

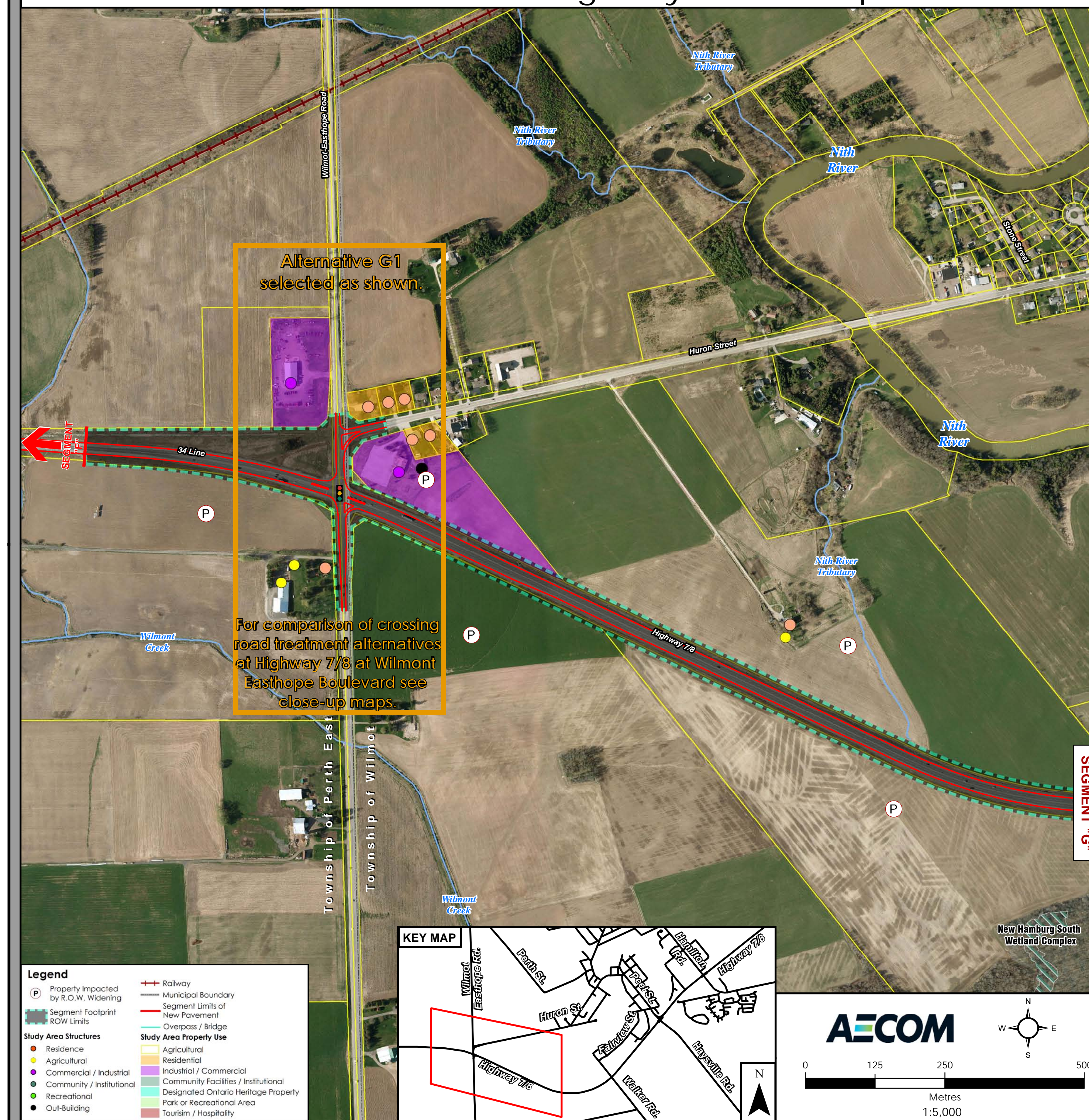
APPENDIX F

Segment G: West of Regional Road 1 to West of Nafziger Road

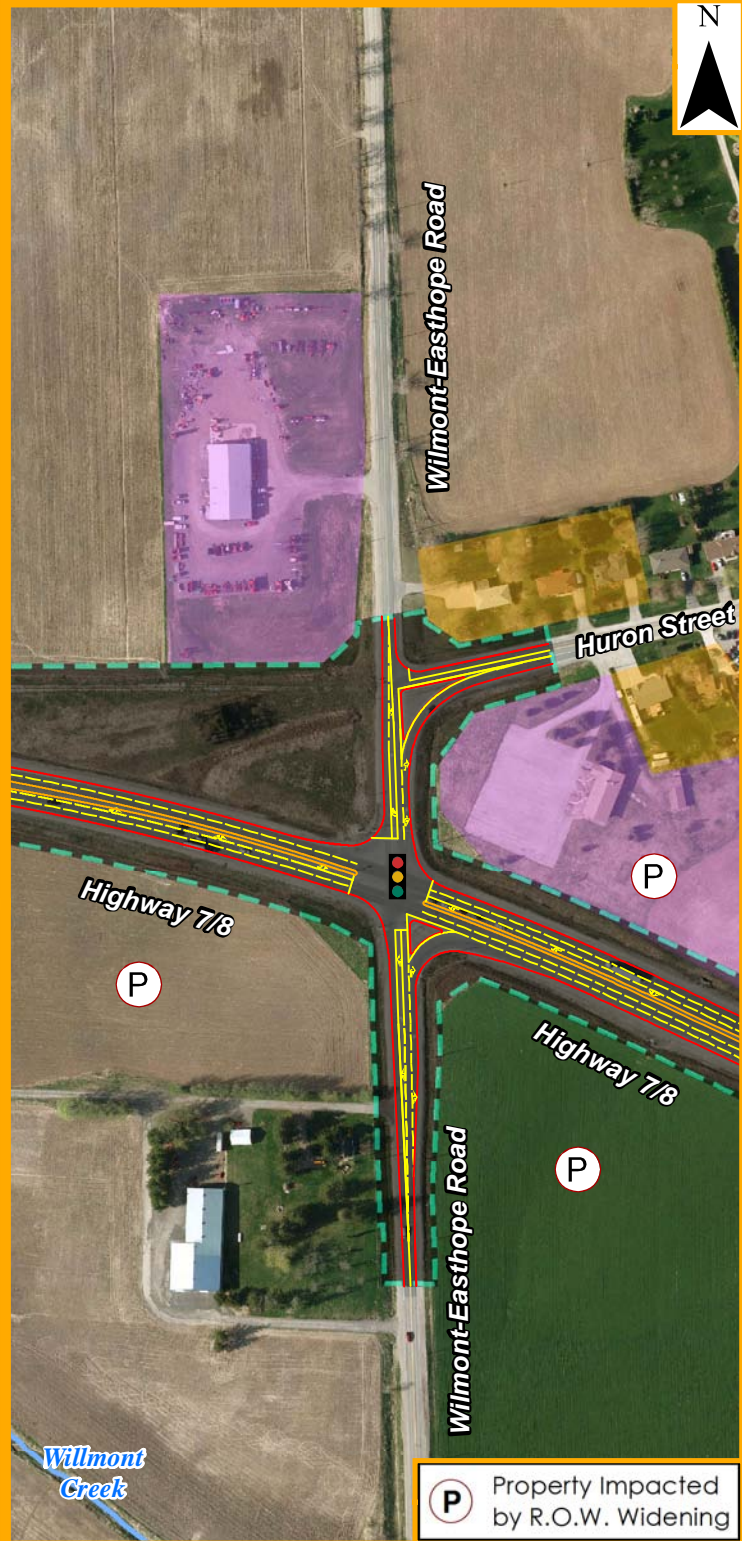
**Environmental Considerations Mapping: Preliminary Design Map for Recommended Plan and
Close-up Maps of Crossing Road Intersection Treatment Alternatives**

