Comparative Evaluation of Net Effects and Ranking – Section S9

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
1.0 Natural Environment			
1.1 Fish and Fish Habitat			
1.1.1 Fish Habitat	Standard net effects to watercourses as outlined in the accompanying memo at the following: **11 watercourses impacted:** • 1 permanent, unconfirmed fish (permanent channel with water downstream, unable to confirm channel within alternative; contributing habitat for Redside Dace) • 6 intermittent, unconfirmed fish (all part of Purpleville Creek watershed which is classified as coldwater for all tributaries; contributing habitat for Redside Dace) • 4 ephemeral headwater features, no fish (contributing habitat for Redside Dace) Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, offsetting / enhancement measures; until confirmed, net effects remain the same as potential effects: • Crossing 11 watercourses identified as contributing habitat for Redside Dace • Potential realignment of one intermittent tributary (~560 m); length of realignment or number of crossings is dependent on design of interchange at Weston Road LOW NET EFFECT	Standard net effects to watercourses as outlined in the accompanying memo at the following: **11 watercourses impacted:** • 1 permanent, unconfirmed fish (permanent channel with water downstream, unable to confirm channel within alternative; contributing habitat for Redside Dace) • 6 intermittent, unconfirmed fish (coldwater; contributing habitat for Redside Dace) • 2 permanent online ponds with intermittent coldwater, unconfirmed fish • 2 ephemeral headwater features (contributing habitat for Redside Dace) Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, offsetting / enhancement measures; until confirmed, net effects remain the same as potential effects: • If shifting the highway alignment northerly at the location of the two waterbodies is not possible; than infilling could result in implications in maintaining flow • Crossing 11 watercourses identified as contributing habitat for Redside Dace • Potential realignment of an intermittent watercourse (~600m) at the proposed Weston Road interchange; length of realignment or number of crossings is dependent on design of interchange at Weston Road MODERATE NET EFFECT	Standard net effects to watercourses as outlined in the accompanying memo at the following: **10 watercourses impacted:** • 1 permanent, unconfirmed fish (contributing habitat for Redside Dace) • 7 intermittent, unconfirmed fish (coldwater; contributing habitat for Redside Dace) • 1 permanent online pond (at edge of alternative) with intermittent coldwater, unconfirmed fish (contributing habitat for Redside Dace) • 1 ephemeral headwater features contributing habitat for Redside Dace) : Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, offsetting / enhancement measures; until confirmed, net effects remain the same as potential effects: • Impacting long reaches of permanent watercourse (~885 m), potentially requiring realignment within terminus location at Highway 400 with moderately sensitive coolwater fish community and in close proximity (~400 m) downstream of occupied habitat for Redside Dace • Crossing 10 watercourses identified as contributing habitat for Redside Dace MODERATE NET EFFECT
	RANKING: 1st With the proximity of Purpleville Creek and the connectivity of the permanent and intermittent channels to this creek, the potential for fish utilization is high, however most potential crossings in this alternative are simple and perpendicular and it is likely crossings could be designed to minimize impacts to the watercourse and riparian functions.	**RANKING: 2nd** With the proximity of Purpleville Creek and the connectivity of the permanent and intermittent channels to this creek, the potential for fish utilization is high, and while most potential crossings in this alternative are simple and perpendicular, the alignment has one potentially large and complex crossing of a tributary confluence with two large online ponds	**RANKING: 3rd** With the proximity of Purpleville Creek and the connectivity of the permanent and intermittent channels to this creek, the potential for fish utilization is high. This alignment has the longest reach of channel contained within the alignment, potentially requiring realignment; consideration of those impacts may be significant.
1.1.2 Fish Community	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, offsetting / enhancement measures; until confirmed, net effects remain the same as potential effects: • No confirmed sensitive species present; all watercourses considered contributing habitat for Redside Dace	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, offsetting / enhancement measures; until confirmed, net effects remain the same as potential effects: • No confirmed sensitive species present; all watercourses considered contributing habitat for Redside Dace	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, offsetting / enhancement measures; until confirmed, net effects remain the same as potential effects: • No confirmed sensitive species present; all watercourses considered contributing habitat for Redside Dace

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
	LOW NET EFFECT	LOW NET EFFECT	LOW NET EFFECT
	RANKING: 1st All alternatives cross several intermittent and one permanent watercourse; all watercourses contributing to Redside Dace habitat downstream. Ranking is based on habitat.	**RANKING: 2nd** All alternatives cross several intermittent and one permanent watercourse; all watercourses contributing to Redside Dace habitat downstream. Ranking is based on habitat.	**RANKING: 3rd** All alternatives cross several intermittent and one permanent watercourse; all watercourses contributing to Redside Dace habitat downstream. The potential realignment activities for this alternative may have a greater impact on the fish community. Ranking is based on habitat.
1.2 Terrestrial Ecosystems			
1.2.1 Wildlife and Wildlife Habitat	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation/enhancement measures; until confirmed, net effects remain the same as potential effects. Net effects include: • Permanent loss of wildlife habitat including habitat for SAR and SCC, confirmed SWH and other areas for breeding and rearing of young (e.g. amphibian breeding habitat) • Reduction of wildlife habitat quality through indirect effects that cannot be fully mitigated including edge effects (e.g. increased light and noise and the introduction of pathways for invasive species) and increased potential for animal-vehicle collisions MODERATE NET EFFECT	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation/enhancement measures; until confirmed, net effects remain the same as potential effects. Net effects include: • Permanent loss of wildlife habitat including habitat for SAR and SCC, confirmed SWH and other areas for breeding and rearing of young (e.g. amphibian breeding habitat) • Reduction of wildlife habitat quality through indirect effects that cannot be fully mitigated including edge effects (e.g. increased light and noise and the introduction of pathways for invasive species) and increased potential for animal-vehicle collisions MODERATE NET EFFECT	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation/enhancement measures; until confirmed, net effects remain the same as potential effects. Net effects include: • Permanent loss of wildlife habitat including habitat for SAR and SCC, confirmed SWH and other areas for breeding and rearing of young (e.g. amphibian breeding habitat) • Reduction of wildlife habitat quality through indirect effects that cannot be fully mitigated including edge effects (e.g. increased light and noise and the introduction of pathways for invasive species) and increased potential for animal-vehicle collisions MODERATE NET EFFECT
	RANKING: 1st No substantial difference between the alternatives in terms of wildlife and wildlife habitat impacts.	**RANKING: 1st** No substantial difference between the alternatives in terms of wildlife and wildlife habitat impacts.	**RANKING: 1st** No substantial difference between the alternatives in terms of wildlife and wildlife habitat impacts.
1.2.2 Wetlands	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation/enhancement measures; until confirmed, net effects remain the same as potential effects. Net Effects include: • Removal of ~11.0 ha of wetland, of which ~6.1 ha is PSW • Reduction in wetland quality through Indirect effects that cannot be fully mitigated including edge effects (e.g. increased light, wind, road contaminants and the introduction of pathways for invasive species) and impacts to hydrologic and groundwater inputs that support these features MODERATE NET EFFECT	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation/enhancement measures; until confirmed, net effects remain the same as potential effects. Net Effects include: • Removal of ~7.8 ha of wetland, of which ~3.6 ha is PSW • Reduction in wetland quality through Indirect effects that cannot be fully mitigated including edge effects (e.g. increased light, wind, road contaminants and the introduction of pathways for invasive species) and impacts to hydrologic and groundwater inputs that support these features MODERATE NET EFFECT	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation/enhancement measures; until confirmed, net effects remain the same as potential effects. Net Effects include: • Removal of ~9.7 ha of wetland, of which ~3.1 ha is PSW • Reduction in wetland quality through Indirect effects that cannot be fully mitigated including edge effects (e.g. increased light, wind, road contaminants and the introduction of pathways for invasive species) and impacts to hydrologic and groundwater inputs that support these features MODERATE NET EFFECT
	RANKING: 3rd Greatest total area of wetland and PSW removal associated with this alternative.	**RANKING: 1st** Smallest total area of wetland removed (though a slightly higher amount of PSW removed than S9-3).	**RANKING: 2nd** Moderate amount of wetland removed (though a slightly lower mount of PSW removed than S9-2).

