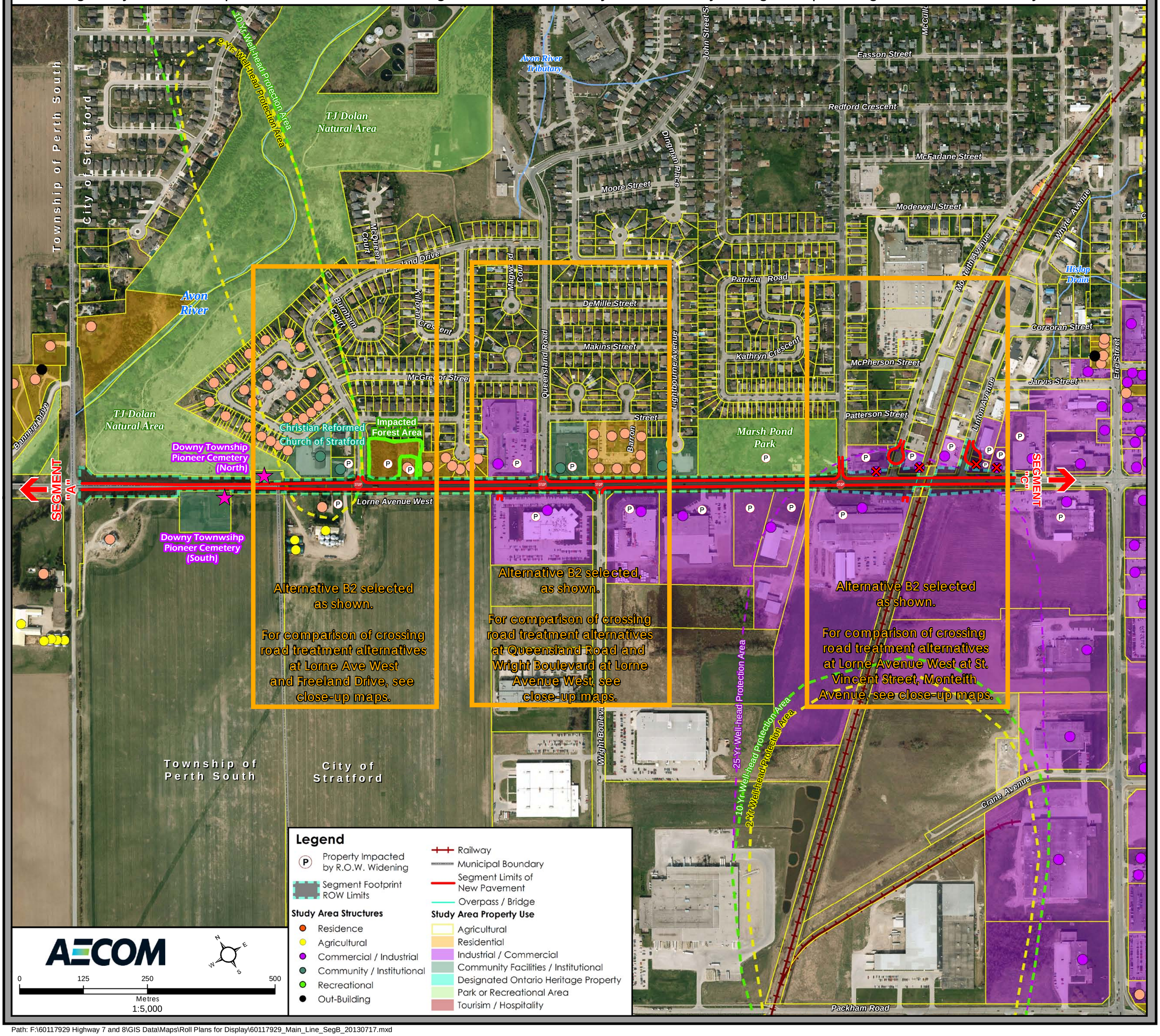
APPENDIX B

Segment B: West Limit of Stratford to West of Erie Street

Environmental Considerations Mapping: Preliminary Design Map for Recommended Plan and Close-up Maps of Crossing Road Intersection Treatment Alternatives

Preliminary Design Alternatives Assessment and Evaluation Table

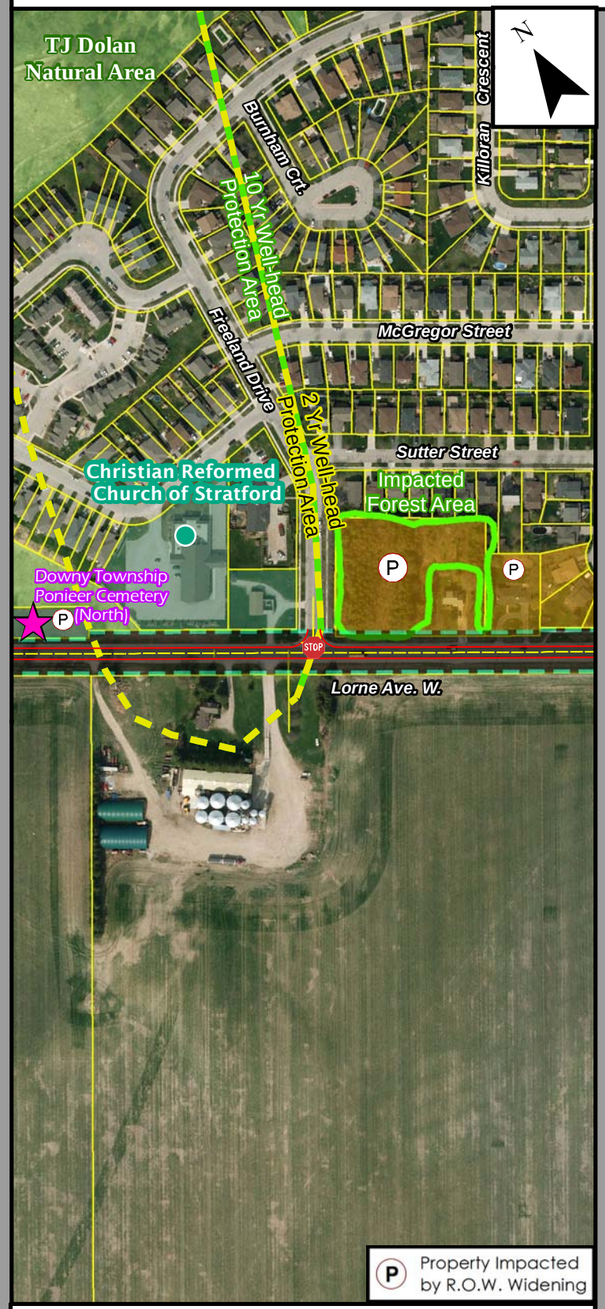
Highway 7 & 8 Transportation Corridor Planning and Class EA Study - Preliminary Design Map of Segment B - Draft - July, 2013



Path: F:\60117929 Highway 7 and 8\GIS Data\Maps\Roll Plans for Display\60117929_Main_Line_SegB_20130717.mxd

