

Appendix C – Alternative Methods Analyses

Table C-1: Alternative Landfill Design Evaluation – Criteria Screening, Indicators & Data Sources

Criteria		Relevant?	Indicator(s)	Data Source(s)
Public Health & Safety				
1	Explosive hazard due to combustible gas accumulation in confined spaces.	No significant differences between alternatives. Each design will have below-ground waste placement with similar subsurface gas barriers, monitoring, and gas collection systems.		
2	Effects due to exposure to air emissions.	No significant differences between alternatives. Each design will contain the same type, volume and age of waste and therefore produce the same quantity and quality of landfill gas.		
3	Effects due to fine particulate exposure.	Yes. The designs may produce different emissions of fine particulate matter due to the different heights and exposure of the construction activities above grade.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Preliminary design drawings.
4	Effects due to contact with contaminated groundwater or surface water.	No significant differences between the alternatives. Each design will contain the same type, volume and age of waste and therefore produce the same quantity and quality of leachate, and include the same liner system (MOECC Double Generic) to ensure that Reasonable Use Policy is met at the base of the liner.		
5	Flood hazard.	No significant differences between the alternatives. Each design is similar in size (surface area) and will have similar storm water management systems in place.		
6	Disease transmission <i>via</i> insects or vermin.	No significant differences between the alternatives. Each design will contain the same type, volume and age of waste and will use the same pest control procedures.		
7	Potential for traffic collisions.	No significant differences between the alternatives. Each design is in the same location and can use the same haul route(s) and site entrance.		
8	Aviation impacts due to bird interference.	No significant differences between the alternatives. Each design is in a similar location and at a similar distance from any airports.		
Social and Cultural				
9	Displacement of residents from houses.	Not applicable. Each of the designs is located on Carmeuse quarry property with no on-site residents.		
10	Disruption to use and enjoyment of residential properties.	Yes. The different heights and exposure of the construction activities above grade may result in more nuisance impacts at neighbouring residences.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Preliminary design estimates.

Criteria		Relevant?	Indicator(s)	Data Source(s)
11	Disruption to use and enjoyment of public facilities and institutions.	Yes. The different heights and exposure of the construction activities above grade may result in more nuisance impacts at any public facilities and institutions in the vicinity.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Preliminary design estimates.
12	Disruption to local traffic networks.	No significant differences between the alternatives. Each design is in a similar location and can use the same haul route(s) and site entrance.	--	--
13	Visual impact of the waste disposal facility.	Yes. Landfill designs with higher peak elevations are more visible in the surrounding area.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Preliminary design estimates.
14	Nuisance associated with vermin.	No significant differences between the alternatives. Each design will contain the same type, volume and age of waste and will use the same pest control procedures.	--	--
15	Displacement/disturbance of cultural/heritage resources.	Not applicable. Each of the design alternatives is located in an excavated quarry where there are no cultural resources to be displaced or physically disturbed.	--	--
16	Effects on land resources, traditional activities or other interests of Aboriginal Communities.	Not applicable. Each of the design alternatives is located in an excavated quarry where there are no known Aboriginal resources or traditional activities.	--	--
17	Displacement/destruction of archaeological resources.	Not applicable. Each of the design alternatives is located in an excavated quarry where there are no archaeological resources to be displaced or physically disturbed.	--	--
18	Level of public service provided by the waste disposal facility.	No significant differences between the alternatives. Each of the design alternatives will provide capacity for the same types, rate and total volume of waste.	--	--
19	Effects on other public services.	No significant differences between the alternatives. Each of the design alternatives will utilize or support the same public services.	--	--
20	Changes to community character/cohesion.	No significant differences between the alternatives. It is expected that community character/cohesion is related to the presence of a landfill in the community rather than any specific landfill design.	--	--
Economics				
21	Compatibility with municipal land use designations and official plans.	No significant differences between the alternatives. The current land use designations and zoning are the same for each of the design alternatives.	--	--