Preliminary Design Alternatives Assessment and Evaluation Table

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



Highway 7/8 and Wilmont-Easthope Road

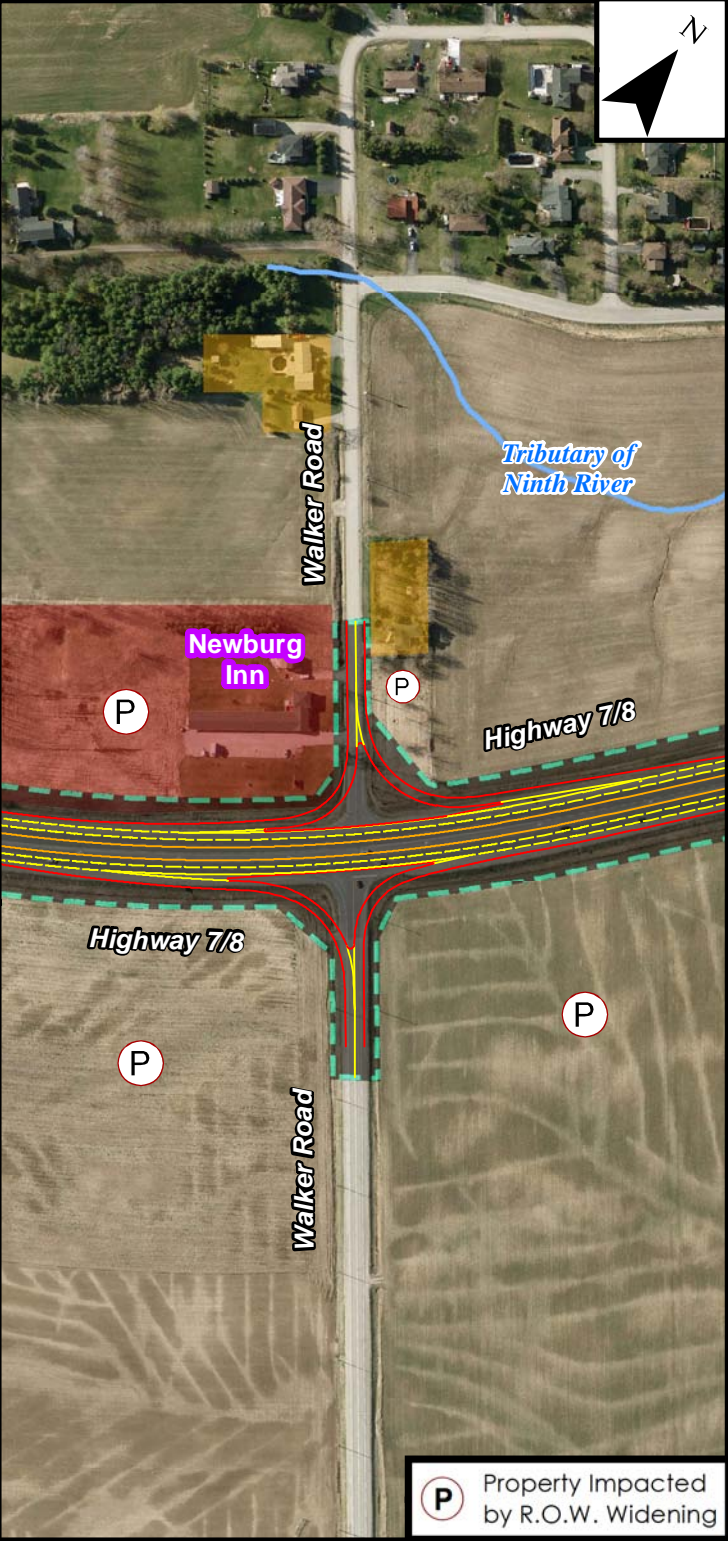


Alternative G1 and G2 are the same at this crossing road.