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
1.2.3 Woodlands and Vegetation	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation/enhancement measures; until confirmed, net effects remain the same as potential effects. Net Effects include: • Removal of ~27.2 ha of total upland and woodland communities. • The total above includes ~18.6 ha of meadow and cultural woodland, as well as ~8.6 ha of higher quality forest and treed swamp (including removal or substantial removal of three larger woodlands [HU-EU-64, HU-EH-86 and HU-EH-103]) • Reduction in vegetation community quality through Indirect effects that cannot be fully mitigated including effects from road contaminants (e.g. salt, heavy metals, sediment / debris), introduction of pathways for invasive species, edge / exposure impacts (e.g. canopy blow down) Vegetation communities within this alternative are generally small, scattered patches of deciduous forest, mixed forest, deciduous swamp, cultural meadow and cultural woodland. MODERATE NET EFFECT	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation/enhancement measures; until confirmed, net effects remain the same as potential effects. Net Effects include: • Removal of ~29.0 ha of upland and woodland communities • The total above includes ~18.0 ha of meadow and ~11.0 ha of higher quality forest and treed swamp (including removal or substantial removal of three larger woodlands [HU-EH-64, HU-EH-79 and HU-EH-103]) • Reduction in vegetation community quality through Indirect effects that cannot be fully mitigated including effects from road contaminants (e.g. salt, heavy metals, sediment / debris), introduction of pathways for invasive species, edge / exposure impacts (e.g. canopy blow down) Vegetation communities within this alternative are generally small, scattered patches of cultural meadow, deciduous forest, mixed forest, deciduous swamp. MODERATE NET EFFECT	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation/enhancement measures; until confirmed, net effects remain the same as potential effects. Net Effects include: • Removal of ~29.7 ha of upland and woodland communities. • The total above includes ~17.4 ha of meadow and ~12.3 ha of higher quality forest and treed swamp (including removal or substantial removal of four larger woodlands [HU-EH-64, HU-EH-79, HU-EH-101 and HU-EH-103]) • Reduction in vegetation community quality through Indirect effects that cannot be fully mitigated including effects from road contaminants (e.g. salt, heavy metals, sediment / debris), introduction of pathways for invasive species, edge / exposure impacts (e.g. canopy blow down) Vegetation communities within this alternative are generally small, scattered patches of cultural meadow, deciduous forest, mixed forest, deciduous swamp. MODERATE NET EFFECT
	RANKING: 1st Smallest total area of vegetation removal associated with this alternative, however, contains the largest and most complex vegetation feature in the section	**RANKING: 1st** Moderate amount of vegetation removal associated with this alternative	**RANKING: 1st** Greatest total area of vegetation removal associated with this alternative, however, large portions are of low quality
1.2.4 Designated/Special/ Natural Areas	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation/enhancement measures; until confirmed, net effects remain the same as potential effects. Net Effects include: • Removal of 47.9 ha of the Greenbelt lands Protected Countryside – Natural Heritage System • Removals within the York Region 'Greenlands System' and 'Core Features' within the City of Vaughan LOW NET EFFECT	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation/enhancement measures; until confirmed, net effects remain the same as potential effects. Net Effects include: • Removal of 54.4 ha of the Greenbelt lands Protected Countryside – Natural Heritage System • Removals within the York Region 'Greenlands System' and 'Core Features' within the City of Vaughan LOW NET EFFECT	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation/enhancement measures; until confirmed, net effects remain the same as potential effects. Net Effects include: • Removal of ~59.5 ha of the Greenbelt lands Protected Countryside – Natural Heritage System • Removals within the York Region 'Greenlands System' and 'Core Features' within the City of Vaughan LOW NET EFFECT
	RANKING: 1st Slightly less Greenbelt intrusion than other alternatives.	**RANKING: 2nd** Moderate level of Greenbelt intrusion, more similar to S9-3, slightly less than S9-1	**RANKING: 2nd** Similar level of Greenbelt intrusion as S9-2, slightly less than S9-1
1.3 Ecosystem Services	**Relative ES Value** • Agriculture: Low • Natural Cover: Low • Cumulative: Low	**Relative ES Value** • Agriculture: Low • Natural Cover: Moderate • Cumulative: Moderate	**Relative ES Value** • Agriculture: Low • Natural Cover: Low • Cumulative: Low