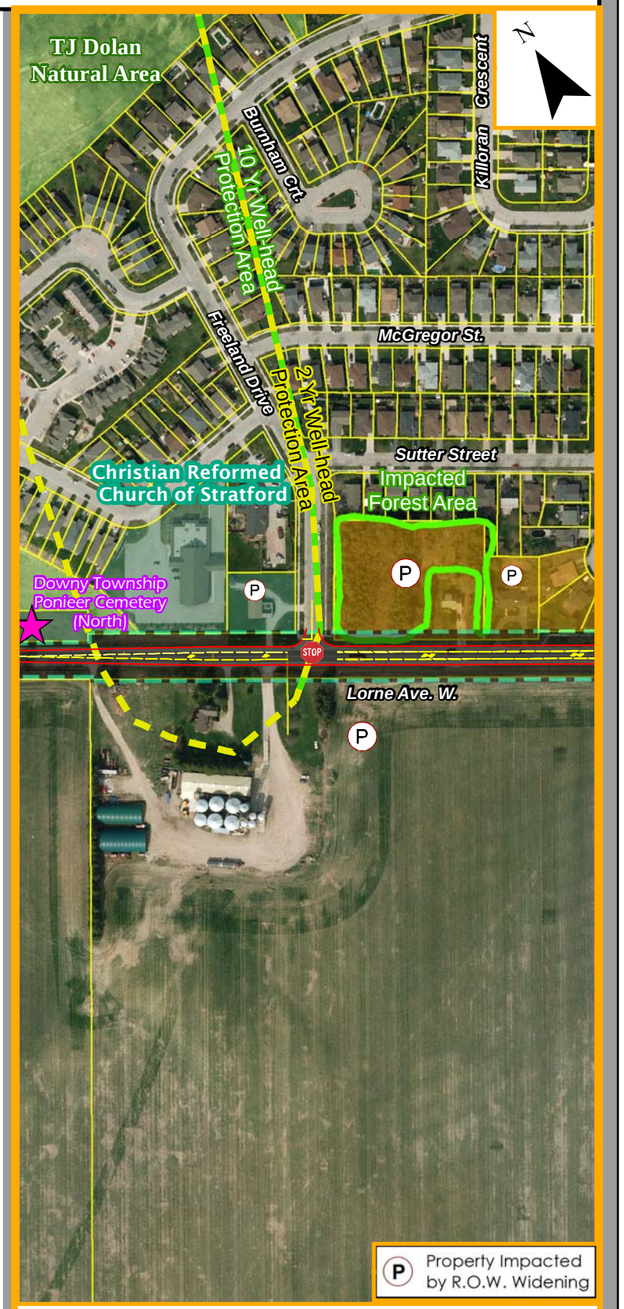
Highway 7 & 8 Corridor Planning and Class EA Study - Preliminary Design
Close-up Map of Crossing Road Intersection Treatment Alternatives for Segment B - 1 of 2 (July, 2013)

Lorne Avenue West at Freeland Drive



Selected Alternative B1 - Unsignalized with stop signs

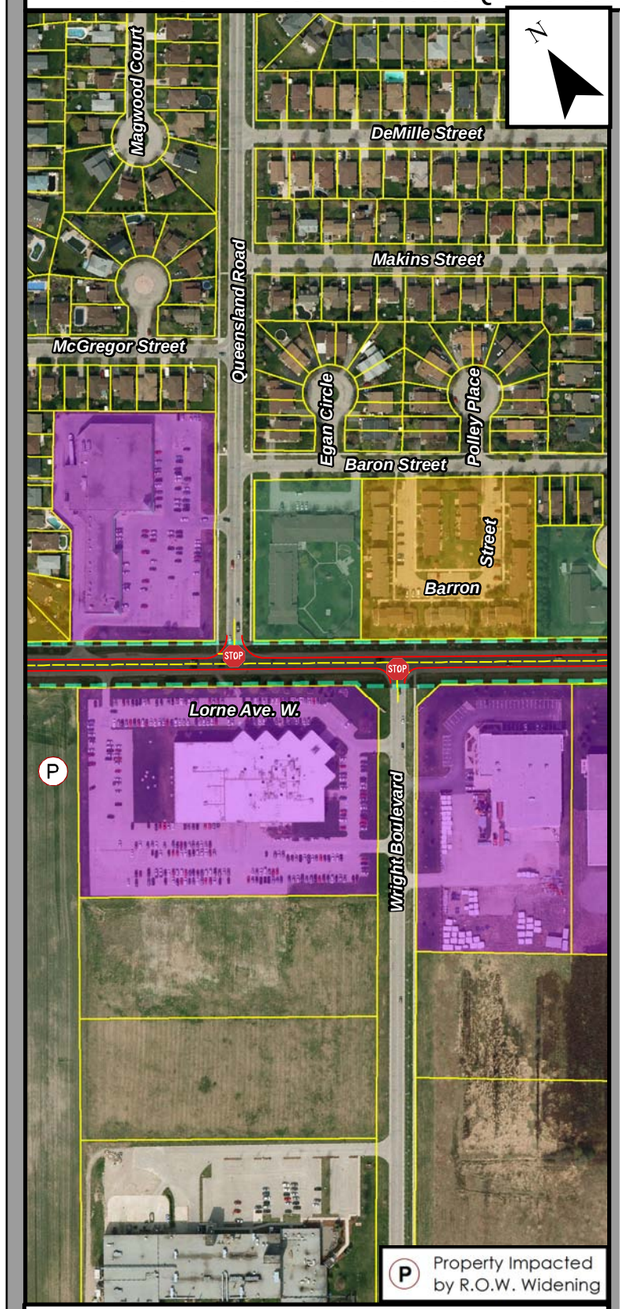
0 50 100 200 300 Metres



Selected Alternative B2
Unsignalized with stop signs with continuous left turn lane