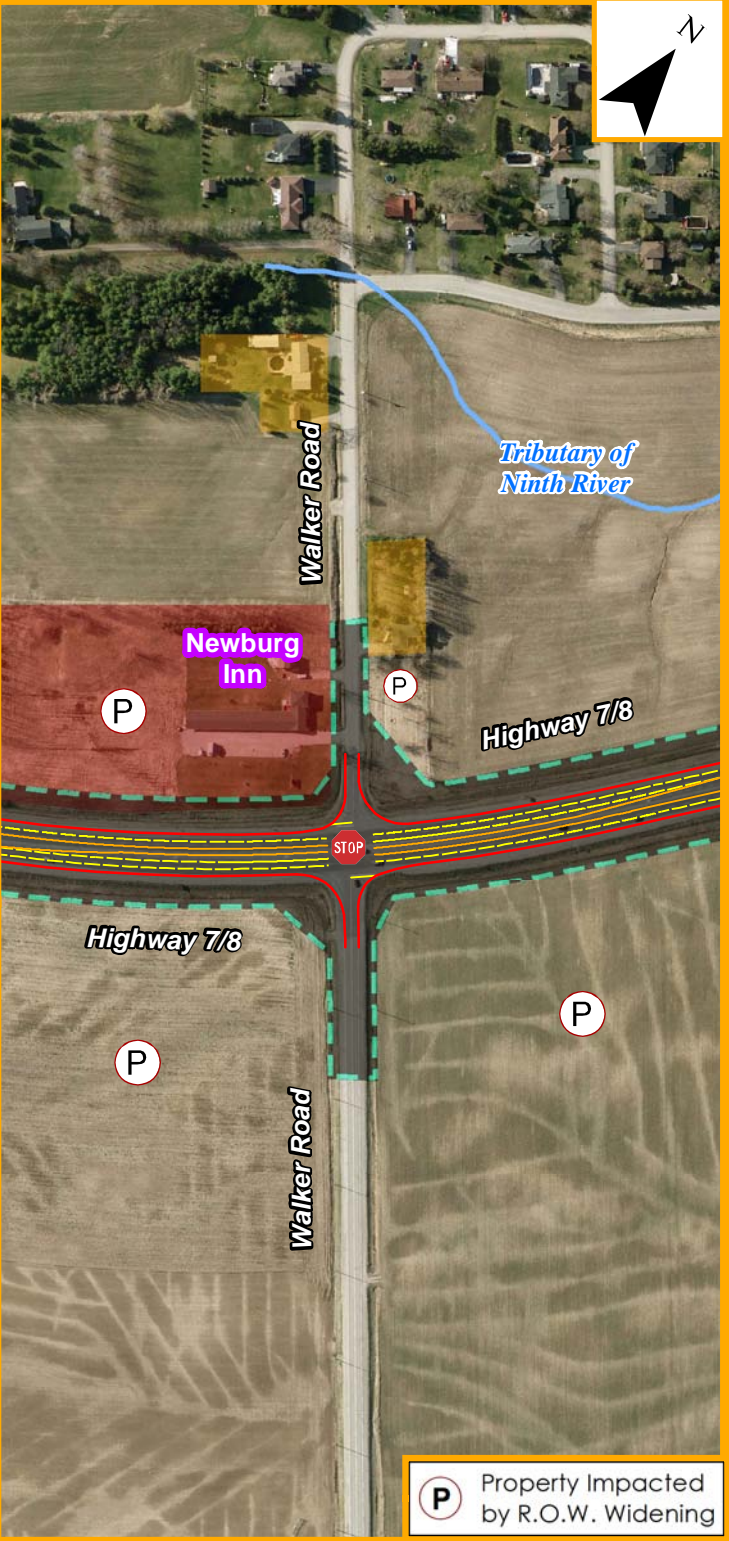
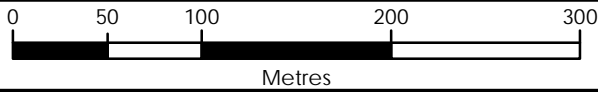
Selected Alternative G1
Signalized intersection



Highway 7/8 and Walker Road

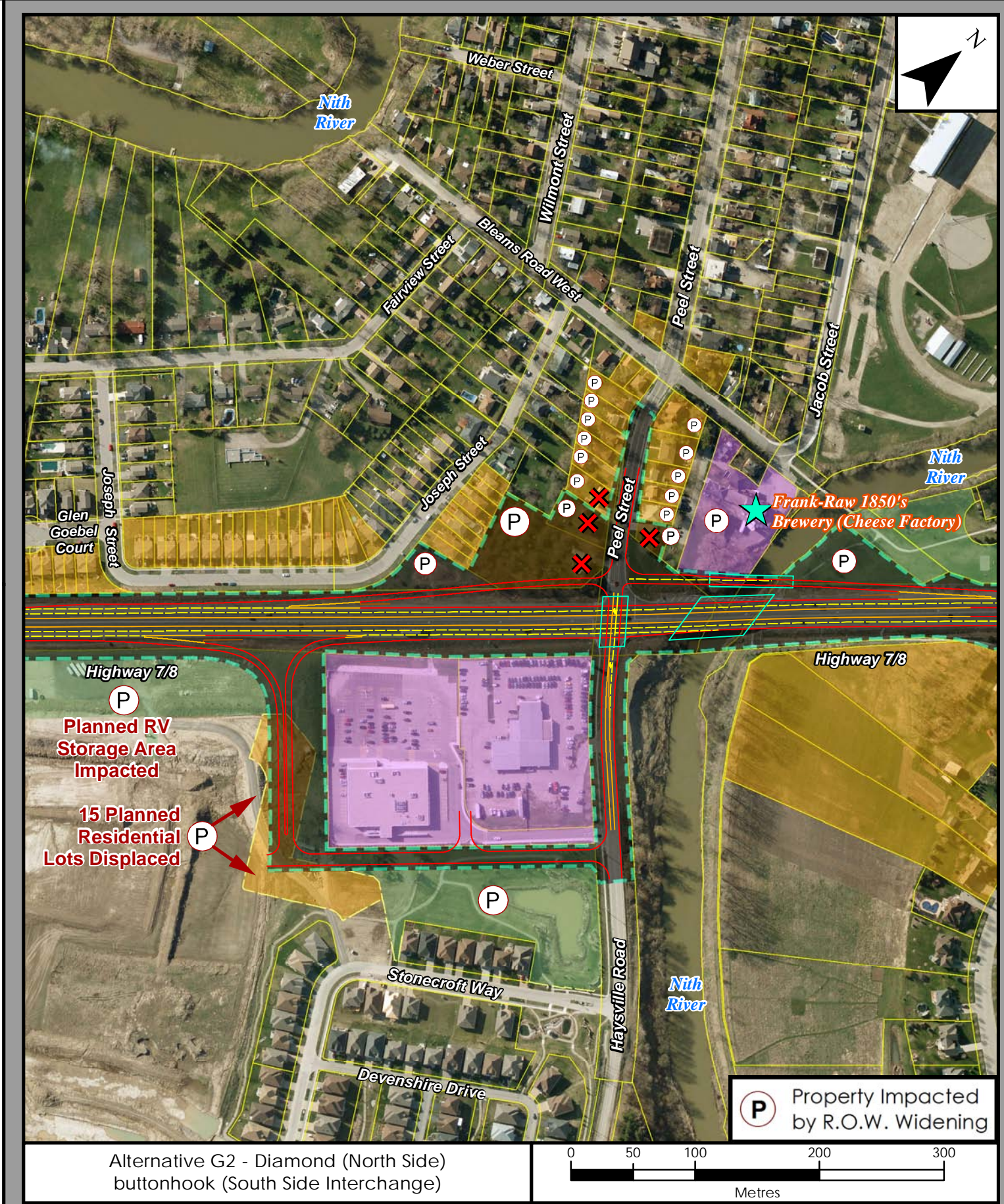
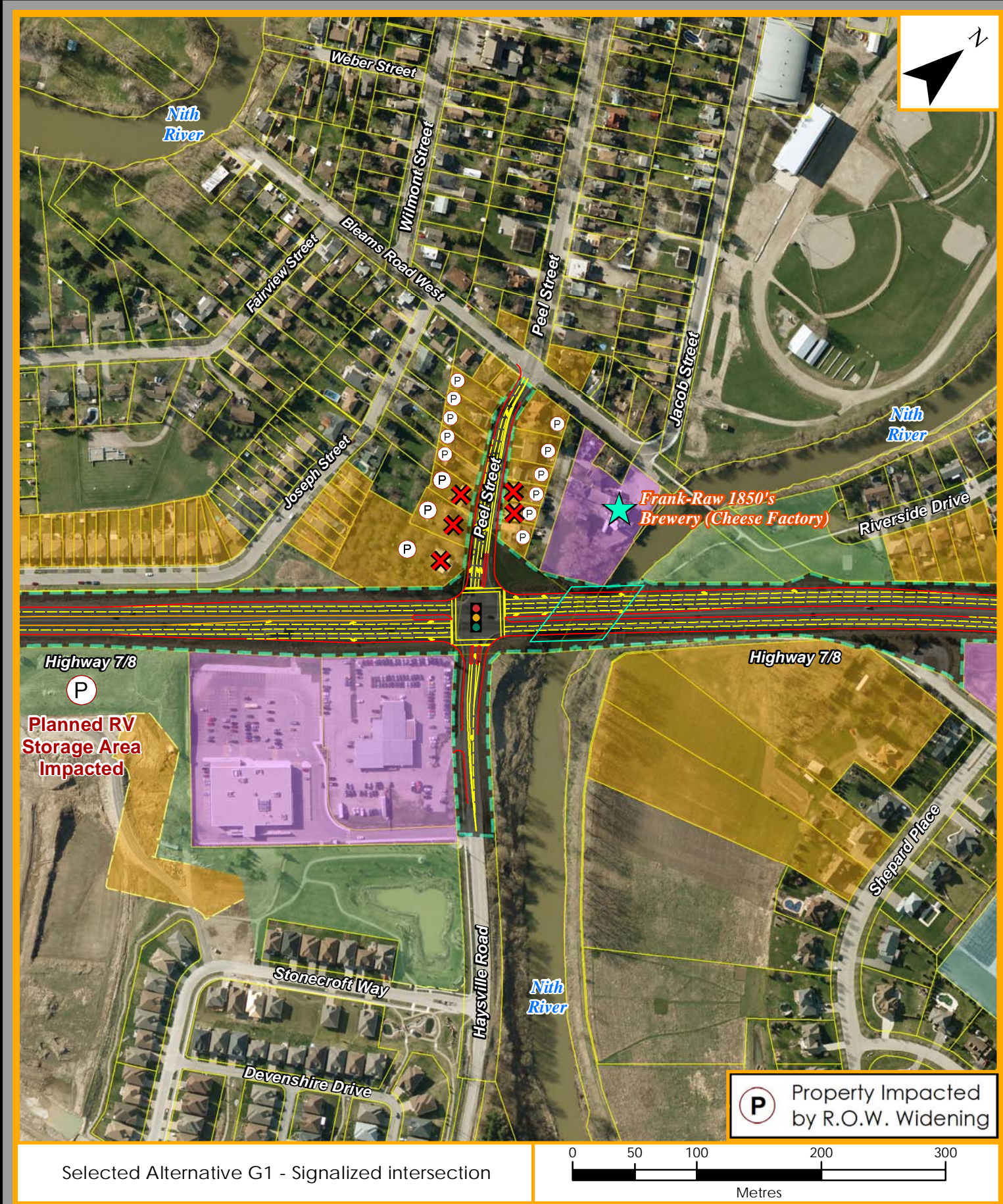