Criteria		Relevant?	Indicator(s)	Data Source(s)
22	Displacement/disruption of businesses or farms.	Not applicable. Each of the design alternatives is located in an excavated quarry where there are no businesses or farm operations to be displaced or physically disturbed (aside from Carmeuse, which will have completed its quarrying in advance).	--	--
23	Property value impacts.	Yes. Landfill designs with more visible and exposed operations may result in a greater potential for property value impacts.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Preliminary design estimates.
24	Direct employment in waste disposal facility construction and operation.	No significant differences between the alternatives. Approximately the same number of employees would be required for each of the design alternatives.	--	--
25	Indirect employment in related industries and services.	No significant differences between the alternatives. Approximately the same amount of indirect employment would be created for each of the design alternatives.	--	--
26	New business opportunities related directly to waste disposal facility construction and operation.	No significant differences between the alternatives. Approximately the same amount of new business opportunity would be created for each of the design alternatives.	--	--
27	New business opportunities in related industries and services.	No significant differences between the alternatives. Approximately the same amount of new business opportunity would be created for each of the design alternatives.	--	--
28	Public costs for indirect liabilities.	No significant differences between the alternatives. There are not expected to be any differences in public costs associated with the alternative designs since waste tonnages, construction and operations will generally be similar.	--	--
29	Effects on the municipal tax base.	No significant differences between the alternatives. Approximately the same amount of municipal tax revenue would be created for each of the design alternatives.	--	--
30	Effect on the cost of service to customers.	No significant differences between the alternatives. The construction and operating costs will be similar for each of the design alternatives; therefore, the cost to customers will also be similar.	--	--
Natural Environment & Resources				
31	Effects on the provincial/ federal tax base.	No significant differences between the alternatives. The construction and operating costs will be similar for each of the design alternatives; therefore, the federal/provincial tax base will also be similar.	--	--
32	Loss/displacement of surface water resources.	No significant differences between the alternatives. Each of the design alternatives is located in an active quarry with no natural surface water resources.	--	--

Criteria	Relevant?	Indicator(s)	Data Source(s)
33 Impact on the availability of groundwater supply to wells.	No significant differences between the alternatives. Groundwater tables will be controlled by ongoing quarry dewatering, which will be the same for all of the design alternatives.	--	--
34 Effects on stream baseflow quantity/quality.	No significant differences between the alternatives. Groundwater tables, and any related stream baseflow, will be controlled by ongoing quarry dewatering, which will be the same for all of the design alternatives.	--	--
35 Loss/disturbance of terrestrial ecosystems.	Not applicable. All of the design alternatives are located in the active quarry where no significant natural ecosystems are expected.	--	--
36 Loss/disturbance of aquatic ecosystems.	Not applicable. All of the design alternatives are located in the active quarry where no significant natural ecosystems are expected.	--	--
37 Displacement of agricultural land.	No significant differences between the alternatives during construction/operations; all of the design alternatives are located in the active quarry where no agricultural land will be displaced. After closure, the potential for rehabilitation to agriculture will be lower where the final cover slopes are steep.	<ul style="list-style-type: none"> Amount of the final landfill cover that would be at maximum slope (4:1)¹. 	<ul style="list-style-type: none"> Preliminary design estimates.
38 Disruption of farm operations.	Not applicable. All of the design alternatives are located in the active quarry where there are no farm operations.	--	--
39 Sterilization of industrial mineral resources.	Not applicable. All of the design alternatives are located in the active quarry where the economically feasible resources have already been removed.	--	--
40 Displacement of forestry resources.	No significant differences between the alternatives during construction/operations; all of the design alternatives are located in the active quarry where no forestry resources will be displaced. After closure, the potential for rehabilitation to forestry will similar ² .	--	--
41 Loss/disruption of recreational resources.	Not applicable. All of the design alternatives are located in the active quarry where there are no recreational resources.	--	--

¹ According to the Canada Land Inventory, maximum cover slopes of 4:1 (25%) under O. Reg. 232/98 are Class 7T (no capability for common field crops), while minimum cover slopes of 20:1 (5%) can be improved to Class 2T (only moderate limitations for common field crops). (source: OMAFRA).