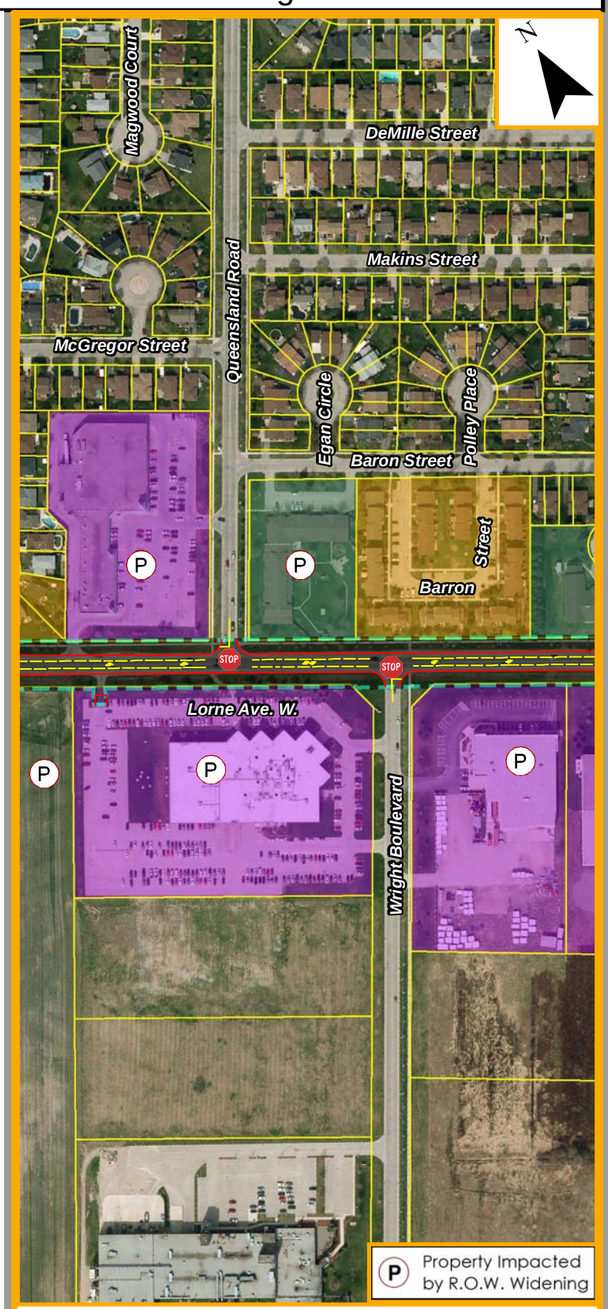
0 50 100 200 300 Metres

Lorne Avenue West at Queensland Road and Wright Boulevard



Alternative B1 - Unsignalized with stop signs

0 50 100 200 300 Metres



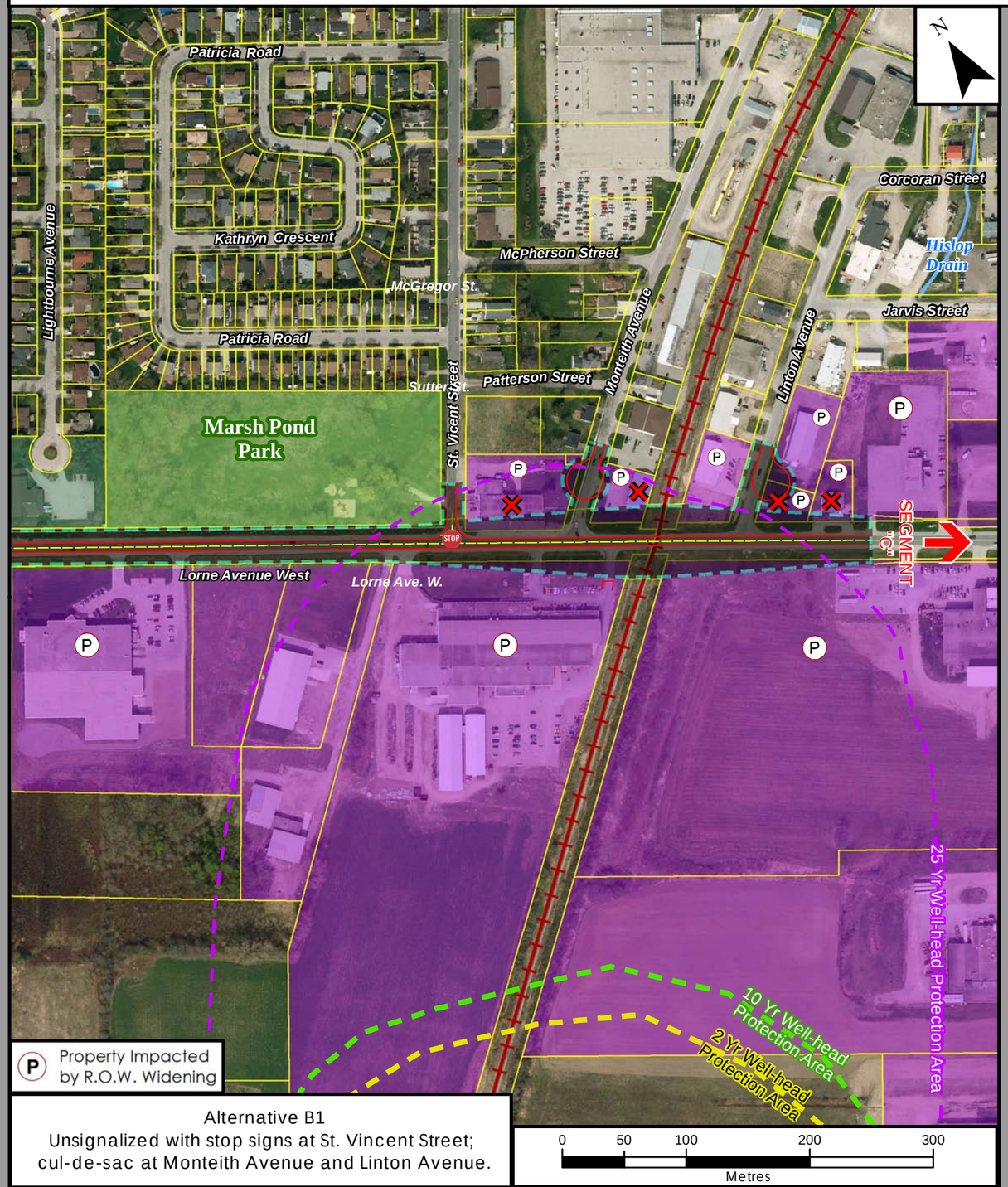
Selected Alternative B2
Unsignalized with Stop Signs with continuous left turn lane

0 50 100 200 300 Metres

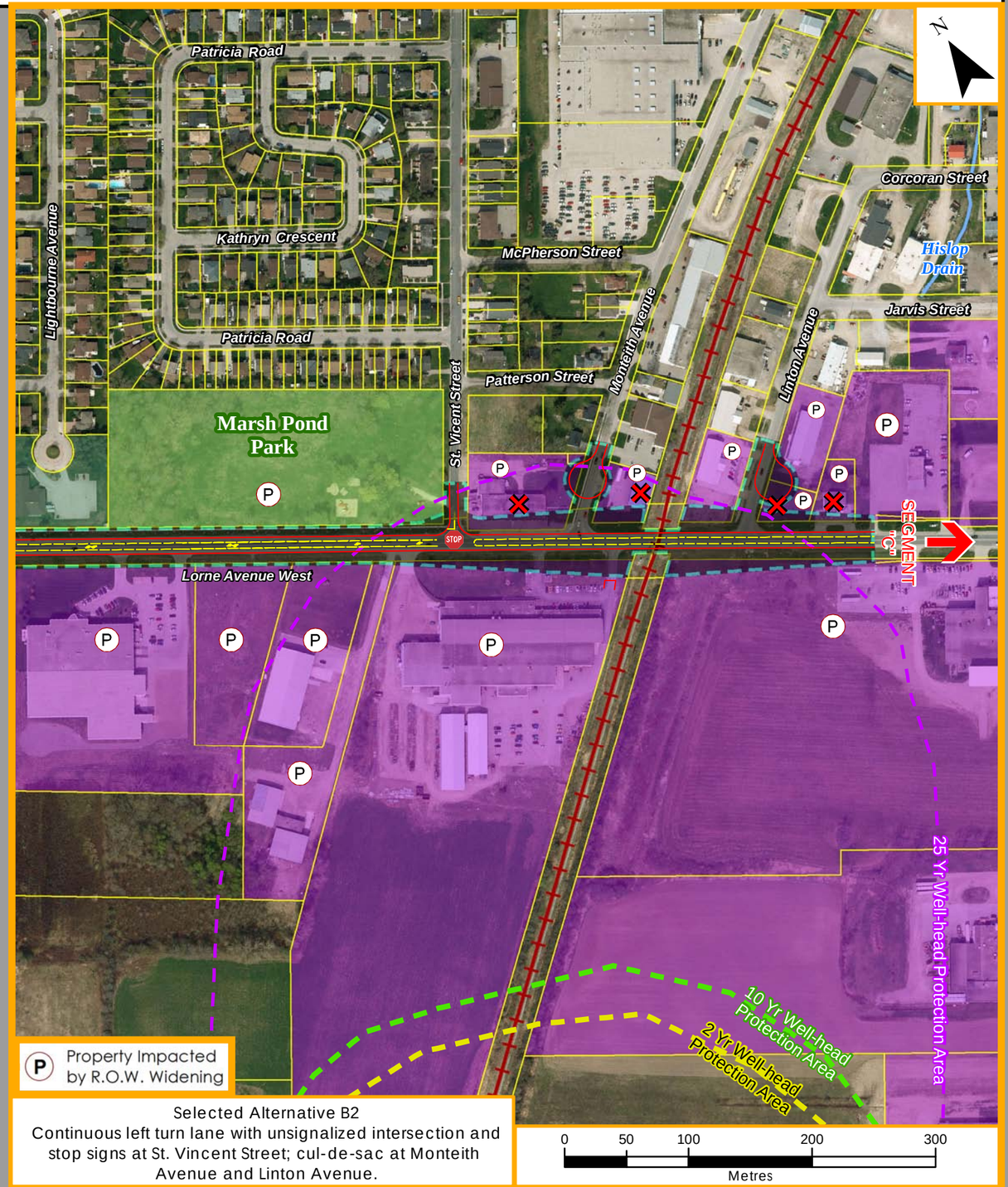
Path: F:\60117929 Highway 7 and 8\GIS Data\Maps\Road Treatments\60117929_SegB_Intersection_Group_Map_1_20130409.mxd