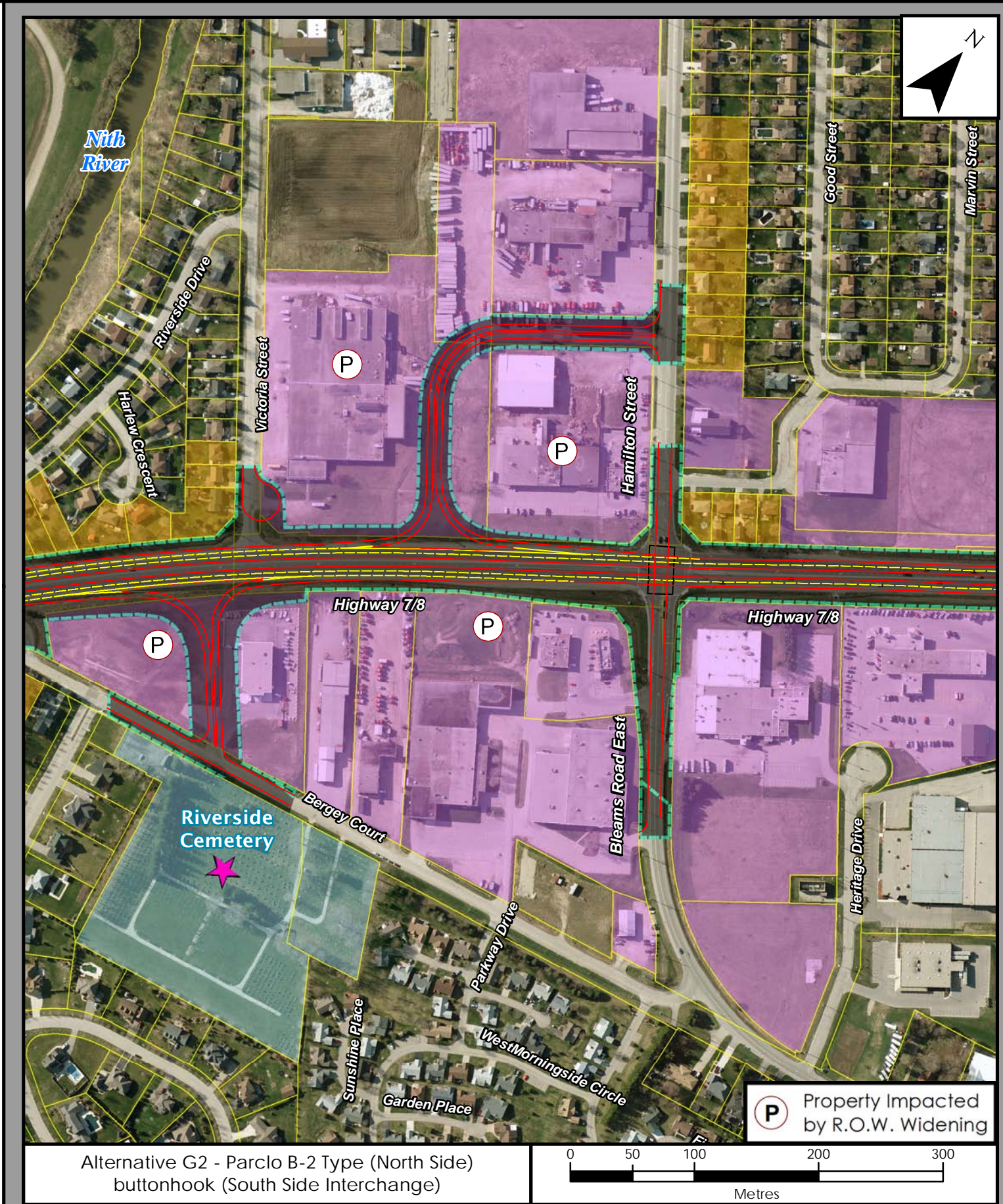
Alternative G2
Unsignalized with right-in right-out