² Forestry guidelines generally recommend up to 3:1 (33%) slopes; the maximum cover slope under O. Reg. 232/98 is 4:1 (25%). (source: A silvicultural guide to managing southern Ontario forests; Ministry of Natural Resources & Forestry)

Table C-2: Alternative Landfill Design Evaluation – Comparative Evaluation

Criteria		Indicator(s)	Deep Design Alternative	Conventional Design Alternative
Public Health & Safety				
3	Effects due to fine particulate exposure.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Peak working elevation approximately 15 m or less above surrounding ground surface. 	<ul style="list-style-type: none"> Peak working elevation greater than 20 m above surrounding ground surface.
Preferred Alternative – Public Health & Safety			<i>The lower height of the deep alternative will result in less wind exposure and lower risk of fine particulate emissions.</i>	
Social and Cultural				
10	Disruption to use and enjoyment of residential properties.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Peak working elevation approximately 15 m or less above surrounding ground surface. 	<ul style="list-style-type: none"> Peak working elevation greater than 20 m above surrounding ground surface.
11	Disruption to use and enjoyment of public facilities and institutions.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Peak working elevation approximately 15 m or less above surrounding ground surface. 	<ul style="list-style-type: none"> Peak working elevation greater than 20 m above surrounding ground surface.
13	Visual impact of the waste disposal facility.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Peak working elevation approximately 15 m or less above surrounding ground surface. 	<ul style="list-style-type: none"> Peak working elevation greater than 20 m above surrounding ground surface.
Preferred Alternative – Social & Cultural			<i>The lower height of the deep alternative will result in fewer operational nuisances experienced at surrounding residential properties, public facilities and institutions.</i>	
Economics				
23	Property value impacts.	<ul style="list-style-type: none"> Peak working elevation of the landfill. 	<ul style="list-style-type: none"> Peak working elevation approximately 15 m or less above surrounding ground surface. 	<ul style="list-style-type: none"> Peak working elevation greater than 20 m above surrounding ground surface.
Preferred Alternative – Economics			<i>The lower height of the deep alternative will result in fewer operational nuisances experienced at surrounding properties and lower risk of property value loss.</i>	

Criteria		Indicator(s)	Deep Design Alternative	Conventional Design Alternative
Natural Environment & Resources				
37	Displacement of agricultural land.	<ul style="list-style-type: none"> Amount of the final landfill cover that would be at maximum slope (4:1)³. 	<ul style="list-style-type: none"> None of the final landfill cover would be at maximum slope (4:1). 	<ul style="list-style-type: none"> Perimeter of the final landfill cover would be at maximum slope (4:1).
Preferred Alternative – Public Health & Safety			<i>The lower final cover slopes of the deep alternative will allow an opportunity for agricultural rehabilitation of the entire landfill.</i>	
Preferred Alternative - Overall			<i>The deep design is preferred in all four groups and overall. Its lower height and slopes will minimize visibility and exposure, thereby reducing potential off-site effects and allowing more opportunity for agricultural rehabilitation.</i>	

Key:

Net Advantages
Net Disadvantages

³ According to the Canada Land Inventory, maximum cover slopes of 4:1 (25%) under O. Reg 232/98 are Class 7T (no capability for common field crops), while minimum cover slopes of 20:1 (5%) can be improved to Class 2T (only moderate limitations for common field crops). (source: OMAFRA).

Table C-3: Alternative Haul Routes and Site Entrance Evaluation – Criteria Screening, Indicators & Data Sources

Criteria		Relevant?	Indicator(s)	Data Source(s)
Public Health & Safety				
1	Explosive hazard due to combustible gas accumulation in confined spaces.	Not applicable; haulage does not produce subsurface combustible gas	--	--
2	Effects due to exposure to air emissions.	Not applicable; haulage does not produce landfill gases.	--	--
3	Effects due to fine particulate exposure.	Yes. Assuming all haul routes are or will be paved prior to uses, dust may be generated from road shoulders or from mud tracked onto roads. The alternative haul routes will differ in terms of impacts depending on how many receptors (residences) are adjacent to each of the routes.	<ul style="list-style-type: none"> Number of residences along the different routes. 	<ul style="list-style-type: none"> Site inspection of each potential haul route
4	Effects due to contact with contaminated groundwater or surface water.	Not applicable; haulage does not produce or emit leachate.	--	--
5	Flood hazard.	No significant differences between the alternatives. All routes are on existing roads, or licenced future quarry lands that will be designed with engineered drainage controls.	--	--
6	Disease transmission <i>via</i> insects or vermin.	Not applicable; waste trucks are closed while in transit.	--	--
7	Potential for traffic collisions.	Yes. The alternative haul routes use different sections of public roads, so there may be related differences in the potential for traffic conflicts associated with each of the routes.	<ul style="list-style-type: none"> Length of the haul route on public roads Number of intersection crossings Number of truck turnings Number and type of railroad crossings 	<ul style="list-style-type: none"> Oxford County and aerial maps Site visit of each potential haul route
8	Aviation impacts due to bird interference.	Not applicable; waste trucks are closed while in transit.	--	--
Social and Cultural				
9	Displacement of residents from houses.	Not applicable. Each of the haul routes to be located on existing roads, or on licenced future quarry lands	--	--
10	Disruption to use and enjoyment of residential properties.	Yes. There is a potential for different degrees of disturbance to residences along the alternative haul routes due to the nuisance effects of truck traffic such as noise, dust, odour and traffic congestion	<ul style="list-style-type: none"> Number of residences along the haul routes Number of intersection crossings Number of truck turnings 	<ul style="list-style-type: none"> Site inspection of each potential haul route