Highway 7 & 8 Corridor Planning and Class EA Study - Preliminary Design
Close-up Map of Connecting Road Intersection Treatment Alternatives for Segment B - 2 of 2 (July, 2013)

Lorne Avenue West at St. Vincent Street, Monteith Avenue, and Linton Avenue.



Alternative B1
Unsignalized with stop signs at St. Vincent Street; cul-de-sac at Monteith Avenue and Linton Avenue.



Selected Alternative B2
Continuous left turn lane with unsignalized intersection and stop signs at St. Vincent Street; cul-de-sac at Monteith Avenue and Linton Avenue.

Path: F:\60117929 Highway 7 and 8\GIS Data\Maps\Road Treatments\60117929_SegB_Intersection_Group_Map_2_20130409.mxd

Highway 7&8 Transportation Corridor Planning and Class EA Study

EVALUATION OF PRELIMINARY DESIGN ALTERNATIVES

Note: The evaluation is based on a qualitative assessment of each alternative (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.

SEGMENT B – West Limit of Stratford to West of Erie Street

Segment B Alternatives		**Alternative B1**	**Alternative B2 - Recommended**
Cross Section		2-lanes	2-lanes with continuous centre left turn lane
Crossing Road Treatments		Freeland Drive – Unsignalized Queensland Road – Unsignalized Wright Boulevard – Unsignalized St. Vincent Street – Unsignalized Monteith Avenue – Cul-de-sac Linton Avenue – Cul-de-sac	Freeland Drive – Unsignalized Queensland Road – Unsignalized Wright Boulevard – Unsignalized St. Vincent Street – Unsignalized Monteith Avenue – Cul-de-sac Linton Avenue – Cul-de-sac
Factor / Sub-Factor	**Criteria**		
1. Natural Environmental Factors			
1.1 Fisheries and Aquatic Ecosystems	1.1.1 Fish Habitat	**Low** potential to affect fish and fish habitat • No watercourse crossings	**Low** potential to affect fish and fish habitat • No watercourse crossings
	1.1.2 Fish Community		
1.2 Terrestrial Ecosystems	1.2.1 Wildlife	**Low** potential to affect wildlife and their habitat • 1 species of special concern (MNR Special Concern) in close proximity / within the alternative • 98 breeding bird species in the study area • Area sensitive bird species recorded in close proximity / within the alternative • MNR area sensitive bird species in close proximity / within the alternative	**Low** potential to affect wildlife and their habitat • 1 species of special concern (MNR S-Rank 3) in close proximity / within the alternative • 98 breeding bird species in the study area • Area sensitive bird species recorded in close proximity / within the alternative • MNR area sensitive bird species in close proximity / within the alternative
	1.2.2 Wetlands	**No** potential to affect wetlands • No wetlands impacted	**No** potential to affect wetlands • No wetlands impacted
	1.2.3 Forests (e.g. woodlands [forest stands, woodlots and interior forest habitat] and significant valley lands [valley and stream corridors])	**Low** potential to affect forested areas • 1 forested area impacted - 1 impact displacing approximately 0.2 hectares fringe area	**Low** potential to affect forested areas • 1 forested area impacted - 1 impact displacing approximately 0.2 hectares fringe area
	1.2.4 Vegetation Species At Risk	**Low** potential to affect vegetation • 1 vegetation SAR (Harbinger of Spring, S-Rank 3) in close proximity	**Low** potential to affect vegetation • 1 vegetation SAR (Harbinger of Spring, S-Rank 3) in close proximity
	1.2.5 Designated/Special Areas (such as world biosphere reserves, heritage rivers, ESAs, ESPAs, ANSIs, environmental plan areas, conservation reserves; and the designated special areas of national parks, provincial parks, conservation areas, etc)	**No** potential to affect designated special areas • No designated areas impacted	**No** potential to affect designated special areas • No designated areas impacted
1.3 Groundwater	1.3.1 Areas of Groundwater Recharge and Discharge 1.3.2 Groundwater Source Areas and Wellhead Protection Areas	**High** potential to affect areas of groundwater recharge / discharge areas • 2 recharge areas / wellhead protection areas impacted - Stratford Municipal Well – 50 day capture zone, 0.62 hectares displaced - Stratford Municipal Well – 25 year capture zone, 1.67 hectares displaced • No discharge areas • No temporary or long term change to groundwater recharge / discharge areas • Some surface runoff is expected to exceed infiltration for the majority of the route given the relatively impermeable nature of the surrounding soils	**High** potential to affect areas of groundwater recharge / discharge areas • 2 recharge areas impacted - Stratford Municipal Well – 50 day capture zone, 0.7 hectares displaced - Stratford Municipal Well – 25 year capture zone, 1.73 hectares displaced • No discharge areas • No temporary or long term change to groundwater recharge / discharge areas • Some surface runoff is expected to exceed infiltration for the majority of the route given the relatively impermeable nature of the surrounding soils
	1.3.3 Large Volume Wells	**Low** potential to affect large volume wells • No large volume wells impacted	**Low** potential to affect groundwater source or wellhead protection areas • 1 wellhead protection area impacted (Stratford Municipal Well) • No large volume wells impacted