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
	ES Value Representation • Agriculture: 40% • Natural Cover: 60% LOW NET EFFECT	**ES Value Representation** • Agriculture: 30% • Natural Cover: 70% MODERATE NET EFFECT	**ES Value Representation** • Agriculture: 36% • Natural Cover: 64% LOW NET EFFECT
	RANKING: 1st Alternatives S9-1 and S9-3 have Low net effects using the Ecosystem Service (ES) Net Effects weighting. Differentiation between these alternatives is generated by examining the proportion of Natural Cover and relative contribution of Natural Cover ES value to total value. S9-1 has a lower value of Natural Cover contributing to total ES value making it slightly more preferred than S9-3 and the preferred in this Section.	**RANKING: 3rd** Alternative S9-2 has a Moderate net effect using the Ecosystem Service (ES) Net Effects weighting. This is higher than other alternatives in S9, making it the least preferred in this Section.	**RANKING: 2nd** Alternatives S9-1 and S9-3 have Low net effects using the Ecosystem Service (ES) Net Effects weighting. Differentiation between these alternatives is generated by examining the proportion of Natural Cover and relative contribution of Natural Cover ES value to total value. S9-3 has a higher value of Natural Cover contributing to total ES value making it slightly less preferred than S9-1 and the second preferred in this Section.
1.4 Groundwater			
1.4.1 Areas of Groundwater Recharge or Discharge	• Small loss of recharge due to footprint and small loss of discharge due to interception. LOW NET EFFECT	• Small loss of recharge due to footprint and small loss of discharge due to interception. LOW NET EFFECT	• Small loss of recharge due to footprint and small loss of discharge due to interception. LOW NET EFFECT
	RANKING: 1st Anticipated effects from each alternative are essentially the same.	**RANKING: 1st** Anticipated effects from each alternative are essentially the same.	**RANKING: 1st** Anticipated effects from each alternative are essentially the same.
1.4.2 Groundwater Source Areas and Wellhead Protection Areas	• There is no net effect on WHPAs NO NET EFFECT	• There is no net effect on WHPAs NO NET EFFECT	• There is no net effect on WHPAs NO NET EFFECT
	RANKING: 1st Alternative has no overlap with WHPA	**RANKING: 1st** Alternative has no overlap with WHPA	**RANKING: 1st** Alternative has no overlap with WHPA
1.4.3 Large Volume Wells	• No anticipated effects to large volume wells NO NET EFFECT	• No anticipated effects to large volume wells NO NET EFFECT	• No anticipated effects to large volume wells NO NET EFFECT
	RANKING: 1st Anticipated effects from each alternative are essentially the same.	**RANKING: 1st** Anticipated effects from each alternative are essentially the same.	**RANKING: 1st** Anticipated effects from each alternative are essentially the same.
1.4.4 Private Wells	• Potential reduction in water quality in at least 1 wells due to potential salt issue only, because wells are shallow • At least 21 wells are to be removed / decommissioned by alternative. LOW NET EFFECT	• Potential reduction in water quality in at least 1 wells due to potential salt issue only, because wells are shallow • At least 21 wells are to be removed / decommissioned by alternative. LOW NET EFFECT	• Potential reduction in water quality in at least 1wells due to potential salt issue only, because wells are shallow. • At least 17 wells are to be removed / decommissioned by alternative. LOW NET EFFECT
	RANKING: 1st Anticipated effects from each alternative are essentially the same.	**RANKING: 1st** Anticipated effects from each alternative are essentially the same.	**RANKING: 1st** Anticipated effects from each alternative are essentially the same.
1.4.5 Groundwater-Dependent Commercial Enterprises	• One commercial use and wells displaced. • 5 uses adjacent to the alternative potentially affected.	• One commercial use and wells displaced. • 5 uses adjacent to the alternative potentially affected.	• One commercial use and wells displaced. • 5 uses adjacent to the alternative potentially affected.

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
	LOW NET EFFECT	LOW NET EFFECT	LOW NET EFFECT
	RANKING: 1st Anticipated effects from each alternative are essentially the same.	**RANKING: 1st** Anticipated effects from each alternative are essentially the same.	**RANKING: 1st** Anticipated effects from each alternative are essentially the same.
1.4.6 Groundwater-Sensitive Ecosystems	• Low potential to affect sensitive ecosystems with wetland areas and at least 6 cool to coldwater streams within alternative / buffer zone that are somewhat dependent on groundwater. Some loss of discharge function anticipated LOW NET EFFECT	• Low potential to affect sensitive ecosystems with wetland areas and at least 6 cool to coldwater streams within alternative / buffer zone that are somewhat dependent on groundwater. Some loss of discharge function anticipated LOW NET EFFECT	• Low potential to affect sensitive ecosystems with wetland areas and at least 6 cool to coldwater streams within alternative / buffer zone that are somewhat dependent on groundwater. Some loss of discharge function anticipated LOW NET EFFECT
	RANKING: 1st Anticipated effects from each alternative are essentially the same.	**RANKING: 1st** Anticipated effects from each alternative are essentially the same.	**RANKING: 1st** Anticipated effects from each alternative are essentially the same.
1.5 Surface Water			
1.5.1 Watershed / Subwatershed Drainage Features / Patterns	• The only challenge for this alternative is the channel in proximity to the Weston Road partial interchange. • Weston Road partial interchange is on the Redside Dace contributing headwaters. MODERATE NET EFFECT	• The only challenge for this alternative is the channel in proximity to the Weston Road partial interchange. • Weston Road partial interchange is on the Redside Dace contributing headwaters. MODERATE NET EFFECT	• The only challenge for this alternative is the channel in proximity to the Weston Road partial interchange. • Weston Road partial interchange is on the Redside Dace contributing headwaters. MODERATE NET EFFECT
	RANKING: 2nd Comparatively larger number of stream crossings.	**RANKING: 3rd** Need to span streams at Weston Road interchange	**RANKING: 1st** Fewest watercourse crossings identified in fluvial geomorphology assessment.
1.5.2 Surface Water Quality and Quantity	• Introduce 56 ha impervious area to East Humber River. • Medium impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off. • Medium impacts on hydrology due to changes in ground permeability. • Low effects on modifications to surface drainage patterns and alterations of water bodies MODERATE NET EFFECT	• Introduce 57 ha impervious area to East Humber River. • Potential encroachment to two on-line ponds. • Medium impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off. • Medium impacts on hydrology due to changes in ground permeability. • Low effects on modifications to surface drainage patterns and alterations of water bodies MODERATE NET EFFECT	• Introduce 56 ha impervious area to East Humber River. • Medium impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off. • Medium impacts on hydrology due to changes in ground permeability. • Low effects on modifications to surface drainage patterns and alterations of water bodies MODERATE NET EFFECT
	RANKING: 1st Moderate net effect.	**RANKING: 3rd** Moderate net effect, but slightly larger impervious area and potential encroachment to existing storage area.	**RANKING: 1st** Moderate net effect.
1.6 Air Quality and Climate Change			
1.6.1 Local and regional air quality impacts; greenhouse gas emissions	• A few residences on Pine Valley Dr. and Weston Rd. are anticipated to be close enough to experience a change in air quality, but pollutants will be within acceptable levels.	• A few residences on Pine Valley Dr. and Weston Rd. are anticipated to be close enough to experience a change in air quality, but pollutants will be within acceptable levels.	• A few residences on Pine Valley Dr. and Kirby Rd. are anticipated to be close enough to experience a change in air quality, but pollutants will be within acceptable levels.