Alternative G1
Unsignalized with stop control







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 G – West of Regional Road 1 to West of Nafziger Road			
Segment G Alternatives		Alternative G1 - Recommended	Alternative G2
Cross Section		4-lanes with 6-lanes through Peel Street and 7m median	4-lanes throughout and 7m median
Crossing Road Treatments		Regional Road 1 – Signalized Walker Road – Unsignalized (stop control on the crossing road) Peel Street – Signalized Victoria Street – Cul-de-sac Hamilton street – Signalized	Regional Road 1 – Signalized Walker Road – Unsignalized (right-in, right-out) Peel Street – Interchange Victoria Street – Cul-de-sac Hamilton street – Interchange
Factor / Sub-Factor	Criteria		
1. Natural Environmental Factors			
1.1 Fisheries and Aquatic Ecosystems	1.1.1 Fish Habitat	Moderate potential to affect fish and fish habitat <ul style="list-style-type: none">• 2 watercourse crossings<ul style="list-style-type: none">- 1 crossing of Nith River (warm water)- 1 crossing of a tributary of the Nith River (thermal regime unknown)• No SAR recorded in any crossing	Moderate potential to affect fish and fish habitat <ul style="list-style-type: none">• 2 watercourse crossings<ul style="list-style-type: none">- 1 crossing of Nith River (warm water)- 1 crossing of a tributary of the Nith River (thermal regime unknown)• No SAR recorded in any crossing
	1.1.2 Fish Community		
1.2 Terrestrial Ecosystems	1.2.1 Wildlife	Low potential to affect wildlife and their habitat <ul style="list-style-type: none">• 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 species of special concern (MNR S-Rank 3) in close proximity / within the alternative• 2 frog species in close proximity / within the alternative	Low potential to affect wildlife and their habitat <ul style="list-style-type: none">• 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 species of special concern (MNR S-Rank 3) in close proximity / within the alternative• 2 frog species in close proximity / within the alternative
	1.2.2 Wetlands	Low potential to affect wetlands <ul style="list-style-type: none">• One LSW (New Hamburg Oxbow Wetland Complex) located approximately 120 m from the right-of-way	Low potential to affect wetlands <ul style="list-style-type: none">• One LSW (New Hamburg Oxbow Wetland Complex) located approximately 120 m from the right-of-way
	1.2.3 Forests (e.g. woodlands [forest stands, woodlots and interior forest habitat] and significant valley lands [valley and stream corridors])	No potential to affect forested areas <ul style="list-style-type: none">• No forested areas impacted	No potential to affect forested areas <ul style="list-style-type: none">• No forested areas impacted
	1.2.4 Vegetation Species At Risk	Moderate potential to affect vegetation <ul style="list-style-type: none">• 1 vegetation SAR (Soft Hairy False Gromwell, S-Rank 2) in close proximity• 2 vegetation SAR (Braun's Holly Fern and Scarlet Beebalm, S-Rank 3) in close proximity	Moderate potential to affect vegetation <ul style="list-style-type: none">• 1 vegetation SAR (Soft Hairy False Gromwell, S-Rank 2) in close proximity• 2 vegetation SAR (Braun's Holly Fern and Scarlet Beebalm, 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)	High potential to affect designated special areas <ul style="list-style-type: none">• Nith River is designated as a Significant Natural Area under the Township's Official Plan and a Special Valley by the Region of Waterloo	High potential to affect designated special areas <ul style="list-style-type: none">• Nith River is designated as a Significant Natural Area under the Township's Official Plan and a Special Valley by the Region of Waterloo
1.3 Groundwater	1.3.1 Areas of Groundwater Recharge and Discharge 1.3.2 Groundwater Source Areas and Wellhead Protection Areas	Low potential to affect areas of groundwater recharge / discharge areas / wellhead protection areas <ul style="list-style-type: none">• No temporary or long term change to groundwater recharge / discharge areas• No wellhead protection areas impacted• Some surface runoff is expected to exceed infiltration for the majority of the route given the relatively impermeable nature of the surrounding soils	Low potential to affect areas of groundwater recharge / discharge areas / wellhead protection areas <ul style="list-style-type: none">• No temporary or long term change to groundwater recharge / discharge areas• No wellhead protection areas impacted• Some surface runoff is expected to exceed infiltration for the majority of the route given the relatively impermeable nature of the surrounding soils

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		Factor / Sub-Factor	Criteria
	1.3.3 Large Volume Wells	Low potential to affect large volume wells <ul style="list-style-type: none">• No large volume wells impacted	Low potential to affect large volume wells <ul style="list-style-type: none">• no large volume wells impacted
	1.3.4 Private Wells	Moderate potential to affect private well use <ul style="list-style-type: none">• 2 private, shallow wells displaced• 9 shallow dug wells in close proximity (<150 m)<ul style="list-style-type: none">- Sensitive to surface contamination; potential short and long term impacts• 2 deep bedrock aquifer wells in close proximity (<150 m)	Moderate potential to affect private well use <ul style="list-style-type: none">• 2 private, shallow wells displaced• 9 shallow dug wells in close proximity (<150 m)<ul style="list-style-type: none">- Sensitive to surface contamination; potential short and long term impacts• 3 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 <ul style="list-style-type: none">• No groundwater sensitive ecosystems impacted• Low potential for short and long term change to groundwater quantity / quality<ul style="list-style-type: none">- 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 <ul style="list-style-type: none">• No groundwater sensitive ecosystems impacted• Low potential for short and long term change to groundwater quantity / quality<ul style="list-style-type: none">- 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 <ul style="list-style-type: none">• 2 watercourse crossings	Low potential to affect drainage features / patterns and surface water quality / quantity <ul style="list-style-type: none">• 2 watercourse crossings
	1.4.2 Surface Water Quality and Quantity		
NATURAL ENVIRONMENT SUMMARY		Both alternatives have the same potential impacts to features of the natural environment 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 <ul style="list-style-type: none">• No First Nations Land Claims impacted<ul style="list-style-type: none">- 5 First Nations Land Claims filed in the study area	No potential to affect First Nations Land Claims <ul style="list-style-type: none">• No First Nations Land Claims impacted<ul style="list-style-type: none">- 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 <ul style="list-style-type: none">• No First Nations Reserves in the study area	No potential to affect First Nations Reserves <ul style="list-style-type: none">• No First Nations Reserves in the study area
	2.2.2 First Nations’ Sacred Grounds	Low potential to affect First Nations Sacred Grounds <ul style="list-style-type: none">• No known First Nations Sacred Grounds in the study area	Low potential to affect First Nations Sacred Grounds <ul style="list-style-type: none">• No known First Nations Sacred Grounds in the study area