Highway 7&8 Transportation Corridor Planning and Class EA Study EVALUATION OF PRELIMINARY DESIGN ALTERNATIVES Note: The evaluation is based on a qualitative assessment of each alternative (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.			
SEGMENT B – West Limit of Stratford to West of Erie Street			
Segment B Alternatives		**Alternative B1**	**Alternative B2 - Recommended**
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Crossing Road Treatments		Freeland Drive – Unsignalized Queensland Road – Unsignalized Wright Boulevard – Unsignalized St. Vincent Street – Unsignalized Monteith Avenue – Cul-de-sac Linton Avenue – Cul-de-sac	Freeland Drive – Unsignalized Queensland Road – Unsignalized Wright Boulevard – Unsignalized St. Vincent Street – Unsignalized Monteith Avenue – Cul-de-sac Linton Avenue – Cul-de-sac
Factor / Sub-Factor	**Criteria**		
	1.3.4 Private Wells	**Moderate** potential to affect private well use • No private wells displaced • 2 shallow dug wells in close proximity (<150 m) - Sensitive to surface contamination; potential short and long term impacts • No deep bedrock aquifer wells in close proximity (<150 m)	**Moderate** potential to affect private well use • No private wells displaced • 2 shallow dug wells in close proximity (<150 m) - Sensitive to surface contamination; potential short and long term impacts • No deep bedrock aquifer wells in close proximity (<150 m)
	1.3.5 Groundwater-Sensitive Ecosystems (e.g. groundwater fed wetlands, coldwater streams)	**Low** potential to affect groundwater sensitive ecosystems • No groundwater sensitive ecosystems impacted • Low potential for short and long term change to groundwater quantity / quality - Potential for long-term effects to groundwater quality due to increased road salt use and road run-off. - Potential for temporary effects to groundwater quantity if construction dewatering is required.	**Low** potential to affect groundwater sensitive ecosystems • No groundwater sensitive ecosystems impacted • Low potential for short and long term change to groundwater quantity / quality - Potential for long-term effects to groundwater quality due to increased road salt use and road run-off. - Potential for temporary effects to groundwater quantity if construction dewatering is required.
1.4 Surface Water	1.4.1 Watershed / Sub-Watershed Drainage Features/Patterns	**Low** potential to affect drainage features / patterns and surface water quality / quantity • No watercourse crossings or watershed features impacted	**Low** potential to affect drainage features / patterns and surface water quality / quantity • No watercourse crossings or watershed features impacted
	1.4.2 Surface Water Quality and Quantity		
NATURAL ENVIRONMENT SUMMARY		**For all alternatives, potential impacts to features of the natural environment are comparable with no discernible differences.**	
2. Land Use / Socio-Economic Environmental Factors			
2.1 Land Use Planning Policies, Goals, Objectives	2.1.1 First Nations Land Claims	**No** potential to affect First Nations Land Claims • No First Nations Land Claims impacted - 5 First Nations Land Claims filed in the study area	**No** potential to affect First Nations Land Claims • No First Nations Land Claims impacted - 5 First Nations Land Claims filed in the study area
	2.1.2 Provincial/Federal land use planning policies/goals/objectives	*Previously addressed through the detailed planning phase.*	
	2.1.3 Municipal (regional and local) land use planning policies/ goals/objectives (Official Plans)	*Previously addressed through the detailed planning phase.*	
	2.1.4 Development Objectives of Private Property Owners	*Previously addressed through the detailed planning phase.*	
2.2 Land Use / Community	2.2.1 First Nation Reserves	**No** potential to affect First Nations Reserves • No First Nations Reserves in the study area	**No** potential to affect First Nations Reserves • No First Nations Reserves in the study area
	2.2.2 First Nations' Sacred Grounds	**Low** potential to affect First Nations Sacred Grounds • No known First Nations Sacred Grounds in the study area	**Low** potential to affect First Nations Sacred Grounds • No known First Nations Sacred Grounds in the study area

Highway 7&8 Transportation Corridor Planning and Class EA Study EVALUATION OF PRELIMINARY DESIGN ALTERNATIVES Note: The evaluation is based on a qualitative assessment of each alternative (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.			
SEGMENT B – West Limit of Stratford to West of Erie Street			
Segment B Alternatives		**Alternative B1**	**Alternative B2 - Recommended**
Cross Section		2-lanes	2-lanes with continuous centre left turn lane
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Factor / Sub-Factor	**Criteria**		
	2.2.3 Urban and Rural Residential	**Low** potential for impacts to urban and rural residential areas • 1 residential property impacted - 1 residential property loses frontage - No homes are displaced for these residential properties - No residential property completely displaced - No residential property severed • Low impact on character and use of residential property because change is limited to a few individual rural residential properties • Moderate interference with residential community cohesion since the alternative does not pass directly through built up residential areas, additional traffic and conversion of existing roads will result in increased traffic conflicts and disruption for residential area to the north	**Low** potential for impacts to urban and rural residential areas • 2 residential properties impacted - 2 residential properties lose frontage - No homes are displaced for these residential properties - No residential property completely displaced - No residential property severed • Low impact on character and use of residential property because change is limited to a few individual residential properties • Low interference with residential community cohesion since the alternative does not pass through built up residential areas and access / travel, to and along highway is improved for local users with introduction left turn lanes
	2.2.4 Commercial/Industrial	**Moderate** potential for impacts to commercial and industrial areas • 13 commercial / industrial properties impacted - 9 commercial / industrial properties lose frontage - 4 commercial properties are displaced with commercial / industrial building displaced on 3 • Low impact on character and use of commercial / industrial areas • Moderate interference with commercial / industrial community cohesion as the alternative passes directly through commercial / industrial area and additional traffic and conversion of existing roads will result in increased traffic conflicts and disruption for commercial / industrial users	**Moderate** potential for impacts to commercial and industrial areas • 15 commercial / industrial properties impacted - 11 commercial / industrial properties lose frontage - 4 commercial properties are displaced with commercial / industrial building displaced on 3 • Low impact on character and use of commercial / industrial areas • Low interference with commercial / industrial community cohesion as the alternative passes directly through commercial / industrial area and access / travel, to and along highway is improved for commercial / industrial users with introduction left turn lanes
	2.2.5 Tourist Areas and Attractions (e.g. museums, theatres, etc.)	**No** potential for impacts to tourist areas and attractions • No tourist areas / attractions impacted • No impacts on use, character and cohesion of tourist areas / attractions	**No** potential for impacts to tourist areas and attractions • No tourist areas / attractions impacted • No impacts on use, character and cohesion of tourist areas / attractions
	2.2.6 Community Facilities / Institutions (e.g. hospitals, schools, places of worship, community features, municipal parks, public spaces, golf courses, trails, greenways and open space linkages)	**Low** potential for impacts to community facilities and institutions • 1 community facility / institution impacted (loses frontage) - Marsh Pond Park • Low impact on character and use of community facilities / institutions • Moderate interference with community facilities / institutions community cohesion as the alternative passes through a dense area where a number of community facilities are located. The additional traffic and conversion of existing roads will result in increased traffic conflicts and disruption to access points and travel to these community facilities / institutions	**Moderate** potential for impacts to community facilities and institutions • 3 community facilities / institutions impacted (lose frontage) - Christian Reformed Church of Stratford - Optimism Place (women's shelter) - Marsh Pond Park • Low impact on character and use of community facilities / institutions • Low interference with community facilities / institutions community cohesion as the alternative passes through a dense area where a number of community facilities are located. Access / travel, to these facilities and along highway is improved for users of community facilities / institutions with introduction left turn lanes
	2.2.7 Municipal Infrastructure and Public Service Facilities (e.g. sewage and water services, police/emergency services, local utilities)	**No** potential to affect Municipal Infrastructure and Public Service Facilities • No municipal infrastructure / public service facilities impacted	**No** potential to affect Municipal Infrastructure and Public Service Facilities • No municipal infrastructure / public service facilities impacted

