffic in the area and provide relief to Highway 26 through Collingwood. Road optimization strategy recommends improving existing roads prior to building new roads. 	BEST <ul style="list-style-type: none"> Best transportation benefits / performance Social benefits to neighbourhoods and local air quality Higher potential for natural environmental affects – can be mitigated through route selection / design Best support for planned growth, community access & goods movement

Stayner/Wasaga Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 26 through Stayner Widen CR 92 into Wasaga	Alternative 2 Stayner By-Pass via CR 10 and CR 27/287 SR	Alternative 3 New CR via Flos Rd 4 Improve CR 10
Technical	Support for transit/non-auto modes	Minimal support transit/non-auto modes of travel with proposed widening to promote walking, cycling etc.	New road connections provides the opportunity to include infrastructure for non-auto modes or travel (i.e. bike, trails etc.)	New road connections provides the opportunity to include infrastructure for non-auto modes or travel (i.e. bike, trails etc.)
	Connectivity to County/Provincial roads	No new road connections established. Connectivity to County roads and highways remains the same.	Moderate improvement to connectivity to other roads with new by-pass along the north side of Stayner.	Good connectivity to other County road and Provincial Highways in the County with extension of Flos Rd. 4
	Network Performance	Minimal impact to congestion relief with widening of Hwy 26 through Stayner.	Provides relive to congestion through Stayner.	Provides relief to congestion on CR 92 and along Hwy 26 through Stayner.

Stayner/Wasaga Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 26 through Stayner Widen CR 92 into Wasaga	Alternative 2 Stayner By-Pass via CR 10 and CR 27/287 SR	Alternative 3 New CR via Flos Rd 4 Improve CR 10
Social/Cultural Environment	Potential impacts to neighbourhoods	Widening of Hwy. 26 through Stayner will impact existing neighbourhood.	Provides some support to Stayner with new By-pass drawing traffic away from congested area.	Provides positive impact to neighbourhoods as providing as alternate route for autos and for trucks.
	Potential impacts to heritage areas	Moderate impact - no heritage areas affected	Minor impact to heritage areas	Significant impact to Upper Marl Creek in Elmvale Clay Plain, Sturgeon River Valley in Tiny, Tay Peninsula, Stayner Swamp/McIntyre Creek and Lower Nottawasaga in Wasaga Lowlands Natural Heritage Units
	Potential impacts to agricultural areas	Minor impact to agricultural lands	Moderate impact to agricultural lands	Significant impact to agricultural lands
Natural Environment	Potential effects on environmentally sensitive areas	Minor impact – no environmentally sensitive areas affected	Moderate impact to environmental sensitive areas	Significant impact to Upper Marl Creek in Elmvale Clay Plain, Sturgeon River Valley in Tiny Tay Peninsula, Stayner Swamp/McIntyre Creek and Lower Nottawasaga in Wasaga Lowlands Natural Heritage Units
	Potential impacts to watercourses	Minor impact	Moderate impact	Significant impact
	Potential impacts to habitat areas	Minor impact to wooded areas	Moderate impact to wooded areas	Significant impact to wooded areas
	Potential impacts on air quality	Significant impact due to increased vehicle emissions in Stayner	Moderate impact due to reduced vehicle emissions in Stayner	Minor impact due do diverted traffic to New County Road

Stayner/Wasaga Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 26 through Stayner Widen CR 92 into Wasaga	Alternative 2 Stayner By-Pass via CR 10 and CR 27/287 SR	Alternative 3 New CR via Flos Rd 4 Improve CR 10
Economic	Cost	May require property to widen Hwy. 26.	Most cost effective option Utilizes exiting roads at CR standards.	Highest construction cost as includes longer distance of road which has to be upgraded and will require improvement to bridge.
	Community Accessibility	Maintains road connection through community and provides good accessibility.	Moderate improvement for community accessibility as it improves traffic operations through main area of Stayner.	Best option to improve community accessibility with provision of new CR linking Springwater with Clearview.
	Support Future Growth Areas	Minimal support for future growth areas as does not provide an alternative route for congested area.	Moderate support for future growth areas as it provides additional road capacity in future growth area.	Good support for future growth areas as it provides alternative link to communities.
	Support Goods Movement	Supports goods movements as widening is along existing goods movement corridor.	Supports goods movement as it will draw traffic away from existing goods movement corridor Hwy 26 improving operations for trucks.	Most supportive of goods movement route as it provides an alternative to CR 92 and Hwy. 26 through a large portion of the County.
OVERALL EVALUATION		THIRD	SECOND	BEST Best overall transportation benefits/performance Minimizes impacts to existing build up areas Provides support for future growth areas, and good support for goods movement