Criteria		Relevant?	Indicator(s)	Data Source(s)
11	Disruption to use and enjoyment of public facilities and institutions.	Yes. There is a potential for different degrees of disturbance to public facilities and institutions along the haul routes due to the nuisance effects of truck traffic such as , noise, dust, odour and traffic congestion.	<ul style="list-style-type: none"> Number of community facilities and institutions along the haul routes. Number of intersection crossings Number of truck turnings 	<ul style="list-style-type: none"> Site inspection of each potential haul route
12	Disruption to local traffic networks.	Yes. Each of the haul route alternatives requires different stops and turning movements, which in turn may contribute to differences in local traffic congestion and delays.	<ul style="list-style-type: none"> Number of stops and turning movements associated with each route 	<ul style="list-style-type: none"> Site inspection of each potential haul route
13	Visual impact of the waste disposal facility.	Not applicable; choice of haul route will not affect the visibility of the landfill.	--	--
14	Nuisance associated with vermin.	Not applicable; waste trucks are closed while in transit.	--	--
15	Displacement/disturbance of cultural/heritage resources.	Not applicable. Each of the haul route alternatives is located on existing roads or on licenced future quarry lands.	--	--
16	Effects on land resources, traditional activities or other interests of Aboriginal Communities.	Not applicable. Each of the haul route alternatives is located on existing roads or licenced future quarry lands.where there are no known Aboriginal resources or traditional activities.	--	--
17	Displacement/destruction of archaeological resources.	Yes. Archeological resources could potentially be discovered on new or expanded roads.	<ul style="list-style-type: none"> Length of new or widening of both public and private roads. 	<ul style="list-style-type: none"> Maps and aerial photos
18	Level of public service provided by the waste disposal facility.	No significant differences between the alternatives. Each of the haul routes will deliver the same types, rate and total volume of waste.	--	--
19	Effects on other public services.	Yes. Heavy waste trucks have the potential to cause additional wear-and-tear on public roads, especially local roads not designed or intended as major trucking routes..	<ul style="list-style-type: none"> Length of each route on local road system (i.e.; other than Provincial, County, or private roads). 	<ul style="list-style-type: none"> County of Oxford Transportation Network Plan – County of Oxford Official Plan County road maps and aerial photos
20	Changes to community character/cohesion.	Yes. There is potential for changes to community character/cohesion for residences along the haul routes.	<ul style="list-style-type: none"> Number of residences along the different routes 	<ul style="list-style-type: none"> Site inspection of each potential haul route
21	Compatibility with municipal land use designations and official plans.	Yes. Existing roads may or may not be designated in municipal plans for heavy truck traffic. Also, the reconstruction and use of closed roads or unopened road allowances may require new land use or environmental approvals.	<ul style="list-style-type: none"> Provincial and municipal road designations for heavy truck traffic. Existing provincial and municipal land use designations for closed or unopened sections of road allowances 	<ul style="list-style-type: none"> County of Oxford Transportation Network Plan – County of Oxford Official Plan