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
	LOW NET EFFECT	LOW NET EFFECT	LOW NET EFFECT
	RANKING: 3rd Slightly more affected residences than the other alternatives.	**RANKING: 1st** Small number of affected residences under any of the alternatives.	**RANKING: 1st** Small number of affected residences under any of the alternatives.
2.0 Land Use / Socio-Economic Environment			
2.1 Land Use Planning Policies, Goals, Objectives			
2.1.1 Indigenous Land Claims	Treaties including Nanfan (1701), Treaty 3 (1795), Treaty 3.75 (1795), Treaty 13 (1805), Treaty 13A (1805), Treaty 18, 1818, Treaty 19 (1918), Williams Treaty (1923), as well as various Assertions and Claims. • Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time. MODERATE NET EFFECT	Treaties including Nanfan (1701), Treaty 3 (1795), Treaty 3.75 (1795), Treaty 13 (1805), Treaty 13A (1805), Treaty 18, 1818, Treaty 19 (1918), Williams Treaty (1923), as well as various Assertions and Claims. • Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time. MODERATE NET EFFECT	Treaties including Nanfan (1701), Treaty 3 (1795), Treaty 3.75 (1795), Treaty 13 (1805), Treaty 13A (1805), Treaty 18, 1818, Treaty 19 (1918), Williams Treaty (1923), as well as various Assertions and Claims. • Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time. MODERATE NET EFFECT
	RANKING: 1st No difference between alternatives.	**RANKING: 1st** No difference between alternatives.	**RANKING: 1st** No difference between alternatives.
2.1.2 Provincial / Federal Land Use Planning Policies / Goals / Objectives	• Impacts PPS Agricultural and employment lands policies. • Impacts 67 hectares of Agricultural lands. • Impacts 68 hectares of designated Employment Area. • Impacts 48 hectares of Greenbelt lands Protected Countryside-Natural Heritage System. MODERATE NET EFFECT	• Impacts PPS Agricultural and employment lands policies. • Impacts 61 hectares of Agricultural lands. • Impacts 71 hectares of designated Employment Area. • Impacts 54 hectares of Greenbelt lands Protected Countryside-Natural Heritage System. MODERATE NET EFFECT	• Impacts PPS Agricultural and employment lands policies. • Impacts 61 hectares of Agricultural lands. • Impacts 65 hectares of designated Employment Area. • Impacts 59 hectares of Greenbelt lands Protected Countryside-Natural Heritage System. MODERATE NET EFFECT
	RANKING: 1st Impacts a low amount of Greenbelt lands and a moderate amount of Agricultural and employment lands.	**RANKING: 3rd** Impacts a moderate amount of Greenbelt and Agricultural lands and high amount of employment lands. Greatest impact on Agricultural System.	**RANKING: 1st** Impacts a moderate amount of Greenbelt, Agricultural and employment lands.
2.1.3 Municipal (local and regional) Land Use Planning Policies / Goals / Objectives	• Impacts 67 hectares of Agricultural lands. • Impacts 68 hectares of Highway 400 North Employment Area. • Impacts 1 hectare of rural area. • Impacts 71 hectares of future urban area. LOW NET EFFECT	• Impacts 61 hectares of Agricultural lands. • Impacts 71 hectares of Highway 400 North Employment Area. • Impacts 1 hectare of rural area. • Impacts 74 hectares of future urban area. • Impacts 1 hectare of environmental policy area. HIGH NET EFFECT	• Impacts 61 hectares of Agricultural lands. • Impacts 65 hectares of Highway 400 North Employment Area. • Impacts 1 hectare of rural area. • Impacts 76 hectares of future urban area. MODERATE NET EFFECT
	RANKING: 1st Impacts a moderate amount of Agricultural and employment and future urban area lands.	**RANKING: 3rd** Impacts a moderate amount of Agricultural lands and high amount of employment lands and future urban area lands and impacts a low amount of environmental policy area lands.	**RANKING: 2nd** Impacts a moderate amount of Agricultural and employment lands and a high amount of future urban area lands.
2.1.4 Development Objectives of Private Property Owners	• Likely interest to develop lands but no applications made because of the GTA West Study Area LOW NET EFFECT	• Likely interest to develop lands but no applications made because of the GTA West Study Area LOW NET EFFECT	• Likely interest to develop lands but no applications made because of the GTA West Study Area LOW NET EFFECT
	RANKING: 1st	**RANKING: 1st**	**RANKING: 1st**

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
	Impact to future potential development can be reduced by removing property from the FAA and compensating impacted landowners	Impact to future potential development can be reduced by removing property from the FAA and compensating impacted landowners	Impact to future potential development can be reduced by removing property from the FAA and compensating impacted landowners
2.2 Land Use – Community			
2.2.1 First Nation Reserves	• No reserves in study area. NO NET EFFECT	• No reserves in study area. NO NET EFFECT	• No reserves in study area. NO NET EFFECT
	RANKING: 1st No difference between alternatives.	**RANKING: 1st** No difference between alternatives.	**RANKING: 1st** No difference between alternatives.
2.2.2 Indigenous Sacred Areas	• No known or reported Indigenous Sacred Areas NO NET EFFECT	• No known or reported Indigenous Sacred Areas NO NET EFFECT	• No known or reported Indigenous Sacred Areas NO NET EFFECT
	RANKING: 1st No difference between alternatives.	**RANKING: 1st** No difference between alternatives.	**RANKING: 1st** No difference between alternatives.
2.2.3 Urban and Rural Residential Uses and Properties	• 3 residential properties impacted (5.8 hectares). LOW NET EFFECT	• 2 residential properties impacted (2.8 hectares). LOW NET EFFECT	• 5 residential properties impacted (3 hectares). MODERATE NET EFFECT
	RANKING: 1st Impacts the second fewest residential properties.	**RANKING: 1st** Impacts the fewest residential properties.	**RANKING: 3rd** Impacts the most residential properties.
2.2.4 Commercial/ Industrial Uses and Properties	• 4 commercial properties impacted: K.J. Beamish Construction Co. LTD (4.7 hectares), King City On Route (4.9 hectares), commercial property with residence (0.8 hectares) and Maple Ready Mix Cement Batching Plant (temp use 7.7 hectares). MODERATE NET EFFECT	• 4 commercial properties impacted: K.J. Beamish Construction Co. LTD (4.7 hectares), King City On Route (4.9 hectares), commercial property with residence (0.8 hectares) and Maple Ready Mix Cement Batching Plant (temp use 12.2 hectares). MODERATE NET EFFECT	• 4 commercial properties impacted: K.J. Beamish Construction Co. LTD (2.3 hectares), King City On Route (4.2 hectares), commercial property with residence (3.0 hectares) and Maple Ready Mix Cement Batching Plant (temp use 3.2 hectares). LOW NET EFFECT
	RANKING: 2nd Impacts the second lowest overall land area of the properties impacted.	**RANKING: 2nd** Impacts the highest overall land area of the properties impacted.	**RANKING: 1st** Impacts the lowest overall land area of the properties impacted.
2.2.5 Recreational Areas and Tourist Attractions	• No impacts. NO NET EFFECT	• No impacts. NO NET EFFECT	• No impacts. NO NET EFFECT
	RANKING: 1st No impacts.	**RANKING: 1st** No impacts.	**RANKING: 1st** No impacts.
2.2.6 Community Facilities / Institutions	• No impacts. NO NET EFFECT	• No impacts. NO NET EFFECT	• No impacts. NO NET EFFECT
	RANKING: 1st No impacts.	**RANKING: 1st** No impacts.	**RANKING: 1st** No impacts.
2.2.7 Municipal Infrastructure and Public Service Facilities	• No impacts. NO NET EFFECT	• No impacts. NO NET EFFECT	• No impacts. NO NET EFFECT
	RANKING: 1st No impacts.	**RANKING: 1st** No impacts.	**RANKING: 1st** No impacts.
2.3 Noise Sensitive Areas (NSA's)			