2.4.4. Road Network Alternative Oro-Medonte – Orillia/Ramara

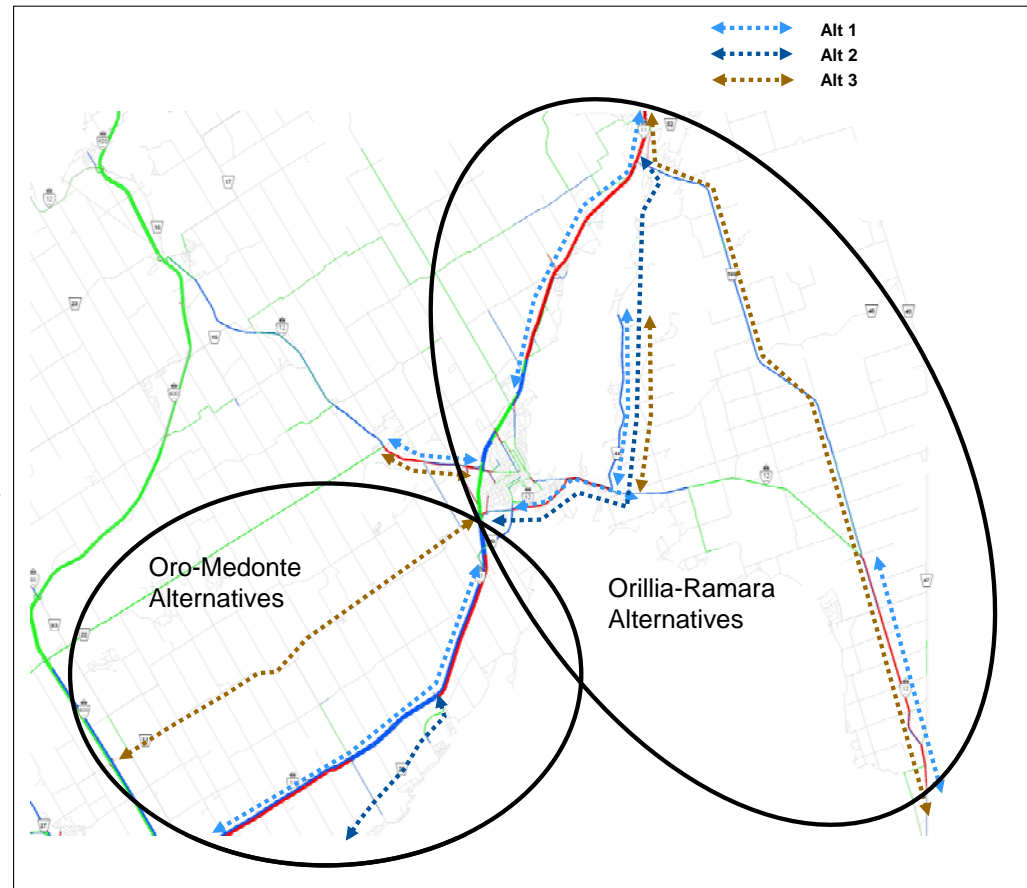
Preferred Alternatives:

Oro-Medonte (Alt 1) – Highway 11 Widening

- Best transportation benefits / performance
- Minimizes impacts to agricultural area, social impacts can be mitigated during design
- Minimizes natural environmental affects
- Best support for planned growth, community access & goods movement

Orillia - Rama (Alt 1) – Widen Highway 11, Hwy 12, and CR 44

- Best overall transportation benefits / performance
- Impacts to agricultural areas and existing development can be mitigated during design
- Provides best support for future growth areas, community access, and goods movement