Criteria		Relevant?	Indicator(s)	Data Source(s)
Economics				
22	Displacement/disruption of businesses or farms.	Yes. There is a potential for the different degrees of disturbances to business and farms along haul routes due to the nuisance effects of truck traffic such as noise, dust, odour and traffic congestion. Some types of businesses may be more sensitive to truck traffic.	<ul style="list-style-type: none"> Number and types of businesses and farms along the haul routes. 	<ul style="list-style-type: none"> Site inspection of each potential haul route
23	Property value impacts.	Yes. The landfill truck traffic may have different impacts on property values along the haul routes.	<ul style="list-style-type: none"> Number of properties adjacent to the haul routes. Number and types of businesses and farms along the haul routes. 	<ul style="list-style-type: none"> Site inspection of each potential haul route
24	Direct employment in waste disposal facility construction and operation.	No significant differences between the alternatives. Approximately the same number of employees would be required for each of the haul route alternatives.	--	--
25	Indirect employment in related industries and services.	No significant differences between the alternatives. Approximately the same amount of indirect employment would be created for each of the haul route alternatives.	--	--
26	New business opportunities related directly to waste disposal facility construction and operation.	No significant differences between the alternatives. Approximately the same amount of new business opportunity would be created for each of the haul route alternatives.	--	--
27	New business opportunities in related industries and services.	No significant differences between the alternatives. Approximately the same amount of new business opportunity would be created for each of the haul route alternatives.	--	--
28	Public costs for indirect liabilities.	Yes. Heavy waste trucks have the potential to require additional maintenance on public roads, especially local roads not designed or intended as major trucking routes.	<ul style="list-style-type: none"> Length of each route on local road system (i.e.; other than Provincial, County, or private roads). 	<ul style="list-style-type: none"> County of Oxford Transportation Network Plan – County of Oxford Official Plan County road maps and aerial photos
29	Effects on the municipal tax base.	Not applicable. Municipal taxes will not be based on haul route usage.	--	--
30	Effect on the cost of service to customers.	Yes. Haul routes that require major investment for heavy traffic use will add to the cost of the service to customers.	<ul style="list-style-type: none"> Relative cost of road reconstruction/upgrade for heavy truck traffic. 	<ul style="list-style-type: none"> Preliminary design estimates
31	Effects on the provincial/ federal tax base.	Not applicable. Provincial taxes will not be based on haul route usage.	--	--
Natural Environment & Resources				
32	Loss/displacement of surface water resources.	No significant differences between the alternatives; the haul route alternatives are located along existing roads or licenced future quarry lands where no natural surface water resources will be displaced.	--	--

Criteria		Relevant?	Indicator(s)	Data Source(s)
33	Impact on the availability of groundwater supply to wells.	Not applicable; haulage will not affect water well supplies.	--	--
34	Effects on stream baseflow quantity/quality.	Not applicable; haulage will not affect the groundwater baseflow to streams.	--	--
35	Loss/disturbance of terrestrial ecosystems.	No significant differences between the alternatives; the haul routes are located on existing roads or on licenced future quarry lands.	•	
36	Loss/disturbance of aquatic ecosystems.	No significant differences between the alternatives; the haul routes are located on existing roads or on licenced future quarry lands.	•	•
37	Displacement of agricultural land.	Not applicable. All of the haul route alternatives are located along existing roads or licenced future quarry lands		.
38	Disruption of farm operations.	Yes. Landfill trucks could interact with farm vehicles and field access along the haul route.	• Number of field entrances along the haul route.	• Site inspection of each potential haul route • Maps and aerial photos.
39	Sterilization of industrial mineral resources.	Not applicable. All of the haul route alternatives are located existing roads or licenced quarry lands that will be extracted after the haul route is needed.	--	--
40	Displacement of forestry resources.	No significant differences between the alternatives; the haul route alternatives are located along existing roads or licenced future quarry lands.	--	--
41	Loss/disruption of recreational resources.	Yes. The alternative haul routes use different sections of public and private land, so there may be related differences in the potential for disturbance to recreational resources along these sections.	• Number and proximity of recreational resources along the haul routes. • Number of playgrounds along haul route • Length of haul route coinciding with bike routes	• Site inspection of each potential haul route • County Oxford Official Plan