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 **Summary of Potential Net Effects and Ranking**	Alternative S9-3
2.3.1 Transportation Noise	• A few residences on Pine Valley Dr. and Weston Rd. are anticipated to be close enough to experience a significant increase in traffic noise, and several residences on King-Vaughan Rd. may also experience an increase in noise. MODERATE NET EFFECT	• A few residences on Pine Valley Dr. and Weston Rd. are anticipated to be close enough to experience a significant increase in traffic noise level. LOW NET EFFECT	• A few residences on Pine Valley Dr. and Kirby Rd. are anticipated to be close enough to experience a significant increase in traffic noise. LOW NET EFFECT
	RANKING: 3rd Largest number of affected residences	**RANKING: 1st** Similar number of affected residences compared to S9-3	**RANKING: 1st** Similar number of affected residences compared to S9-2
2.4 Land Use – Resources			
2.4.1 Indigenous Treaty Rights and Land Use Management	Treaties including Nanfan (1701), Treaty 3 (1795), Treaty 3.75 (1795), Treaty 13 (1805), Treaty 13A (1805), Treaty 18, 1818, Treaty 19 (1918), Williams Treaty (1923), as well as various Assertions and Claims. • Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time. MODERATE NET EFFECT	Treaties including Nanfan (1701), Treaty 3 (1795), Treaty 3.75 (1795), Treaty 13 (1805), Treaty 13A (1805), Treaty 18, 1818, Treaty 19 (1918), Williams Treaty (1923), as well as various Assertions and Claims. • Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time. MODERATE NET EFFECT	Treaties including Nanfan (1701), Treaty 3 (1795), Treaty 3.75 (1795), Treaty 13 (1805), Treaty 13A (1805), Treaty 18, 1818, Treaty 19 (1918), Williams Treaty (1923), as well as various Assertions and Claims. • Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time. MODERATE NET EFFECT
	RANKING: 1st No difference between alternatives.	**RANKING: 1st** No difference between alternatives.	**RANKING: 1st** No difference between alternatives.
2.4.2 Agriculture / Specialty Crop • Removal or sterilization of Class 1 – 3 agricultural lands • Specialty Crops/Cropland affected • Cropland affected • Livestock operations affected • Loss of agricultural buildings • Agricultural buildings within 50 m • Field crop operations affected • Farm properties greater than 20 ha affected	• Loss of 94.5 ha of Class 1 – 3 lands • No specialty cropland affected • Loss of 71.0 ha of common field crop cropland Loss of 15.2 ha of forage/pasture cropland • Two livestock operations affected (beef/goats/sheep, horse) (loss of land and buildings from the beef/goats/sheep operation, loss of buildings and land from the horse operation) • Loss of two small pole barns, farm residential units, large bank barn with two extensions, machine shed, shed, farm residential unit • No additional agricultural buildings within 50 m • Five crop operations affected • Five farm properties greater than 20 ha affected	• Loss of 90.3 ha of Class 1 – 3 lands • Loss of 14.2 ha of market garden • Loss of 59.7 ha of common field crop cropland Loss of 7.8 ha of forage/pasture cropland Loss of 2.5 ha of open field • Two livestock operations affected (beef/goats/sheep, horse) (loss of buildings and land for beef/goats/sheep operation, loss of land for horse operation) • Loss of five medium pole barns, silo, machine shed, forage storage structure, farm residential unit, large bank barn with two extensions, machine shed, shed, farm residential unit • No additional agricultural buildings within 50 m • Three field crop operation affected • Eight farm properties greater than 20 ha affected	• Loss of 85.2 ha of Class 1 – 3 lands • Loss of 5.3 ha of market garden • Loss of 73.4 ha of common field crop cropland • Two livestock operations affected (horse, unknown livestock) (loss of land for both operations) • No loss of agricultural buildings • Farm residential unit, 2 machine sheds, capped silo, 2 grain bins • Seven field crop operations affected • Nine farm properties greater than 20 ha affected

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
• Farm properties less than 20 ha affected • Severed parcels greater than 20 ha created • Severed parcels less than 20 ha created • Landlocked parcels created • High investment operations affected • Farm equipment transportation routes affected • Division of agricultural community areas • Loss of tile drainage	• Thirteen farm properties less than 20 ha affected • Four severed parcels greater than 20 ha created • Thirteen severed parcels less than 20 ha created • No landlocked parcel created • Two high investment operations affected (horse, beef/goats/sheep) (loss of buildings and land for horse operation, loss of land for beef/goats/sheep operation) • Pine Valley Drive and Weston Road are active farm travel corridors • No division of agricultural community areas • No loss of tile drainage HIGH NET EFFECT	• Thirteen farm properties less than 20 ha affected • Three severed parcels greater than 20 ha created • Sixteen severed parcels less than 20 ha created • Four landlocked parcels created • Two high investment operations affected (horse, beef/goats/sheep) (loss of land for horse operation, loss of land and buildings for beef/goats/sheep operation) • Pine Valley Drive and Weston Road are active farm travel corridors • No division of agricultural community areas • No loss of tile drainage HIGH NET EFFECT	• Thirteen farm properties less than 20 ha affected • Three severed parcels greater than 20 ha created • Fifteen severed parcels less than 20 ha created • Four landlocked parcels created • One high investment operation affected (horse) (loss of land only) • Pine Valley Drive and Weston Road are active farm travel corridors • No division of agricultural community areas • No loss of tile drainage MODERATE NET EFFECT
	RANKING: 2nd - Loss of 94.5 ha of Class 1 – 3 lands - Two livestock operations affected (beef/goats/sheep, horse) (loss of land from the beef/goats/sheep operation, loss of buildings and land from the horse operation) - Two high investment operations affected (horse, beef/goats/sheep) (loss of buildings and land for horse operation, loss of land for beef/goats/sheep operation)	**RANKING: 2nd** - Loss of 90.3 ha of Class 1 – 3 lands - Loss of 14.2 ha of market garden - Two livestock operations affected (beef/goats/sheep), horse) (loss of buildings and land for beef/goats/sheep operation, loss of land for horse operation) - Two high investment operations affected (horse, beef/goats/sheep) (loss of land for horse operation, loss of land and buildings for beef/goats/sheep operation)	**RANKING: 1st** - Loss of 85.2 ha of Class 1 – 3 lands - Loss of 5.3 ha of market garden - Two livestock operations affected (horse, unknown livestock) (loss of land for both operations) - Loss of small amount of land used for market garden - One high investment operation affected (horse) (loss of land only)
2.4.3 Recreation	• No impacts. NO NET EFFECT	• No impacts. NO NET EFFECT	• No impacts. NO NET EFFECT
	RANKING: 1st No impacts.	**RANKING: 1st** No impacts.	**RANKING: 1st** No impacts.
2.4.4 Aggregate and Mineral Resources	• No impacts. NO NET EFFECT	• No impacts. NO NET EFFECT	• No impacts. NO NET EFFECT
	RANKING: 1st No impacts.	**RANKING: 1st** No impacts.	**RANKING: 1st** No impacts.
2.5 Major Utility Transmission Corridors and Pipelines			
2.5.1 Major Existing Utility Transmission Corridors and Pipelines	• Alternative crosses 1 pipeline.	• Alternative crosses 1 pipeline.	• Alternative crosses 1 pipeline.