Orillia - Ramara Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 11 north of Orillia Widen Hwy 12 through Orillia Widen CR 44 to Casino East Side By-Pass Widen Hwy 12 through Brechin	Alternative 2 Widen Hwy 12 through Orillia Widen CR 44 to CR 169	Alternative 3 East Side By-Pass Widen Hwy 12 / CR 169 to 4 lanes Widen CR 44 to Casino
Technical	Support for transit/non-auto modes	Best support for transit and non auto travel as it provides the opportunity to include infrastructure to support other modes of travel to service more areas of the County (Widening may include HOV lanes)	Minimal support for non-auto trips. May have the potential to include infrastructure for other modes of travel while upgrading road, but limited area of influence.	Minimal support for non-auto trips as likely no demand for HOV lanes in area. May have the potential to include infrastructure for other modes of travel while upgrading road, but limited area of influence.
	Connectivity to County/ Provincial roads	No change to existing connectivity to roads as no new connections. However, improved operations along Hwy 11, 12 and CR 44 improves connectivity to more areas than other alternatives.	No change to existing connectivity to roads as no new connections and limited area of influence..	No change to existing connectivity to roads as no new connections. However, improved operations along Hwy, 12 for longer distance trips.
	Network Performance	Addresses congestion along Highway 11 and Highway 12 through Orillia and through Brechin.	Addresses congestion on Hwy 12 in Orillia, but improvements on CR 44 does not provide relief for congestion along Hwy. 11.	Does not address congestion. along Hwy 11 and along Hwy 12 through Orillia.
Social/Cultural Environment	Potential impacts to neighbourhoods	Potential for moderate impacts as widening will impact existing neighbourhoods along Hwy. 11.	Potential for significant impacts as widening will impact existing neighbourhoods in Orillia and along CR 44.	Least impact to neighbourhoods as limited number of settlement areas impacted by widening.
	Potential impacts to heritage areas	Minor impact to Carden Plain: Atherley Narrows	Significant impact to Carden Plain: Atherley Narrows and Lake St. John/Mud Lake	Moderate impact to Carden Plain: Atherley Narrows and Lake St. John/Mud Lake
	Potential impacts to agricultural areas	Significant potential to impact to agricultural lands	Moderate impact to agricultural lands	Minor impact to agricultural lands

Orillia - Ramara Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 11 north of Orillia Widen Hwy 12 through Orillia Widen CR 44 to Casino East Side By-Pass Widen Hwy 12 through Brechin	Alternative 2 Widen Hwy 12 through Orillia Widen CR 44 to CR 169	Alternative 3 East Side By-Pass Widen Hwy 12 / CR 169 to 4 lanes Widen CR 44 to Casino
Natural Environment	Potential effects on environmentally sensitive areas	Minor impact to Matchedash Lake / Severn Corridor Rocklands, Carden Plain Greenland (Brechin / McPhee Bay and Talbot River)	Significant impact to Carden Plain: Atherley Narrows and Lake St. John/Mud Lake	Moderate impact to Carden Plain Greenland (Brechin / McPhee Bay and Talbot River and Lake Dalrymple) and Black River / Head River Rockland
	Potential impacts to watercourses	Moderate impact to Victoria Point and Atherley-Sucker Creek Wetland Complex (Provincial Wetland) and to Lagoon City Provincial Wetland	Significant impact to Victoria Point and Atherley-Sucker Creek Wetland Complex (Provincial Wetland)	Minor impact to Atherley-Sucker Creek Wetland Complex (Provincial Wetland), Lagoon City Provincial Wetland and Mara County Forest Provincial Wetland
	Potential impacts to habitat areas	Minor impact to wooded areas	Significant impact to wooded areas	Moderate impact to wooded areas
	Potential impacts on air quality	Minor impact due to redistributed vehicle emissions	Moderate impact	Significant impact due to increased vehicle emissions
Economic	Cost	High construction costs but potentially less than Alternative 3 as shorter in length.	Minimal cost and smaller area of road widening.	Highest construction cost due to length of improvements..
	Community Accessibility	Significant improvement to community accessibility as road improvements relieve congested areas.	Limited improvement to community accessibility as only some areas of congestion are improved.	Limited area of influence for community accessibility as only one areas of Hwy 12 congestion is improved.
	Support Future Growth Areas	Best support for future growth areas.	Supports future growth in the vicinity of the Casino but does not support growth in other areas.	Minimal support for future growth areas as removed from major development areas.

Orillia - Ramara Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 11 north of Orillia Widen Hwy 12 through Orillia Widen CR 44 to Casino East Side By-Pass Widen Hwy 12 through Brechin	Alternative 2 Widen Hwy 12 through Orillia Widen CR 44 to CR 169	Alternative 3 East Side By-Pass Widen Hwy 12 / CR 169 to 4 lanes Widen CR 44 to Casino
	Support Goods Movement	Best support for Goods movement as operations along existing key corridors are improved.	Does not support Goods movement in the County. Only services a very limited area.	Supports Goods movement only along CR 169.
OVERALL EVALUATION		BEST Best overall transportation benefits / performance Impacts to agricultural areas and existing development can be mitigated during design Provides best support for future growth areas, community access and goods movement	THIRD	SECOND