Table C-4: Haul Route and Site Entrance Evaluation – Comparative Evaluation

Criteria	Indicator(s)	Haul Route # 2	Haul Route # 3	Haul Route # 4	Haul Route #5	Haul Route # 6	
Public Health & Safety							
3	Effects due to fine particulate exposure.	<ul style="list-style-type: none"> Number of residences along the different routes. 	<ul style="list-style-type: none"> 0 residences along county Road # 6 	<ul style="list-style-type: none"> 0 residences along County Road # 6 	<ul style="list-style-type: none"> 91 adjacent residences along Beachville Road 21 adjacent residences along Pemberton Street 	<ul style="list-style-type: none"> 91 adjacent residences along Beachville Road 21 adjacent residences along Pemberton Street 	<ul style="list-style-type: none"> 91 adjacent residences along Beachville Road 21 adjacent residences along Pemberton Street
7	Potential for traffic collisions.	<ul style="list-style-type: none"> Length of the haul route on public roads Number of intersection crossings Number of truck turnings Number and type of railroad crossings 	<ul style="list-style-type: none"> Approximately 6.7 km of haul route on public roads One intersection crossing and two turns One signaled level rail crossing 	<ul style="list-style-type: none"> Approximately 4.4 km of haul route on public roads One intersection crossing One turn One signaled level rail crossing 	<ul style="list-style-type: none"> Approximately 9.7km of haul route on public roads One intersection crossing Five turns Two signaled level rail crossing 	<ul style="list-style-type: none"> Approximately 9.7 km of haul route on public roads One intersection crossing Three turns Two signaled level rail crossings 	<ul style="list-style-type: none"> Approximately 11.2 km of haul route on public roads Two intersection crossing Five turns Two signaled level rail crossings
Preferred Alternative – Public Health & Safety			Haul Route#3 alternative is the shortest haul route on public roads and the fewest adjacent residences along the route.				
Social and Cultural							
10	Disruption to use and enjoyment of residential properties.	<ul style="list-style-type: none"> Number of residences along the haul routes Number of intersection crossings Number of truck turnings 	<ul style="list-style-type: none"> 0 residences along county Road # 6 One intersection crossing Two turns 	<ul style="list-style-type: none"> 0 residences along county Road # 6 One intersection crossing One turn 	<ul style="list-style-type: none"> 91 adjacent residences along Beachville Road 21 adjacent residences along Pemberton Street One intersection 	<ul style="list-style-type: none"> 91 adjacent residences along Beachville Road 21 adjacent residences along Pemberton Street One intersection 	<ul style="list-style-type: none"> 91 adjacent residences along Beachville Road 21 adjacent residences along Pemberton Street Two intersection
11	Disruption to use and enjoyment of public facilities and institutions.	<ul style="list-style-type: none"> Number of community facilities and institutions along the haul routes. Number of intersection crossings Number of truck turnings 	<ul style="list-style-type: none"> None One intersection crossing Two turns 	<ul style="list-style-type: none"> None One intersection crossing Two turns 	<ul style="list-style-type: none"> Two institutions (Hi Way Pentecostal Church & Ingersoll Rural Cemetery) One intersection crossing 	<ul style="list-style-type: none"> One institution (Hi Way Pentecostal Church) One intersection crossing Three turns 	<ul style="list-style-type: none"> One institution (Hi Way Pentecostal Church) Two intersection crossing Five turns

Criteria		Indicator(s)	Haul Route # 2	Haul Route # 3	Haul Route # 4	Haul Route #5	Haul Route # 6
12	Disruption to local traffic networks.	Number of stops and turning movements associated with each route	<ul style="list-style-type: none"> Two turns Existing 4-way stop Existing 2-way stop 	<ul style="list-style-type: none"> One turn Existing 4-way stop 	<ul style="list-style-type: none"> Five turns Existing 4-way stop 4 existing 2-way stops Road construction 	<ul style="list-style-type: none"> Three turns Existing 4-way stop 4 existing 2-way stops Road construction 	<ul style="list-style-type: none"> Five turns Existing 4-way stop 4 existing 2-way stops Road construction
17	Displacement/destruction of archaeological resources	Length new or widening of both public and private roads	• Approximately 3 km	• Approximately 2 km	• Approximately 3 km	• Approximately 3 km	• Approximately 4.5 km
19	Effects on other public services	Length of each route on local road system (i.e.; other than	• 1.5 km	• 0 km	• 6.9 km	• 7 km	• 8.5 km
20	Changes to community character/cohesion.	Number of residences along the different routes	• 0 residences	• 0 residences	• 112 residences	• 112 residences	• 112 residences
21	Compatibility with municipal land use designations and official plans.	<ul style="list-style-type: none"> Provincial and municipal road designations for heavy truck traffic. Existing provincial and municipal land use 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic 	<ul style="list-style-type: none"> Currently compatible with heavy truck traffic. 0 km on local roads 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic
Preferred Alternative – Social & Cultural				Haul Route #3 alternative is designated for heavy truck traffic and has the fewest truck turns, intersection crossing, residences and institutions.			