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
	LOW NET EFFECT	LOW NET EFFECT	LOW NET EFFECT
	RANKING: 1st All alternatives have 1 pipeline crossing. Impact can be mitigated through design refinements. Cost of mitigation in constructability and costs criteria.	**RANKING: 1st** All alternatives have 1 pipeline crossing. Impact can be mitigated through design refinements. Cost of mitigation in constructability and costs criteria.	**RANKING: 1st** All alternatives have 1 pipeline crossing. Impact can be mitigated through design refinements. Cost of mitigation in constructability and costs criteria.
2.5.2 Major Proposed Utility Transmission Corridors and Pipelines	• No impacts. NO NET EFFECT	• No impacts. NO NET EFFECT	• No impacts. NO NET EFFECT
	RANKING: 1st No impacts.	**RANKING: 1st** No impacts.	**RANKING: 1st** No impacts.
2.6 Contaminated Property and Waste Management	**Properties within alternative:** • One (1) waste disposal site at 4853 King Vaughan Road in Vaughan. A Certificate of Approval (C of A) was granted by the MECP on March 21, 2011; • One (1) gas station; • One (1) industrial property; • Two (2) commercial properties. **Properties within 250 m of alternative:** • One (1) private property with construction equipment storage. HIGH NET EFFECT	**Properties within alternative:** • One (1) waste disposal site at 4853 King Vaughan Road in Vaughan. A Certificate of Approval (C of A) was granted by the MECP on March 21, 2011 • One (1) gas station; • One (1) industrial property; • Three (3) commercial properties. **Properties within 250 m of alternative:** • One (1) private property with construction equipment storage. HIGH NET EFFECT	**Properties within alternative:** • One (1) Certificate of Approval (C of A) record for a waste management facility at 3840 Kirby Road in Vaughan. • One (1) gas station; • One (1) industrial property; • Three (3) commercial properties. **Properties within 250 m of alternative:** • One (1) private industrial property with illegal dumping. • One (1) private property with construction equipment storage. HIGH NET EFFECT
	RANKING: 1st One property of high concern to be directly impacted by the alternative (waste disposal site);; two (2) other properties of high concern to be directly impacted; and two (2) properties of medium concern to be directly impacted.	**RANKING: 1st** One property of high concern to be directly impacted by the alternative (waste disposal site); two (2) other properties of high concern to be directly impacted; three (3) properties of medium concern to be directly impacted; and one (1) property of medium concern to be indirectly impacted...	**RANKING: 1rd** One property of high concern to be directly impacted by the alternative (waste management facility); two (2) other properties of high concern to be directly impacted; three (3) properties of medium concern to be directly impacted; and one (1) property of high concern (illegal dumping) and one (1) medium concern to be indirectly impacted..
2.7 Landscape Composition			
2.7.1 Terrain	• Predominately flat topography. • Designated primarily agricultural, some Greenbelt Protected Countryside and some Designated Employment/Future Urban Area, similar across all alternatives. • Crosses 11 watercourses. • Interrupts 2 large linear Provincially Significant Wetlands (PSWs) and affects 6-7 smaller PSWs. MODERATE NET EFFECT	• Predominately flat topography. • Designated primarily agricultural, some Greenbelt Protected Countryside and some Designated Employment/Future Urban Area. • Crosses 11 watercourses. • Interrupts 1 large linear PSW and affects 5-6 smaller PSWs. • Small part of the alternative falls in the Wellhead Protection Area (WHPA) for Nashville. MODERATE NET EFFECT	• Predominately flat topography. • Designated primarily agricultural, some Greenbelt Protected Countryside and some Designated Employment/Future Urban Area. • Crosses 10 watercourses. • Affects 6-7 smaller PSWs. • Small part of the alternative falls in the Wellhead Protection Area (WHPA) for Nashville. MODERATE NET EFFECT
	RANKING: 3rd Highest effect on PSWs, largest area of wetland removal, similar in topographical changes and land use to other alternatives.	**RANKING: 2nd** Moderate effect on PSWs, least area of wetland removal, similar in topographical changes and land use to other alternatives.	**RANKING: 1st** Alternative S9-3 preferred as it has the lowest effect on PSWs, less area of wetland removal (but more than S9-2), and is similar in topographical changes and land use to other alternatives.

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
2.7.2 Vegetation	• Affects several medium to large PSWs and several smaller PSWs. • Affects 5 medium wooded areas and a few smaller woodlots. MODERATE NET EFFECT	• Affects 2-3 medium to large PSWs and several smaller PSWs. • Affects 3 medium wooded areas and a few smaller woodlots. MODERATE NET EFFECT	• Affects 1-2 medium to large PSWs and a few smaller PSWs. • Affects 3 medium wooded areas and a few smaller woodlots. MODERATE NET EFFECT
	RANKING: 3rd Highest effect on PSWs and wooded areas of alternatives.	**RANKING: 2nd** Moderate effect on PSWs and wooded areas.	**RANKING: 1st** Alternative S9-3 preferred as it has the lowest effect on PSWs and wooded areas of the alternatives.
2.7.3 Visual Impacts	• Receptor at Sisters of our Lady of Mount Carmel affected slightly more by this alternative than the other alternatives. • Receptor(s) to the south least affected by this alternative. • Low to moderate landscape absorptivity, highly visible due to flat topography and agricultural fields. LOW NET EFFECT	• Receptor at Sisters of our Lady of Mount Carmel affected slightly less by this alternative than S9-1 and slightly more than S9-3. • Receptors to the south likely affected by this alternative, but less that S9-3. • Low to moderate landscape absorptivity, highly visible due to flat topography and agricultural fields. LOW NET EFFECT	• Receptor at Sisters of our Lady of Mount Carmel affected slightly less by this alternative than S9-1 and S9-2. • Receptors to the south most affected by this alternative. • Low landscape absorptivity, highly visible due to flat topography and open agricultural fields. LOW NET EFFECT
	RANKING: 1st Alternative S9-1 preferred as it has the least effect on sensitive viewers to the south, similar landscape absorptivity and integration/compatibility with other alternatives.	**RANKING: 2nd** Moderate effect on receptors as compared to other two alternatives.	**RANKING: 3rd** Greatest effect on sensitive viewers to the south.
2.7.4 Aesthetics	• Alternative fairly well related to landscape. • Potential vistas of primarily agricultural lands, as well as some wooded areas and water courses. LOW NET EFFECT	• Alternative fairly well related to landscape. • Potential vistas of primarily agricultural lands, as well as some wooded areas and watercourses. LOW NET EFFECT	• Alternative fairly well related to landscape. • Potential vistas of primarily agricultural lands, as well as some wooded areas and water courses. LOW NET EFFECT
	RANKING: 1st Alternatives have a similar impact.	**RANKING: 1st** Alternatives have a similar impact.	**RANKING: 1st** Alternatives have a similar impact.
3.0 Cultural Environment			
3.1 Built Heritage and Cultural Heritage Landscapes			
3.1.1 Built Heritage Resources	• There are 2 listed BHRs (BHR 252 and BHR 257) affected by this alternative MODERATE NET EFFECT	• There is 1 listed BHR (BHR 257) affected by this alternative MODERATE NET EFFECT	• There is 1 designated (BHR 255) and 1 listed BHR (BHR 256) affected by this alternative HIGH NET EFFECT
	RANKING: 1st There are 2 listed BHRs affected by this alternative which will require further evaluation in order to determine their cultural heritage value and interest. Once cultural heritage value and interest has been determined, avoidance, protection and mitigation measures must be completed.	**RANKING: 1st** There is 1 listed BHR affected by this alternative which will require further evaluation in order to determine their cultural heritage value and interest. Once cultural heritage value and interest has been determined, avoidance, protection and mitigation measures must be completed.	**RANKING: 3rd** There is 1 designated and 1 listed BHR affected by this alternative which will require further evaluation in order to determine their cultural heritage value and interest. Once cultural heritage value and interest has been determined, avoidance, protection and mitigation measures must be completed.
3.1.2 Heritage Bridges	• There are no Heritage Bridges affected by this alternative. NO NET EFFECT	• There are no Heritage Bridges affected by this alternative. NO NET EFFECT	• There are no Heritage Bridges affected by this alternative. NO NET EFFECT
	RANKING: 1st	**RANKING: 1st**	**RANKING: 1st**