Oro – Medonte Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 11 to 6 lanes Barrie to Orillia	Alternative 2 Improve Upgrade CR 20	Alternative 3 Improve Upgrade CR 11
Technical	Support for transit/non-auto modes	Best support for transit and non auto travel as it provides the opportunity to include infrastructure to support other modes of travel – widening may include HOV lanes which supports carpooling and intercity transit.	Minimal support for non-auto trips. May have the potential to include infrastructure for other modes of travel while upgrading road (cycling facilities)	Minimal support for non-auto trips. May have the potential to include infrastructure for other modes of travel while upgrading road.
	Connectivity to County/Provincial roads	No change to existing connectivity to roads as no new connections.	No change to existing connectivity to roads as no new connections.	No change to existing connectivity to roads as no new connections.
	Network Performance	Addresses capacity deficiencies	Does not address capacity deficiency on Hwy 11	Does not address capacity deficiency on Hwy 11
Social/Cultural Environment	Potential impacts to neighbourhoods	Some impacts to existing developments immediately fronting Hwy. 11.	Increase traffic on CR 20 has the potential to have some impacts to neighbourhoods south of CR 20.	Minimal impact on existing neighbourhoods with upgrades to CR 11.
	Potential impacts to heritage areas	May affect some Natural Heritage Units: Willow Creek Valley, Hawkestone Creek Valley and Bluffs Creek Valley	May affect the Northwest Lake Simcoe Natural Heritage Unit	May affect some Natural Heritage Units: Bass Lake, Hawkestone Creek Valley and Bluffs Creek Valley
	Potential impacts to agricultural areas	Minor impact to agricultural lands	Significant impact to agricultural lands	Moderate impact to agricultural lands
Natural Environment	Potential effects on environmentally sensitive areas	May significantly affect some greenlands (Oro Moraine) and Provincial wetlands (Dalston)	Minor impact on the Northwest Lake Simcoe	Moderate impact on Copeland Forest, Bass Lake and Bluffs Creek Valley
	Potential impacts to watercourses	May affect Bluffs Creek West Wetland	Minor impact on watercourses	Significant impact on watercourses and Hawkestone Wetland Complex

Oro – Medonte Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 11 to 6 lanes Barrie to Orillia	Alternative 2 Improve Upgrade CR 20	Alternative 3 Improve Upgrade CR 11
	Potential impacts to habitat areas	Minor impact on wooded areas	Moderate impact on wooded areas	Significant impact on wooded areas
	Potential impacts on air quality	Minor impact due to vehicle emissions	Significant impact due to vehicle emissions	Moderate impact due to vehicle emissions
Economic	Cost	Highest construction cost.	Moderate construction costs to upgrade CR 20.	Moderate construction costs to upgrade CR 11.
	Community Accessibility	Improving flow of traffic along Hwy. 11 will provide the most benefit for improving community accessibility.	Minimal improvement to community accessibility as road has limited service area.	Alternative will provide some improvement to community accessibility as it will service a number of communities between Orillia and Hwy. 400
	Support Future Growth Areas	Best support for Future growth areas as it address capacity issues on Highway 11 related to future growth.	Supports growth as it would provide alternate route parallel to Hwy 11 which is expected to be at capacity.	Minimal supports for future growth but does not adequately address capacity issues along Hwy 11 resulting from planned growth.
	Support Goods Movement	Best support for Goods Movement as improvements are made to key Goods movement corridor.	Minimal support for Goods movement as CR 20 not recognized as a goods movement corridor.	Moderate support for Goods movement as improvements help facilitate CR function.