Economics							
22	Displacement/disruption of businesses or farms.	• Number and types of businesses and farms along the haul routes..	<ul style="list-style-type: none"> One large heavy industry (Carmeuse operations) Two farms 	<ul style="list-style-type: none"> One large heavy industry (Carmeuse operations) 	<ul style="list-style-type: none"> 5 businesses (welding shop, mechanics shop, hydraulics shop, transport company) 6 farms 	<ul style="list-style-type: none"> 5 businesses (welding shop, mechanics shop, hydraulics shop, transport company) 6 farms 	<ul style="list-style-type: none"> 5 businesses (welding shop, mechanics shop, hydraulics shop, transport company) 9 farms
23	Property value impacts.	<ul style="list-style-type: none"> Number of properties adjacent to the haul routes. Number and types of businesses and farms along the haul routes. 	<ul style="list-style-type: none"> 0 residences Two farms One large heavy industry (Carmeuse operations) 	<ul style="list-style-type: none"> 0 residences One large heavy industry (Carmeuse operations) 	<ul style="list-style-type: none"> 112 residences 6 farms One institutional 5 businesses 	<ul style="list-style-type: none"> 112 residences 6 farms One institutional 5 businesses 	<ul style="list-style-type: none"> 112 residences 9 farms One institutional 5 businesses
28	Public costs for indirect liabilities.	• Length of each route on local road system (i.e.; other than Provincial, County, or private roads).	• 1.5 km	• 0 km	• 6.9 km	• 7 km	• 8.5 km

Criteria		Indicator(s)	Haul Route # 2	Haul Route # 3	Haul Route # 4	Haul Route #5	Haul Route # 6
30	Effect on the cost of service to customers.	<ul style="list-style-type: none"> Relative cost of road reconstruction/upgrade for heavy truck traffic. 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic 	<ul style="list-style-type: none"> No significant reconstruction or upgrading required. 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic 	<ul style="list-style-type: none"> Road reconstruction required to meet standards for heavy truck traffic
Preferred Alternative – Economics				Haul Route #3 alternative does not require any significant road reconstruction or upgrading, and the least potential to affect adjacent property values			

Natural Environment & Resources							
38	Disruption of farm operations.	<ul style="list-style-type: none"> Number of field entrances along the haul route. 	<ul style="list-style-type: none"> 8 field entrances 	<ul style="list-style-type: none"> One field entrances 	<ul style="list-style-type: none"> 5 field entrances 	<ul style="list-style-type: none"> 4 field entrances 	<ul style="list-style-type: none"> Three field entrances
41	Loss/disruption of recreational resources.	<ul style="list-style-type: none"> Number and proximity of recreational resources along the haul routes. Number of playgrounds along haul route Length of haul route coinciding with bike routes 	<ul style="list-style-type: none"> None known 	<ul style="list-style-type: none"> None known 	<ul style="list-style-type: none"> Beachville Road is a designated bicycle route 3.5 km 	<ul style="list-style-type: none"> Beachville Road is a designated bicycle route 3.5 km 	<ul style="list-style-type: none"> Beachville Road is a designated bicycle route 3.5 km
Preferred Alternative – Public Health & Safety				Haul Route #3 alternative has the fewest farm field entrances and no known adjacent recreational resources.			

Criteria	Indicator(s)	Haul Route # 2	Haul Route # 3	Haul Route # 4	Haul Route #5	Haul Route # 6
Preferred Alternative - Overall			<i>Haul Route # 3 alternative is preferred overall. It is the only alternative that is preferred in all four groups of criteria.</i>			

Key:

Net Advantages
Net Disadvantages