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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 <ul style="list-style-type: none"> 13 residential properties impacted <ul style="list-style-type: none"> 8 residential properties lose frontage Homes are displaced on 5 of these residential properties 5 residential properties completely displaced No residential property severed Low impact on character and use of residential property as while the alternative passes through built up residential areas and does displace a residence, use and enjoyment of the residential uses adjacent to the right-of-way are largely maintained 	High potential for impacts to urban and rural residential areas <ul style="list-style-type: none"> 28 residential properties impacted <ul style="list-style-type: none"> 13 residential properties lose frontage Homes are displaced on 4 of these residential properties 15 residential properties completely displaced (residential lots) No residential property severed High impact on character and use of residential property as the alternative passes through built up residential areas and displaces 4 residences and 15 residential lots. In addition the use and enjoyment of residential uses adjacent to the right-of-way are disrupted with the introduction of interchanges at Peel Street and Hamilton Street.
	2.2.4 Commercial/Industrial	Moderate potential for impacts to commercial / industrial areas <ul style="list-style-type: none"> 4 commercial / industrial properties impacted <ul style="list-style-type: none"> 4 commercial / industrial properties lose frontage No commercial / industrial building displaced Low impacts on use and character and cohesion of commercial / industrial area as few properties impacted and access / travel for commercial / industrial uses adjacent to the right-of-way is largely maintained. 	High potential for impacts to commercial / industrial areas <ul style="list-style-type: none"> 6 commercial / industrial properties impacted <ul style="list-style-type: none"> 5 commercial / industrial properties lose frontage 1 commercial / industrial building displaced Moderate impacts on use, character and cohesion of commercial / industrial area as 2 businesses are displaced and travel / access for commercial / industrial uses adjacent to the right-of-way is disrupted with the introduction of interchanges.
	2.2.5 Tourist Areas and Attractions (e.g. museums, theatres, etc.)	High potential for impacts to tourist areas and attractions <ul style="list-style-type: none"> 1 tourist area / destination impacted <ul style="list-style-type: none"> 1 tourist area / destination loses frontage(New Hamburg Inn) No impacts on use, character and cohesion of tourist areas / attractions 	High potential for impacts to tourist areas and attractions <ul style="list-style-type: none"> 1 tourist area / destination impacted <ul style="list-style-type: none"> 1 tourist area / destination loses frontage(New Hamburg Inn) 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)	No potential for impacts to community facilities and institutions <ul style="list-style-type: none"> No community facilities / institutions impacted No impacts on use, character and cohesion of community facilities / institutions 	High potential to affect community facilities and institutions <ul style="list-style-type: none"> 1 park / gateway feature is impacted Low impacts on use, character and cohesion of community facilities / institutions
	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 <ul style="list-style-type: none"> No municipal infrastructure / public service facilities impacted 	No potential to affect Municipal Infrastructure and Public Service Facilities <ul style="list-style-type: none"> No municipal infrastructure / public service facilities impacted
	2.2.8 Downtown Historic Crossroads Function	No potential to affect Downtown or Historic Crossroads <ul style="list-style-type: none"> No historic downtown cross roads in this segment 	No potential to affect Downtown or Historic Crossroads <ul style="list-style-type: none"> No historic downtown cross roads in this segment
	2.2.9 Out of Way Travel for Access to / from local land uses	Low potential to affect Out of Way Travel <ul style="list-style-type: none"> 1 crossing road where crossing road treatment introduces out-of-way travel to access / exit the highway for some local users <ul style="list-style-type: none"> Cul-de-sac proposed at Victoria Street 	Low potential to affect Out of Way Travel <ul style="list-style-type: none"> 2 crossing roads where crossing road treatment introduces out-of-way travel to access / exit the highway for some local users <ul style="list-style-type: none"> Right-in right-out access proposed at Walker Road Cul-de-sac proposed at Victoria Street

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Factor / Sub-Factor	Criteria		
2.3 Noise Sensitive Areas (NSAs) (residential areas and sensitive institutional uses)	2.3.1 Highway Noise	Low potential for highway noise impacts. <ul style="list-style-type: none"> Noise levels are anticipated 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. <ul style="list-style-type: none"> Noise levels are anticipated 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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> 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	Moderate potential for impacts to CLI Class 1,2, 3 lands <ul style="list-style-type: none"> Potentially displaces 3.9 hectares of agricultural land from a total of 10 agricultural properties 	Moderate potential for impacts to CLI Class 1,2, 3 lands <ul style="list-style-type: none"> Potentially displaces 3.9 hectares of agricultural land from a total of 10 agricultural properties
	2.4.2 Agricultural - Farm Infrastructure	Low potential for impacts to farm infrastructure <ul style="list-style-type: none"> No farm buildings (excluding houses) displaced 10 farm properties with tile drainage / irrigation systems impacted (assume all impacted agricultural properties are tile drained) 	Low potential for impacts to farm infrastructure <ul style="list-style-type: none"> No farm buildings (excluding houses) displaced 10 farm properties 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 <ul style="list-style-type: none"> 10 agricultural properties impacted <ul style="list-style-type: none"> No agricultural properties are severed and no parcels are potentially landlocked 10 agricultural properties lose frontage No potentially landlocked parcels created 	Low potential for impacts to operations on individual farms <ul style="list-style-type: none"> 10 agricultural properties impacted <ul style="list-style-type: none"> No agricultural properties are severed and no parcels are potentially landlocked 10 agricultural properties lose frontage No potentially landlocked parcels created
	2.4.4 Agriculture – Transportation Linkages between Integrated Agricultural Business Units	Low potential for impacts to transportation linkages between integrated agricultural business units <ul style="list-style-type: none"> 1 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 <ul style="list-style-type: none"> Cul-de-sac proposed at Victoria Street Existing road maintained as highway use with additional traffic causing disruption to agricultural linkage route (Highway 7&8) 	Moderate potential for impacts to transportation linkages between integrated agricultural business units <ul style="list-style-type: none"> 2 crossing roads where crossing road treatment restricts access to the highway <ul style="list-style-type: none"> Moderate impacts to agricultural route with right-in right-out access proposed at Walker Road Limited impacts to agricultural transportation routes with Cul-de-sac proposed at Victoria Street Existing road maintained as highway use with additional traffic causing disruption to agricultural linkage route (Highway 7&8)
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 <ul style="list-style-type: none"> 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 <ul style="list-style-type: none"> All alternatives result in similar potential to affect First Nations People's Treaty Rights of Use of Land / Resources