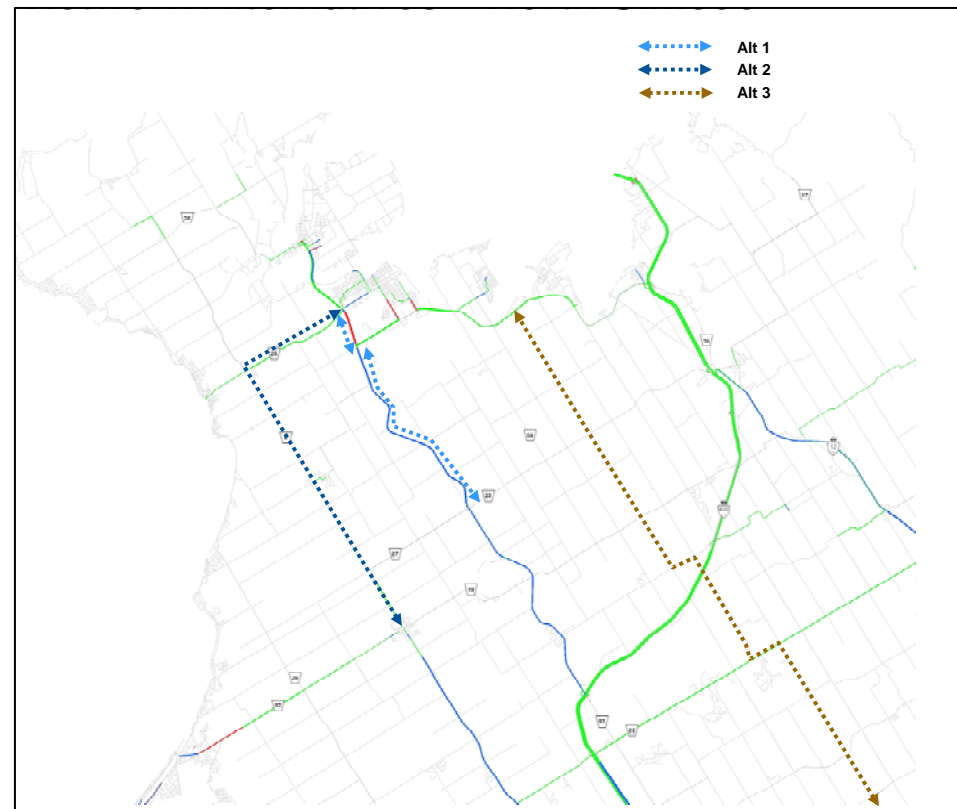
Oro – Medonte Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy 11 to 6 lanes Barrie to Orillia	Alternative 2 Improve Upgrade CR 20	Alternative 3 Improve Upgrade CR 11
OVERALL EVALUATION		BEST <ul style="list-style-type: none"> • Best transportation benefits / performance • Minimizes impact to agricultural area, social impacts can be mitigated during design • Minimizes natural environmental affects • Best support for planned growth, community access and goods movement 	THIRD	SECOND

2.4.5. Road Network Alternative North Simcoe

Preferred Alternatives:

North Simcoe (Alt 3) – New N-S County Road via
5th Line, 6th Line, 7th Line

- Best overall transportation benefits / performance
- Improves connectivity of County Road system in area
- Minimizes social / cultural impacts
- Modest potential for impacts to natural environmental areas, can be mitigated during design
- Supports future growth around airport, supports goods movement,



North Simcoe Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy. 93, Improve CR 93	Alternative 2 Improve CR 6 & CR 25	Alternative 3 New N-S CR via 5 th /6 th /7 th Line Hwy . 12 to Hwy 11
Technical	Support for transit/non-auto modes	Limited ability to provide support for non-auto modes.	Limited ability to provide support for non-auto modes	Provides support for non-auto modes as provides an alternate route to the area and provides connection to and across Hwy. 400.
	Connectivity to County/ Provincial roads	Limited ability to provide connectivity as only services short section of road.	Improves connectivity using existing County and Provincial roads.	Provides new CR through Tay and Oro-Medonte in N-S direction. Improved connectivity between County Roads and Highways.
	Network Performance	Widening address capacity deficiency on Hwy 93.	Provides minimal relief to Hwy 93 – deficiency remains.	Provides modest relief to Hwy 93 capacity deficiency.
Social/Cultural Environment	Potential impacts to neighbourhoods	Some improvement through small area of Midland.	Widening of CR 6 will have impacts to settlement areas.	Improves connections for neighbourhoods (Port McNicoll, Victoria Harbour and Waubaushene.) Potential to reduce traffic impacts to communities along Hwy. 93.
	Potential impacts to heritage areas	Modest potential through settlement areas.	Modest potential through settlement areas.	Improves access to St Louis Mission Historic Site.
	Potential impacts to agricultural areas	Higher impacts due to widening requiring additional Right-of-way.	Higher impacts due to proximity to ex farmland.	Minimal impacts.
Natural Environment	Potential effects on environmentally sensitive areas	Highest potential due to proximity to Wye Marsh and Wye River crossings.	Minimal potential for impacts.	Modest potential for impacts in Sturgeon River area.
	Potential impacts to watercourses	Highest potential due to proximity to Wye Marsh and Wye River crossings.	Modest potential for impacts due to Wye River crossings..	Modest potential for impacts in Sturgeon River area.