Highway 7&8 Transportation Corridor Planning and Class EA Study EVALUATION OF PRELIMINARY DESIGN ALTERNATIVES Note: The evaluation is based on a qualitative assessment of each alternative (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.			
SEGMENT B – West Limit of Stratford to West of Erie Street			
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Factor / Sub-Factor	**Criteria**		
	2.2.8 Downtown Historic Crossroads Function	**No** potential to affect Downtown or Historic Crossroads • No historic downtown cross roads in this segment	**No** potential to affect Downtown or Historic Crossroads • No historic downtown cross roads in this segment
	2.2.9 Out of Way Travel for Access to / from local land uses	**Moderate** potential to affect Out of Way Travel • 2 crossing roads where crossing road treatment introduces out-of-way travel - Cul-de-sac proposed at Monteith Avenue - Cul-de-sac proposed at Linton Avenue	**Moderate** potential to affect Out of Way Travel • 2 crossing roads where crossing road treatment introduces out-of-way travel - Cul-de-sac proposed at Monteith Avenue - Cul-de-sac proposed at Linton Avenue
2.3 Noise Sensitive Areas (NSAs) (residential areas and sensitive institutional uses)	2.3.1 Highway Noise	**Low** potential for highway noise impacts. • Noise levels are predicted to increase based on additional traffic volumes using the corridor. • Design alternatives presented result in no discernible differences in noise levels for receptors adjacent to or in close proximity to the corridor.	**Low** potential for highway noise impacts. • Noise levels are predicted to increase based on additional traffic volumes using the corridor. • Design alternatives presented result in no discernible differences in noise levels for receptors adjacent to or in close proximity to the corridor.
	2.3.2 Construction Noise	**Moderate** potential for construction noise impacts • For all alternatives, construction activities will vary temporally and spatially as the project progresses. • Noise levels from construction at a given receptor location will also vary over time as different activities take place, and as those activities change location. • At this time, detailed construction plans are not available. Construction noise mitigation in the form of a construction Code of Practice will be written into the contract documentation for the contractor.	**Moderate** potential for construction noise impacts • For all alternatives, construction activities will vary temporally and spatially as the project progresses. • Noise levels from construction at a given receptor location will also vary over time as different activities take place, and as those activities change location. • At this time, detailed construction plans are not available. Construction noise mitigation in the form of a construction Code of Practice will be written into the contract documentation for the contractor.
2.4 Agriculture	2.4.1 Agriculture - Canada Land Inventory Class 1,2,3 Land	**No** potential for impacts to CLI Class 1,2, 3 lands • No agricultural land CLI Class 1, 2, 3 impacted	**Moderate** potential for impacts to CLI Class 1,2, 3 lands • Potentially displaces 0.1 hectares of agricultural land from a total of 1 agricultural property
	2.4.2 Agricultural - Farm Infrastructure	**Low** potential for impacts to farm infrastructure • No farm buildings (excluding houses) displaced • No farm properties with tile drainage / irrigation systems impacted (assume all impacted agricultural properties are tile drained)	**Low** potential for impacts to farm infrastructure • No farm buildings (excluding houses) displaced • 1 farm property with tile drainage / irrigation systems impacted (assume all impacted agricultural properties are tile drained)
	2.4.3 Agriculture – Operations on Individual Farms	**Low** potential for impacts to operations on individual farms • No agricultural properties impacted	**Low** potential for impacts to operations on individual farms • 1 agricultural property impacted - 1 agricultural property loses frontage
	2.4.4 Agriculture – Transportation Linkages between Integrated Agricultural Business Units	**Low** potential for impacts to transportation linkages between integrated agricultural business units • 2 crossing roads where crossing road treatment restricts access to the highway however limited impacts to agricultural transportation routes given the crossing roads are located within the urban area - Cul-de-sac proposed at Monteith Avenue - Cul-de-sac proposed at Linton Avenue • Grade separation on Highway 7&8 / Lorne Avenue improves travel across railway • Existing road maintained as highway use with additional traffic causing limited disruption to agricultural linkage route (Highway 7&8 / Lorne Avenue)	**Low** potential for impacts to transportation linkages between integrated agricultural business units • 2 crossing roads where crossing road treatment restricts access to the highway however limited impacts to agricultural transportation routes given the crossing roads are located within the urban area - Cul-de-sac proposed at Monteith Avenue - Cul-de-sac proposed at Linton Avenue • Grade separation on Highway 7&8 / Lorne Avenue improves travel across railway • Existing road maintained as highway use with additional traffic causing limited disruption to agricultural linkage route (Highway 7&8 / Lorne Avenue)

Highway 7&8 Transportation Corridor Planning and Class EA Study EVALUATION OF PRELIMINARY DESIGN ALTERNATIVES Note: The evaluation is based on a qualitative assessment of each alternative (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.			
SEGMENT B – West Limit of Stratford to West of Erie Street			
Segment B Alternatives		**Alternative B1**	**Alternative B2 - Recommended**
Cross Section		2-lanes	2-lanes with continuous centre left turn lane
Crossing Road Treatments		Freeland Drive – Unsignalized Queensland Road – Unsignalized Wright Boulevard – Unsignalized St. Vincent Street – Unsignalized Monteith Avenue – Cul-de-sac Linton Avenue – Cul-de-sac	Freeland Drive – Unsignalized Queensland Road – Unsignalized Wright Boulevard – Unsignalized St. Vincent Street – Unsignalized Monteith Avenue – Cul-de-sac Linton Avenue – Cul-de-sac
Factor / Sub-Factor	**Criteria**		
2.5 Land Use / Resources	2.5.1 First Nations People's Treaty Rights or Use of Land and Resources for Traditional Purposes (e.g. hunting, fishing, harvesting of country foods, harvesting of medicinal plants)	**Low** potential to affect First Nations People's Treaty Rights or Use of Land and Resources for Traditional Purposes • All alternatives result in similar potential to affect First Nations People's Treaty Rights of Use of Land / Resources	**Low** potential to affect First Nations People's Treaty Rights or Use of Land and Resources for Traditional Purposes • All alternatives result in similar potential to affect First Nations People's Treaty Rights of Use of Land / Resources
	2.5.2 Parks and Recreational Areas (e.g. national/provincial parks, conservation areas)	**No** potential to affect parks and recreational areas • No parks or conservation areas impacted	**No** potential to affect parks and recreational areas • No parks or conservation areas impacted
	2.5.3 Aggregates, Mineral Resources	**No** potential to affect aggregate / mineral resources • No aggregate / mineral resources impacted	**No** potential to affect aggregate / mineral resources • No aggregate / mineral resources impacted
2.6 Major Utility Transmission Corridors (e.g. railroads, hydro, gas, oil)		**Low** potential to affect major utility corridors • 1 crossing of railway corridor	**Low** potential to affect major utility corridors • 1 crossing of railway corridor
2.7 Contaminated Property and Waste Management (e.g. Landfills, Hazardous Waste Sites, "Brownfield" Areas, other known contaminated sites, and high-risk contamination areas)		**No** potential to affect contaminated property / waste management sites • 4 properties impacted with potential for contamination (industrial / manufacturing sites)	**No** potential to affect contaminated property / waste management sites • 4 properties impacted with potential for contamination (industrial / manufacturing sites)
2.8 Landscape Composition	2.8.1 Scenic Composition (total aesthetic value of landscape components)	**Low** potential to affect scenic composition / aesthetic value • Low impacts to aesthetic value for a majority of route given route is on existing roads	**Low** potential to affect scenic composition / aesthetic value • Low impacts to aesthetic value for a majority of route given route is on existing roads
	2.8.2 Sensitive Viewer Groups	**Low** potential to affect sensitive viewer groups • No sensitive viewer groups adjacent to this alternative where vistas / outlooks will be impacted	**Low** potential to affect sensitive viewer groups • No sensitive viewer groups adjacent to this alternative where vistas / outlooks will be impacted
	2.8.3 Scenic value of views/vistas from the transportation facility	**Low** potential to affect views / vistas from the facility • All alternatives result in similar alteration of the vistas / outlooks for users of the transportation facility	**Low** potential to affect views / vistas from the facility • All alternatives result in similar alteration of the vistas / outlooks for users of the transportation facility
	2.8.4 Specimen Trees	**Moderate** potential to affect specimen trees	**Moderate** potential to affect specimen trees
2.9 Air Quality	2.9.1 Regional Air Quality and Total Contaminant and Greenhouse Gas Emissions	*Previously considered during the detailed planning phase.*	
	2.9.2 Local Air Quality and Sensitive Receptors to Air Pollutants	**Low** potential to affect air quality for sensitive receptors • Design alternatives presented result in no discernible differences in air quality levels for sensitive receptors adjacent to or in close proximity to the corridor.	**Low** potential to affect air quality for sensitive receptors • Design alternatives presented result in no discernible differences in air quality levels for sensitive receptors adjacent to or in close proximity to the corridor.
SOCIO-ECONOMIC SUMMARY		**From a socio-economic environment perspective, Alternative B1 results in the least direct impacts on the environment, however it also results in the most indirect impacts and least opportunity to address concerns and conflicts between local users of the road and inter-regional traffic.**	