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
	There are no Heritage Bridges affected by this alternative	There are no Heritage Bridges affected by this alternative	There are no Heritage Bridges affected by this alternative
3.1.3 Cultural Heritage Landscapes	• There are no CHLs affected by this alternative. NO NET EFFECT	• There are no CHLs affected by this alternative. NO NET EFFECT	• There are no CHLs within this alternative. NO NET EFFECT
	RANKING: 1st There are no CHLs affected by this alternative	**RANKING: 1st** There are no CHLs affected by this alternative	**RANKING: 1st** There are no CHLs affected by this alternative
3.2 Archaeology			
3.2.1 Pre-Contact and Contact Indigenous Archaeological Sites	• 3 registered sites, and archaeological potential is present within much of this alternative. MODERATE NET EFFECT	• 3 registered sites, and archaeological potential is present within much of this alternative. MODERATE NET EFFECT	• 1 registered site, and archaeological potential is present within much of this alternative. MODERATE NET EFFECT
	RANKING: 1st 3 registered pre-contact and contact Indigenous sites are present within this alternative. This alternative contains 172 hectares of undisturbed land containing archaeological potential.	**RANKING: 1st** 3 registered pre-contact and contact Indigenous sites are present within this alternative. This alternative contains 174 hectares of undisturbed land containing archaeological potential.	**RANKING: 1st** 1 registered pre-contact and contact Indigenous sites are present within this alternative. This alternative contains 172 hectares of undisturbed land containing archaeological potential.
3.2.2 Historic Euro-Canadian Archaeological Sites	• No registered sites, although archaeological potential is present within much of this alternative LOW NET EFFECT	• No registered sites, although archaeological potential is present within much of this alternative LOW NET EFFECT	• No registered sites, although archaeological potential is present within much of this alternative LOW NET EFFECT
	RANKING: 1st No registered Historic Euro-Canadian Archaeological Sites are present within this alternative. This alternative contains 172 hectares of undisturbed land containing archaeological potential.	**RANKING: 1st** No registered Historic Euro-Canadian Archaeological Sites are present within this alternative. This alternative contains 174 hectares of undisturbed land containing archaeological potential.	**RANKING: 1st** No registered Historic Euro-Canadian Archaeological Sites are present within this alternative. This alternative contains 172 hectares of undisturbed land containing archaeological potential.
3.2.3 Indigenous Burial Sites	• No known or reported Indigenous Burial Sites NO NET EFFECT	• No known or reported Indigenous Burial Sites NO NET EFFECT	• No known or reported Indigenous Burial Sites NO NET EFFECT
	RANKING: 1st No difference between alternatives.	**RANKING: 1st** No difference between alternatives.	**RANKING: 1st** No difference between alternatives.
3.2.4 Cemeteries	• No registered cemeteries present within this alternative LOW NET EFFECT	• No registered cemeteries present within this alternative LOW NET EFFECT	• No registered cemeteries present within this alternative LOW NET EFFECT
	RANKING: 1st No registered cemeteries are present within this alternative. A total of 172 hectares of undisturbed land containing archaeological potential is found within this alternative.	**RANKING: 1st** No registered cemeteries are present within this alternative. A total of 174 hectares of undisturbed land containing archaeological potential is found within this alternative.	**RANKING: 1st** No registered cemeteries are present within this alternative. A total of 172 hectares of undisturbed land containing archaeological potential is found within this alternative.
4.0 Transportation			
4.1 System Capacity & Efficiency			
4.1.1 Movement of People	• 706,000 auto vehicle km • 2,937,000 auto vehicle km • 86% better than LOS D (80% in base without GTAW) • 68% better than LOS (80% in base without GTAW	• 706,000 auto vehicle km • 2,937,000 auto vehicle km • 86% better than LOS D (80% in base without GTAW) • 68% better than LOS (80% in base without GTAW	• 706,000 auto vehicle km • 2,937,000 auto vehicle km • 86% better than LOS D (80% in base without GTAW) • 68% better than LOS (80% in base without GTAW

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
	• Improves connections to existing and planned urban centres. • Improves connections to transitway from urban centres, mobility hubs, and other transit services. • Improved transportation options for travellers. • GTA West – 5.1 km MODERATE CAPACITY & EFFICIENCY	• Improves connections to existing and planned urban centres. • Improves connections to transitway from urban centres, mobility hubs, and other transit services. • Improved transportation options for travellers. • GTA West – 5.3 km MODERATE CAPACITY & EFFICIENCY	• Improves connections to existing and planned urban centres. • Improves connections to transitway from urban centres, mobility hubs, and other transit services. • Improved transportation options for travellers. • GTA West – 5.2 km MODERATE CAPACITY & EFFICIENCY
	RANKING: 1st All alternatives have similar people movements	**RANKING: 1st** All alternatives have similar people movements	**RANKING: 1st** All alternatives have similar people movements
4.1.2 Movement of Goods	• GTAW (West of Weston Rd) - 390 vehicles • 52,000 truck vehicle km • 255,000 truck vehicle km • 85% better than LOS D (80% in base without GTAW) • 69% better than LOS D (80% in base without GTAW) • Supports connections to existing and planned freight trip generators MODERATE CAPACITY & EFFICIENCY	• GTAW (West of Weston Rd) - 390 vehicles • 52,000 truck vehicle km • 255,000 truck vehicle km • 85% better than LOS D (80% in base without GTAW) • 69% better than LOS D (80% in base without GTAW) • Supports connections to existing and planned freight trip generators MODERATE CAPACITY & EFFICIENCY	• GTAW (West of Weston Rd) - 390 vehicles • 52,000 truck vehicle km • 255,000 truck vehicle km • 85% better than LOS D (80% in base without GTAW) • 69% better than LOS D (80% in base without GTAW) • Supports connections to existing and planned freight trip generators MODERATE CAPACITY & EFFICIENCY
	RANKING: 1st All alternatives have similar goods movements	**RANKING: 1st** All alternatives have similar goods movements	**RANKING: 1st** All alternatives have similar goods movements
4.1.3 System performance during peak periods	• South of King Rd - 0.94 • North of Teston Rd - 0.82 • West of Weston Rd - 0.74 • East of Weston Rd - 0.74 • GTAW (West of Hwy 400) – 0.67 • GTAW (West of Weston Rd) – 0.83 • Weston Road (South of King Rd) - 0.94 • Weston Road (North of Teston Rd) - 0.67 • Hwy 400 (South of King Rd) - 1.01 • Hwy 400 (North of Teston Rd) - 0.86 • Supports potential demand management strategies and travel demand supportive measures MODERATE CAPACITY & EFFICIENCY	• South of King Rd - 0.94 • North of Teston Rd - 0.82 • West of Weston Rd - 0.74 • East of Weston Rd - 0.74 • GTAW (West of Hwy 400) – 0.67 • GTAW (West of Weston Rd) – 0.83 • Weston Road (South of King Rd) - 0.94 • Weston Road (North of Teston Rd) - 0.67 • Hwy 400 (South of King Rd) - 1.01 • Hwy 400 (North of Teston Rd) - 0.86 • Supports potential demand management strategies and travel demand supportive measures MODERATE CAPACITY & EFFICIENCY	• South of King Rd - 0.94 • North of Teston Rd - 0.82 • West of Weston Rd - 0.74 • East of Weston Rd - 0.74 • GTAW (West of Hwy 400) – 0.67 • GTAW (West of Weston Rd) – 0.83 • Weston Road (South of King Rd) - 0.94 • Weston Road (North of Teston Rd) - 0.67 • Hwy 400 (South of King Rd) - 1.01 • Hwy 400 (North of Teston Rd) - 0.86 • Supports potential demand management strategies and travel demand supportive measures MODERATE CAPACITY & EFFICIENCY
	RANKING: 1st All alternatives have same performance during peak periods	**RANKING: 1st** All alternatives have same performance during peak periods	**RANKING: 1st** All alternatives have same performance during peak periods
4.2 System reliability / redundancy	• Good opportunity for redundancy on the local road network. HIGH RELIABILITY / REDUNDANCY	• Good opportunity for redundancy on the local road network. HIGH RELIABILITY / REDUNDANCY	• Good opportunity for redundancy on the local road network. HIGH RELIABILITY / REDUNDANCY
	RANKING: 1st All alternatives have similar reliability / redundancy	**RANKING: 1st** All alternatives have similar reliability / redundancy	**RANKING: 1st** All alternatives have similar reliability / redundancy