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Factor / Sub-Factor	Criteria			
	2.5.2 Parks and Recreational Areas (e.g. national/provincial parks, conservation areas)	No potential to affect parks and recreational areas <ul style="list-style-type: none">No parks or conservation areas impacted	No potential to affect parks and recreational areas <ul style="list-style-type: none">No parks or conservation areas impacted	
	2.5.3 Aggregates, Mineral Resources	No potential to affect aggregate / mineral resources <ul style="list-style-type: none">No aggregate / mineral resources impacted	No potential to affect aggregate / mineral resources <ul style="list-style-type: none">No aggregate / mineral resources impacted	
2.6 Major Utility Transmission Corridors (e.g. railroads, hydro, gas, oil)		No potential to affect major utility corridors <ul style="list-style-type: none">No major utility corridors impacted / crossed	No potential to affect major utility corridors <ul style="list-style-type: none">No major utility corridors impacted / crossed	
2.7 Contaminated Property and Waste Management (e.g. Landfills, Hazardous Waste Sites, “Brownfield” Areas, other known contaminated sites, and high-risk contamination areas)		Low potential to affect contaminated property / waste management sites <ul style="list-style-type: none">2 properties in close proximity where spills have been recordedNo properties impacted with known potential contamination concerns	Low potential to affect contaminated property / waste management sites <ul style="list-style-type: none">2 properties in close proximity where spills have been recordedNo properties impacted with known potential contamination concerns	
2.8 Landscape Composition	2.8.1 Scenic Composition (total aesthetic value of landscape components)	Low potential to affect scenic composition / aesthetic value <ul style="list-style-type: none">Low impacts to aesthetic value for a majority of route given route is on existing roads	Low potential to affect scenic composition / aesthetic value <ul style="list-style-type: none">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 <ul style="list-style-type: none">No sensitive viewer groups adjacent to this alternative where vistas / outlooks will be significantly impacted	High potential to affect sensitive viewer groups <ul style="list-style-type: none">1 sensitive viewer group (residents of Stonecroft development plan area) adjacent to this alternative where vistas / outlooks will be negatively impacted by requirement for retaining wall in vicinity of Peel Street	
	2.8.3 Scenic value of views/vistas from the transportation facility	Low potential to affect views / vistas from the facility <ul style="list-style-type: none">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 <ul style="list-style-type: none">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	<i>Previously considered during the detailed planning phase.</i>		
	2.9.2 Local Air Quality and Sensitive Receptors to Air Pollutants	Low potential to affect air quality for sensitive receptors <ul style="list-style-type: none">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 <ul style="list-style-type: none">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		Alternative G1 is preferred as it results in the least direct impacts to residential uses; commercial / industrial uses; community facilities and institutions and sensitive viewer groups. Alternative G1 also has the least indirect impacts on access and travel on Highway 7&8 and areas adjacent to it as it has fewest crossing roads where crossing road treatment introduces out-of-way travel.		
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 <ul style="list-style-type: none">No sites of architectural or heritage significance impacted	No potential for impacts to buildings or “standing” sites of architectural or heritage significance <ul style="list-style-type: none">No sites of architectural or heritage significance impacted	

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	3.1.2 Heritage Bridges	No potential for impacts to heritage bridges <ul style="list-style-type: none">No heritage bridges displaced	No potential for impacts to heritage bridges <ul style="list-style-type: none">No heritage bridges displaced
	3.1.3 Areas of Historic 19 th Century Settlement	No potential for impacts to areas of historic 19 th century settlement <ul style="list-style-type: none">No intrusion into 19th century settlement areas	No potential for impacts to areas of historic 19 th century settlement <ul style="list-style-type: none">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 <ul style="list-style-type: none">No cultural landscapes identified	No potential for impacts to cultural landscapes <ul style="list-style-type: none">No cultural landscapes identified
	3.1.5 First Nations’ Burial Sites	No potential for impacts to First Nations burial sites <ul style="list-style-type: none">No known / reported First Nation burial sites in the study area	No potential for impacts to First Nations burial sites <ul style="list-style-type: none">No known / reported First Nation burial sites in the study area
	3.1.6 Cemeteries	No potential for impacts to cemeteries <ul style="list-style-type: none">No known cemeteries impacted	No potential for impacts to cemeteries <ul style="list-style-type: none">No known cemeteries impacted
3.2 Cultural Heritage – Archaeology	3.2.1 Pre-Historic and Historic First Nations Sites	Low potential for destruction or disturbance of documented or undocumented archaeological sites <ul style="list-style-type: none">General concentration of registered archaeological sites in vicinity of existing roads (Highway 7&8 and intersecting roads)Limited potential for previously undocumented archaeological sites within new areas of right-of-way given lands are largely developed and heavily disturbed	Low potential for destruction or disturbance of documented or undocumented archaeological sites <ul style="list-style-type: none">General concentration of registered archaeological sites in vicinity of existing roads (Highway 7&8 and intersecting roads)Limited potential for previously undocumented archaeological sites within new areas of right-of-way given lands are largely developed and heavily disturbed
	3.2.2 Historic Euro-Canadian Archaeological Sites		
CULTURAL ENVIRONMENT SUMMARY		For both 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		
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	High potential to support efficient movement of people <ul style="list-style-type: none">Route utilizes existing roadway but good level of service achieved through the introduction of median separation and improved intersection treatments; no private entrancesDirect access to New Hamburg	High potential to support efficient movement of people <ul style="list-style-type: none">Route utilizes existing roadway but good level of service achieved through the introduction of median separation and interchanges / improved intersection treatments; no private entrancesDirect access to New Hamburg
	5.3 Efficient movement of goods	High potential to support efficient movement of goods <ul style="list-style-type: none">Route utilizes existing roadway but good level of service achieved through the introduction of median separation and improved intersection treatments; no private entrancesDirect access to New Hamburg	High potential to support efficient movement of goods <ul style="list-style-type: none">Route utilizes existing roadway but good level of service achieved through the introduction of median separation and improved intersection treatments; no private entrancesDirect access to New Hamburg
5.2 System reliability / redundancy		Low potential to support system reliability and redundancy <ul style="list-style-type: none">Route uses existing alignment, which does not provide an alternate route to accommodate travel during adverse conditions; however, parallel municipal roads could serve this function	Low potential to support system reliability and redundancy <ul style="list-style-type: none">Route uses existing alignment, which does not provide an alternate route to accommodate travel during adverse conditions; however, parallel municipal roads could serve this function