North Simcoe Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy. 93, Improve CR 93	Alternative 2 Improve CR 6 & CR 25	Alternative 3 New N-S CR via 5 th /6 th /7 th Line Hwy . 12 to Hwy 11
	Potential impacts to habitat areas	Modest potential for impacts due to proximity to Wye Marsh and Wye River crossings.	Minimal potential for impacts.	Highest potential for impacts due to rural wilderness nature of area.
	Potential impacts on air quality	Alternative address capacity issues related to CR 93, reducing delays and emissions.	May provide some relief to local emissions and help reduce capacity issues on CR 93.	Introduces new traffic to largely rural roads. Modest potential for local impacts.
Economic	Cost	Moderate costs to undertake improvements.	Moderate costs to undertake improvements.	Highest cost to upgrade 5 th Line and 6 th Line to CR standards but uses existing road structure on 7 th Line.
	Community Accessibility	May provide slight improvement to community accessibility compared to Alternative 2 as closer to settlement area.	Minimal improvements to community accessibility with improvements proposed.	Improves accessibility to communities with upgrading Township roads to County Roads and providing alternate access to Highway 400.
	Support Future Growth Areas	Some ability to support future growth areas in Midland with improvements to Hwy 93.	Minimal ability to support future growth areas	Best alternative in supporting future growth areas as improvement connection to adjacent facilities and supports industrial growth around Simcoe airport.
	Support Goods Movement	Good support for Goods movement with improvements to Hwy. 93 to facilitate travel between Hwy. 400 and industrial areas in Midland and Penetanguishene.	Provides limited support for Goods movements as a result of limited area improvements serve.	Best support for Goods movement as creates another route to access industrial areas in North Simcoe Area. To areas of Midland/Penetangishene, Line 5 and 6 provides more effective route than CR6. 7 th Line provides access to aggregate resource areas, Simcoe Airport node, and potential industrial development area around airport.

North Simcoe Area Alternatives				
Evaluation Criteria	Indicators	Alternative 1 Widen Hwy. 93, Improve CR 93	Alternative 2 Improve CR 6 & CR 25	Alternative 3 New N-S CR via 5 th /6 th /7 th Line Hwy . 12 to Hwy 11
OVERALL EVALUATION		SECOND	THIRD	BEST Best overall transportation benefits / performance Improves connectivity of County Road system in area Minimizes social / cultural impacts Modest potential for impacts to natural environmental areas, can be mitigated during design Supports future growth around airport, supports goods movement, and utilizes existing road infrastructure to minimize costs