Highway 7&8 Transportation Corridor Planning and Class EA Study EVALUATION OF PRELIMINARY DESIGN ALTERNATIVES Note: The evaluation is based on a qualitative assessment of each alternative (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.			
SEGMENT B – West Limit of Stratford to West of Erie Street			
Segment B Alternatives		**Alternative B1**	**Alternative B2 - Recommended**
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Factor / Sub-Factor	**Criteria**		
3. Cultural Environmental Factors			
3.1 Cultural Heritage – Built Heritage and Cultural Landscapes	3.1.1 Buildings or "Standing" Sites of Architectural or Heritage Significance or Ontario Heritage Foundation Easement Properties	**No** potential for impacts to buildings or "standing" sites of architectural or heritage significance • No sites of architectural or heritage significance impacted	**No** potential for impacts to buildings or "standing" sites of architectural or heritage significance • No sites of architectural or heritage significance impacted
	3.1.2 Heritage Bridges	**No** potential for impacts to heritage bridges • No heritage bridges displaced	**No** potential for impacts to heritage bridges • No heritage bridges displaced
	3.1.3 Areas of Historic 19th Century Settlement	**No** potential for impacts to areas of historic 19th century settlement • No intrusion into 19th century settlement areas	**No** potential for impacts to areas of historic 19th century settlement • No intrusion into 19th century settlement areas
	3.1.4 Cultural Heritage Landscapes (collection of individual man-made features modifying pristine landscape)	**No** potential for impacts to cultural landscapes • No cultural landscapes identified	**No** potential for impacts to cultural landscapes • No cultural landscapes identified
	3.1.5 First Nations' Burial Sites	**Low** potential for impacts to First Nations burial sites • No known / reported First Nation burial sites in the study area	**Low** potential for impacts to First Nations burial sites • No known / reported First Nation burial sites in the study area
	3.1.6 Cemeteries	**Low** potential for impacts to cemeteries • No known cemeteries impacted • Downy Township Pioneer Cemetery is in close proximity	**Low** potential for impacts to cemeteries • No known cemeteries impacted • Downy Township Pioneer Cemetery is in close proximity
3.2 Cultural Heritage – Archaeology	3.2.1 Pre-Historic and Historic First Nations Sites 3.2.2 Historic Euro-Canadian Archaeological Sites	**Low** potential for destruction or disturbance of documented or undocumented archaeological sites • General concentration of registered archaeological sites in vicinity of existing roads (Highway 7&8) • Limited potential for previously undocumented archaeological sites within new areas of right-of-way given lands are developed and heavily disturbed	**Low** potential for destruction or disturbance of documented or undocumented archaeological sites • General concentration of registered archaeological sites in vicinity of existing roads (Highway 7&8) • Limited potential for previously undocumented archaeological sites within new areas of right-of-way
CULTURAL ENVIRONMENT SUMMARY		**For all alternatives, potential impacts to features of the cultural environment are comparable with no discernible differences.**	
4. Area Economy	Previously Addressed During the Needs Assessment Phase		