Highway 7&8 Transportation Corridor Planning and Class EA Study				
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SEGMENT G – West of Regional Road 1 to West of Nafziger Road				
Segment G Alternatives		Alternative G1 - Recommended	Alternative G2	
Cross Section		4-lanes with 6-lanes through Peel Street and 7m median	4-lanes throughout and 7m median	
Crossing Road Treatments		Regional Road 1 – Signalized Walker Road – Unsignalized (stop control on the crossing road) Peel Street – Signalized Victoria Street – Cul-de-sac Hamilton street – Signalized	Regional Road 1 – Signalized Walker Road – Unsignalized (right-in, right-out) Peel Street – Interchange Victoria Street – Cul-de-sac Hamilton street – Interchange	
Factor / Sub-Factor	Criteria			
5.3 Safety	5.3.1 Traffic Safety	Moderate potential to improve traffic safety <ul style="list-style-type: none"> Route uses existing roadway corridor however no direct access points associated with private entrances Four lane cross section provides for good passing opportunity Increased potential for collisions at Walker Road, Peel Street and Hamilton Street intersections as traffic volumes increase Cul-de-sac at Victoria Street eliminates turning movements to/from highway 	High potential to improve traffic safety <ul style="list-style-type: none"> Route uses existing roadway corridor however no direct access points associated with private entrances Four lane cross section provides for good passing opportunity Interchanges at Peel Street and Hamilton Street eliminate turning movements to/from highway Cul-de-sac at Victoria Street eliminates turning movements to/from highway Right-in/right-out configuration at Walker Road eliminates left turn movements to/from highway 	
	5.3.2 Emergency Access	High potential to support emergency access to/from route <ul style="list-style-type: none"> Full moves connection provided at RR1, Peel Street, Hamilton Street and Walker Road; ability to provide emergency access at Victoria Street intersections 	High potential to support emergency access to/from route <ul style="list-style-type: none"> Full moves connection provided at RR1, Peel Street and Hamilton Street; ability to provide emergency access at Walker Road and Victoria Street intersections 	
	5.3.3 Pedestrian, Cyclist and Snowmobile Safety within the highway right-of-way	Low potential to improve pedestrian, cyclist and snowmobile safety <ul style="list-style-type: none"> Cyclist movements within right-of-way not recommended due to freeway type environment but could be accommodated via improved shoulders Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersections or other designated crossings Wider intersection footprint for pedestrians to cross at Peel Street and Hamilton Drive intersections due to 6-lane cross section and left and right turn lanes at the intersections 	High potential to improve pedestrian, cyclist and snowmobile safety <ul style="list-style-type: none"> Cyclist movements within right-of-way not recommended due to freeway type environment but could be accommodated via improved shoulders Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at interchanges / intersections or other designated crossings Grade separations at Peel Street and Hamilton Street eliminate potential conflicts between highway traffic and pedestrians crossing at these locations 	
5.4 Mobility and Access	5.4.1 Modal integration, balance and efficiency	Moderate potential to improve modal integration, balance and efficiency <ul style="list-style-type: none"> Transit service supported by direct connection to New Hamburg and the development along Highway 7&8 Use of existing roadway would constrain transit travel performance 	Moderate potential to improve modal integration, balance and efficiency <ul style="list-style-type: none"> Transit service supported by direct connection to New Hamburg and the development along Highway 7&8 Use of existing roadway would constrain transit travel performance 	
	5.4.2 Linkages to Population and Employment Centres	High potential to improve linkages to population and employment centres <ul style="list-style-type: none"> Connection between Stratford area and New Hamburg improved 	High potential to improve linkages to population and employment centres <ul style="list-style-type: none"> Connection between Stratford area and New Hamburg improved 	
	5.4.3 Recreation and Tourism Travel	High potential to support recreation and tourism travel <ul style="list-style-type: none"> Direct route to New Hamburg, Shakespeare and Stratford 	High potential to support recreation and tourism travel <ul style="list-style-type: none"> Direct route to New Hamburg, Shakespeare and Stratford 	
	5.4.4 Accommodate mobility of pedestrians, cyclists and snowmobiles	Low potential to accommodate mobility of pedestrians, cyclists and snowmobiles <ul style="list-style-type: none"> Cyclist movements within right-of-way not recommended due to freeway type environment but could be accommodated via improved shoulders Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at intersections or other designated crossings Wider intersection footprint for pedestrians to cross at Peel Street and Hamilton Drive intersections due to 6-lane cross section and left and right turn lanes at the intersections 	High potential to accommodate mobility of pedestrians, cyclists and snowmobiles <ul style="list-style-type: none"> Pedestrian and cyclist movements within right-of-way not recommended due to freeway type environment but could be accommodated via improved shoulders Pedestrian, cyclist and snowmobile movements across right-of-way can be provided at interchanges / intersections or other designated crossings Grade separations at Peel Street and Hamilton Street eliminate potential conflicts between highway traffic and pedestrians crossing at these locations 	
5.5 Network Compatibility	5.5.1 Network Connectivity	High potential to improve transportation system connectivity <ul style="list-style-type: none"> Provides improved linkage between Stratford and New Hamburg 	High potential to improve transportation system connectivity <ul style="list-style-type: none"> Provides improved linkage between Stratford and New Hamburg 	
	5.5.2 Flexibility for Future Expansion	Moderate potential for future expansion <ul style="list-style-type: none"> Route uses existing alignment 	Moderate potential for future expansion <ul style="list-style-type: none"> Route uses existing alignment 	
5.6 Engineering	5.6.1 Constructability	Moderate potential for constructability issues <ul style="list-style-type: none"> Uses existing roadway corridor requiring more complex traffic staging during construction Requires expansion of Nith River Bridge 	High potential for constructability issues <ul style="list-style-type: none"> Uses existing roadway corridor requiring more complex traffic staging during construction Requires expansion of Nith River Bridge and an additional bridge crossing for WB off-ramp at Peel Street 	

Highway 7&8 Transportation Corridor Planning and Class EA Study			
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Factor / Sub-Factor	Criteria		
	5.6.2 Compliance with Design Criteria	High conformity to safety and design standards <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• Strict access control resulting in highway that functions safely and efficiently for its useful life• Highway Access Management Plan would be developed for managing entrances onto the corridor:<ul style="list-style-type: none">- 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 <ul style="list-style-type: none">• 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 <ul style="list-style-type: none">• Strict access control resulting in highway that functions safely and efficiently for its useful life• Highway Access Management Plan would be developed for managing entrances onto the corridor:<ul style="list-style-type: none">- 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 <ul style="list-style-type: none">• At-grade intersections retained at Peel Street, Hamilton Street and Walker Road; Victoria Street intersection eliminated• Peel Street predicted to be congested under future conditions even with proposed highway improvements• No private entrances	Low potential for negative impact on traffic operations <ul style="list-style-type: none">• Peel Street, Hamilton Street and Victoria Street at-grade intersections eliminated; interchanges provide all movements to/from Peel Street and Hamilton Street (key entry points to New Hamburg)• No private entrances
5.8 Construction Cost (excludes property costs and engineering costs)		Low Relative Cost \$14.5 M	High Relative Cost \$33.5 M
TRANSPORTATION SUMMARY		Alternative G2 is slightly preferred from a transportation perspective as it has higher potential to improve traffic safety and lower potential for negative impact on traffic operations relative to Alternative G1. However, it does have a significantly higher cost.	
RECOMMENDATION		Alternative G1 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 perspective, Alternative G1 is preferred as it results in the least direct impacts to: residential uses; commercial / industrial uses; community facilities and institutions and sensitive viewer groups. Alternative G1 also has the least indirect impacts on access and travel on Highway 7&8 and an area adjacent to it as it has fewest crossing roads where crossing road treatment introduces out-of-way travel. Alternative G2 is slightly preferred from a transportation perspective however it does have a significantly higher cost.	