2.5. Proposed Road Network Improvements – Short Term



Figure 2.3 - Proposed Road Network Improvements – Short Term

2.6. Proposed Road Network Improvements – Medium Term



Figure 2.4 - Proposed Road Network Improvements – Medium Term

2.7. Proposed Road Network Improvements – Long Term

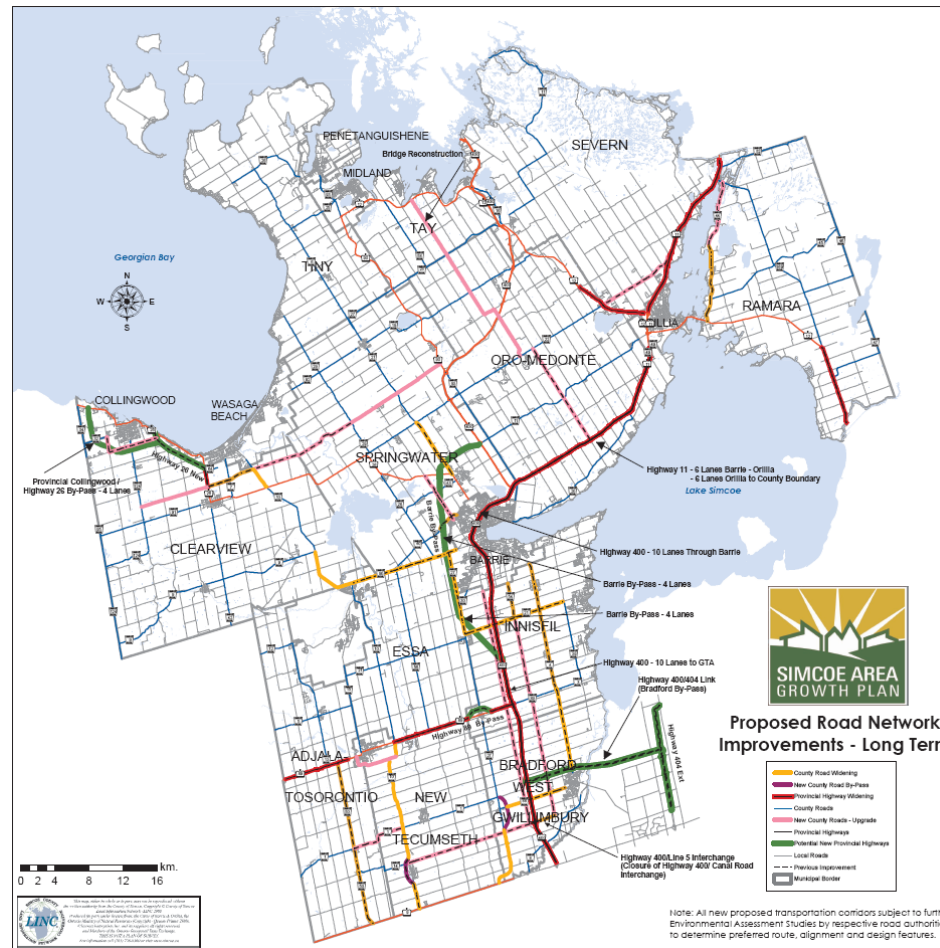


Figure 2.5 - Proposed Road Network Improvements – Long Term

3. SENSITIVITY ASSESSMENT – RECOMMENDED IMPROVEMENTS WITHOUT FULL DEVELOPMENT OF HIGHWAY 400 AND BARRIE BY-PASS

The Road Network Improvement plan for the County of Simcoe is developed on the assumptions that Highway 400 from Highway 9 to north of the City of Barrie will be widened to include 10 lanes. As well, the construction of a 4 lane controlled access highway around the City of Barrie is included in the Road Network Improvement plan to facilitate traffic movements around the congested area through the City of Barrie. The timing of improvements is under the control of MTO and will be based on the implementation and funding priorities of the Province. These improvements are key in the development of the County's plan as they will carry a significant amount of the future traffic traveling through the area. If they are not constructed to the extent assumed in the analysis, there will be significant spillover of traffic to adjacent County Roads.

A sensitivity analysis was undertaken to assess the extent of the impact to the County Roads with only 8 lanes on Highway 400 between Highway 9 and Highway 400/Highway 11 interchange and no Barrie By-pass. With the other recommended road network improvement projects identified in the Transportation Master Plan in place and based on an assessment of summer weekday traffic generated by future 2031 population and employment projections, additional improvements will be required on to the County Road system. **Figure 3.1** illustrates the deficiencies expected on the County of Simcoe road network with only Highway 400 widened to eight (8) lanes between Highway 9 and Highway 400/11 interchange and without the construction of a By-pass around Barrie.

With only eight (8) lanes on Highway 400 between Highway 9 and Highway 400/11 interchange and without the By-pass around Barrie, there will be significant "spillover" of traffic onto the County Road system as Highway 400 becomes congested. Even with the County Road system upgraded to include the recommended road network improvements, a number of the County Roads will be reach capacity. County Road 4, 10th Sideroad (future County Road), County Road 27 between County Road 1 and County Road 30, County Road 56, County Road 50, County Road 42 and the remaining sections of County Road 10 between Highway 9 and Wasaga Beach are expected to become congested. Road improvements that may be required to the County Road system to address congestion if the Provincial facilities are not as identified in the Transportation Master Plan are outlined in **Table 3-1**.