Highway 7&8 Transportation Corridor Planning and Class EA Study EVALUATION OF PRELIMINARY DESIGN ALTERNATIVES Note: The evaluation is based on a qualitative assessment of each alternative (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.			
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Segment B Alternatives		**Alternative B1**	**Alternative B2 - Recommended**
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	Crossing Road Treatments	Freeland Drive – Unsignalized Queensland Road – Unsignalized Wright Boulevard – Unsignalized St. Vincent Street – Unsignalized Monteith Avenue – Cul-de-sac Linton Avenue – Cul-de-sac	Freeland Drive – Unsignalized Queensland Road – Unsignalized Wright Boulevard – Unsignalized St. Vincent Street – Unsignalized Monteith Avenue – Cul-de-sac Linton Avenue – Cul-de-sac
Factor / Sub-Factor	**Criteria**		
5. Transportation Factors			
5.1 Area Transportation System Capacity and Efficiency	5.1 Federal/Provincial/Municipal transportation planning policies/goals/objectives	*Previously addressed during Needs Assessment Phase* Highway 7&8 is a regionally significant part of the overall provincial highway network. It plays a key role in linking communities in south-western Ontario and supports economic prosperity across Ontario.	
	5.2 Efficient movement of people	**Moderate** potential to support efficient movement of people • Route utilizes existing roadway corridor (Perth Line 32 / Lorne Avenue), with reduced level of service given number of sideroads / private driveways • Direct route	**Moderate** potential to support efficient movement of people • Route utilizes existing roadway corridor (Perth Line 32 / Lorne Avenue), with reduced level of service given number of sideroads / private driveways • Direct route
	5.3 Efficient movement of goods	**Moderate** potential to support efficient movement of goods • Route utilizes existing roadway corridors (Perth Line 32 / Lorne Avenue), with reduced level of service given number of sideroads / private driveways • Direct route	**Moderate** potential to support efficient movement of goods • Route utilizes existing roadway corridors (Perth Line 32 / Lorne Avenue), with reduced level of service given number of sideroads / private driveways • Direct route
5.2 System reliability / redundancy		**Low** potential to support system reliability and redundancy • Route uses existing roadway corridor, which does not provide an alternate route to accommodate travel during adverse conditions; however, parallel municipal roads do currently serve this function	**Low** potential to support system reliability and redundancy • Route uses existing roadway corridor, which does not provide an alternate route to accommodate travel during adverse conditions; however, parallel municipal roads do currently serve this function
5.3 Safety	5.3.1 Traffic Safety	**Moderate** potential to improve traffic safety • Route uses existing roadway corridor with direct access points associated with sideroads / private entrances • Two lane cross section does not provide for good passing opportunity • Left turn movements to sideroads / private entrances must be made from through lane	**Moderate** potential to improve traffic safety • Route uses existing roadway corridor with direct access points associated with sideroads / private entrances • Three lane cross section does not provide for good passing opportunity but centre left turn lane would accommodate safer left turns along the highway to sideroads / private entrances
	5.3.2 Emergency Access	**High** potential to support emergency access to/from route • Full moves connection provided at majority of sideroads	**High** potential to support emergency access to/from route • Full moves connection provided at majority of sideroads
	5.3.3 Pedestrian, Cyclist and Snowmobile Safety within the highway right-of-way	**Low** potential to improve pedestrian, cyclist and snowmobile safety • Cyclist movements within right-of-way can be accommodated via improved shoulders • Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	**Low** potential to improve pedestrian, cyclist and snowmobile safety • Cyclist movements within right-of-way can be accommodated via improved shoulders • Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations
5.4 Mobility and Access	5.4.1 Modal integration, balance and efficiency	**Moderate** potential to improve modal integration, balance and efficiency • Transit service is potentially constrained by bypass of downtown Stratford, but is supported by direct connection to development along Lorne Avenue • Use of existing roadways would constrain transit travel performance	**Moderate** potential to improve modal integration, balance and efficiency • Transit service is potentially constrained by bypass of downtown Stratford, but is supported by direct connection to development along Lorne Avenue • Use of existing roadways would constrain transit travel performance
	5.4.2 Linkages to Population and Employment Centres	**High** potential to improve linkages to population and employment centres • Improved linkage to Stratford area to/from the east via 4-lane facility	**High** potential to improve linkages to population and employment centres • Improved linkage to Stratford area to/from the east via 4-lane facility
	5.4.3 Recreation and Tourism Travel	**Moderate** potential to support recreation and tourism travel • Stratford tourist area is bypassed, but tourist travel through the analysis area is facilitated	**Moderate** potential to support recreation and tourism travel • Stratford tourist area is bypassed, but tourist travel through the analysis area is facilitated

Highway 7&8 Transportation Corridor Planning and Class EA Study EVALUATION OF PRELIMINARY DESIGN ALTERNATIVES Note: The evaluation is based on a qualitative assessment of each alternative (high, medium or low). Relevant and site-specific information for each criterion/cell is provided to justify the high, medium or low assessment.			
SEGMENT B – West Limit of Stratford to West of Erie Street			
Segment B Alternatives		**Alternative B1**	**Alternative B2 - Recommended**
Cross Section		2-lanes	2-lanes with continuous centre left turn lane
Crossing Road Treatments		Freeland Drive – Unsignalized Queensland Road – Unsignalized Wright Boulevard – Unsignalized St. Vincent Street – Unsignalized Monteith Avenue – Cul-de-sac Linton Avenue – Cul-de-sac	Freeland Drive – Unsignalized Queensland Road – Unsignalized Wright Boulevard – Unsignalized St. Vincent Street – Unsignalized Monteith Avenue – Cul-de-sac Linton Avenue – Cul-de-sac
Factor / Sub-Factor	**Criteria**		
	5.4.4 Accommodate mobility of pedestrians, cyclists and snowmobiles	**Low** potential to accommodate mobility of pedestrians, cyclists and snowmobiles • Cyclist movements within right-of-way can be accommodated via improved shoulders • Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations	**Low** potential to accommodate mobility of pedestrians, cyclists and snowmobiles • Cyclist movements within right-of-way can be accommodated via improved shoulders • Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersection locations and/or designated crossing locations
5.5 Network Compatibility	5.5.1 Network Connectivity	**High** potential to improve transportation system connectivity • Provides improved linkage between Stratford and New Hamburg	**High** potential to improve transportation system connectivity • Provides improved linkage between Stratford and New Hamburg
	5.5.2 Flexibility for Future Expansion	**Moderate** potential for future expansion • Route uses existing alignment	**Moderate** potential for future expansion • Route uses existing alignment
5.6 Engineering	5.6.1 Constructability	**Moderate** potential for constructability issues • Uses existing roadway corridor (Perth Line 32 / Lorne Avenue) requiring more complex traffic staging during construction • One railway crossing	**Moderate** potential for constructability issues • Uses existing roadway corridor (Perth Line 32 / Lorne Avenue) requiring more complex traffic staging during construction • One railway crossing
	5.6.2 Compliance with Design Criteria	**High** conformity to safety and design standards • Supports use of better than minimum horizontal and vertical alignment elements • Can accommodate standard lane and shoulder widths **High** conformity to control private entrances and road connections onto highway • Strict access control resulting in highway that functions safely and efficiently for its useful life • Highway Access Management Plan will be developed for managing entrances onto the corridor: - spacing between existing/proposed intersections along highway - density of proposed entrances along highway - offset spacing from highway to first intersection / entrance on public crossing road - location of existing and proposed inter-regional and municipal transit routes and facilities - traffic impact study(s), to support existing and future land use planning decisions for above	**High** conformity to safety and design standards • Supports use of better than minimum horizontal and vertical alignment elements • Can accommodate standard lane and shoulder widths **High** conformity to control private entrances and road connections onto highway • Strict access control resulting in highway that functions safely and efficiently for its useful life • Highway Access Management Plan will be developed for managing entrances onto the corridor: - spacing between existing/proposed intersections along highway - density of proposed entrances along highway - offset spacing from highway to first intersection / entrance on public crossing road - location of existing and proposed inter-regional and municipal transit routes and facilities - traffic impact study(s), to support existing and future land use planning decisions for above
5.7 Traffic Operations		**Moderate** potential for negative impact on traffic operations • Route uses existing roadway alignment, with multiple private entrances • 6 at-grade intersections (4 signalized and 2 cul-de-saced)	**Low** potential for negative impact on traffic operations • Route uses existing roadway alignment, with multiple private entrances • 6 at-grade intersections (4 signalized and 2 cul-de-saced) • Continuous two-way left turn lane would separate left turns from through movement
5.8 Construction Cost (excludes property costs and engineering costs)		**Low Relative Cost** $2.5 M	**Moderate Relative Cost** $6.4 M
TRANSPORTATION SUMMARY		**Alternative B2 is preferred from a transportation perspective as it offers improved traffic safety and has lower potential for negative impact on traffic operations relative to the other alternatives.**	
RECOMMENDATION		**Alternative B2 is recommended.** **For all alternatives, potential impacts to features of the natural and cultural environments are comparable with no discernible differences.** **From a socio-economic environment perspective, Alternative B1 results in the least direct impacts on the environment, however it also results in the most indirect impacts and least opportunity to address concerns and conflicts between local users of the road and inter-regional traffic.** **Alternative B2 is preferred from a transportation perspective as it offers improved traffic safety and has lower potential for negative impact on traffic operations relative to the other alternatives.**	