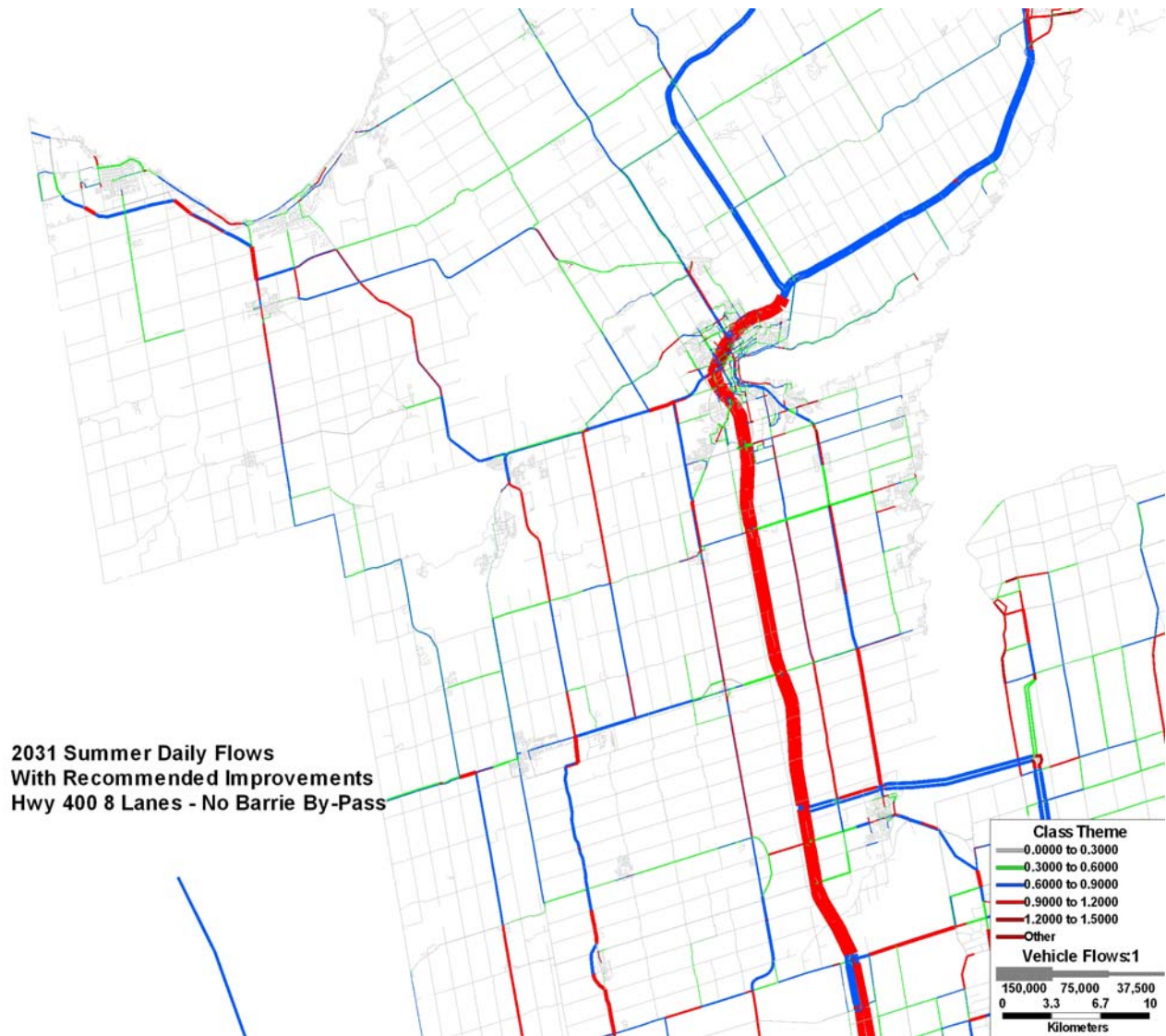


Figure 3.1 - 2031 Future Roadway Deficiencies with Highway 400 at 8 lanes and no Barrie By-Pass

Table 3-1 Additional Road Improvement

Road	Location	Type of Improvement
10th Sideroad - future CR	Line 8 Bradford West Gwillimbury to CR 21	Widening 2 to 4 lanes
CR 27	CR 1 to CR 21	Widening 2 to 4 lanes
CR 27	CR 21 to CR 30	Widening 4 to 6 lanes
CR 10 - Tottenham	Hwy 9 to 7th Line (includes by-pass)	Widening 4 to 6 lanes
CR 10 north of Alliston	Industrial Pkwy to Hwy 89	Widening 4 to 6 lanes
CR 10 north of Alliston	Hwy 89 to 5th Sideroad	Widening 2 to 4 lanes

Road	Location	Type of Improvement
CR 10 south of Angus	CR 21 to Cambrai Rd	Widening 2 to 4 lanes
CR 10 north of Angus	CR 9 to Flos Rd 4	Widening 2 to 4 lanes
CR 42 Stayner	CR 9 to Margaret St	Widening 2 to 4 lanes
CR 50	Hwy 9 to CR 1	Widening 2 to 4 lanes
CR 90	CR 28 to CR 27	Widening 4 to 6 lanes
CR 88	Hwy 400 to Mulock Dr - Bond Head	Widening 4 to 6 lanes

These road improvements identified in Table 3-1 would be in addition to the recommended road improvements required to accommodate future 2031 population and employment projections for Simcoe County.