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
4.3 Safety			
4.3.1 Traffic Safety	• Good opportunity for traffic safety on the local road network. HIGH POTENTIAL FOR IMPROVEMENT	• Good opportunity for traffic safety on the local road network. HIGH POTENTIAL FOR IMPROVEMENT	• Good opportunity for traffic safety on the local road network. HIGH POTENTIAL FOR IMPROVEMENT
	RANKING: 1st All alternatives have similar improvements to traffic safety	**RANKING: 1st** All alternatives have similar improvements to traffic safety	**RANKING: 1st** All alternatives have similar improvements to traffic safety
4.3.2 Emergency Access	• High potential for improved access without reductions to existing access. HIGH ACCESS	• High potential for improved access without reductions to existing access. HIGH ACCESS	• High potential for improved access without reductions to existing access. HIGH ACCESS
	RANKING: 1st All alternatives have similar improvements to emergency access	**RANKING: 1st** All alternatives have similar improvements to emergency access	**RANKING: 1st** All alternatives have similar improvements to emergency access
4.4 Mobility & Accessibility			
4.4.1 Modal integration and balance	• Good opportunity for intermodal connections at transitway stations and carpool lots. HIGH POTENTIAL FOR IMPROVEMENT	• Good opportunity for intermodal connections at transitway stations and carpool lots. HIGH POTENTIAL FOR IMPROVEMENT	• Good opportunity for intermodal connections at transitway stations and carpool lots. HIGH POTENTIAL FOR IMPROVEMENT
	RANKING: 1st All alternatives provide similar modal integration	**RANKING: 1st** All alternatives provide similar modal integration	**RANKING: 1st** All alternatives provide similar modal integration
4.4.2 Linkages to Population and Employment Centres	• Improved access to future urban area. MODERATE ACCESSIBILITY	• Improved access to future urban area. MODERATE ACCESSIBILITY	• Improved access to future urban area. MODERATE ACCESSIBILITY
	RANKING: 1st All alternatives have similar linkages to population and employment centres	**RANKING: 1st** All alternatives have similar linkages to population and employment centres	**RANKING: 1st** All alternatives have similar linkages to population and employment centres
4.4.3 Recreation and Tourism Travel	• High support for inter-regional connections. HIGH SUPPORT	• High support for inter-regional connections. HIGH SUPPORT	• High support for inter-regional connections. HIGH SUPPORT
	RANKING: 1st All alternatives have similar connections to recreation and tourism sites	**RANKING: 1st** All alternatives have similar connections to recreation and tourism sites	**RANKING: 1st** All alternatives have similar connections to recreation and tourism sites
4.4.4 Accommodation for pedestrians, cyclists, snowmobiles, and specialized vehicles	• Maintains all existing roads crossing the future corridor HIGH ACCOMMODATION	• Maintains all existing roads crossing the future corridor HIGH ACCOMMODATION	• Maintains all existing roads crossing the future corridor HIGH ACCOMMODATION
	RANKING: 1st All alternatives have similar accommodations for pedestrians, cyclists, snowmobiles, and specialized vehicles	**RANKING: 1st** All alternatives have similar accommodations for pedestrians, cyclists, snowmobiles, and specialized vehicles	**RANKING: 1st** All alternatives have similar accommodations for pedestrians, cyclists, snowmobiles, and specialized vehicles
4.5 Network Compatibility			

Evaluation Factors and Sub-Factors	Alternative S9-1 – Preferred	Alternative S9-2 Summary of Potential Net Effects and Ranking	Alternative S9-3
4.5.1 Network connectivity	• High potential for improved connectivity to/from the Study Area HIGH CONNECTIVITY	• High potential for improved connectivity to/from the Study Area HIGH CONNECTIVITY	• High potential for improved connectivity to/from the Study Area HIGH CONNECTIVITY
	RANKING: 1st All alternatives have similar connectivity to local network	**RANKING: 1st** All alternatives have similar connectivity to local network	**RANKING: 1st** All alternatives have similar connectivity to local network
4.5.2 Flexibility for future expansion	• Opportunities to expand freeway and transitway within the proposed right-of-way HIGH FLEXIBILITY	• Opportunities to expand freeway and transitway within the proposed right-of-way HIGH FLEXIBILITY	• Opportunities to expand freeway and transitway within the proposed right-of-way HIGH FLEXIBILITY
	RANKING: 1st All alternatives have similar flexibility for future expansion	**RANKING: 1st** All alternatives have similar flexibility for future expansion	**RANKING: 1st** All alternatives have similar flexibility for future expansion
4.6 Engineering			
4.6.1 Constructability	• Minor constructability issues of typical freeway-to-freeway interchange LOW POTENTIAL FOR CONSTRUCTABILITY ISSUES	• Minor constructability issues of typical freeway-to-freeway interchange LOW POTENTIAL FOR CONSTRUCTABILITY ISSUES	• Moderate constructability issues of typical freeway-to-freeway interchange in proximity to arterial road crossing. MODERATE POTENTIAL FOR CONSTRUCTABILITY ISSUES
	RANKING: 1st Alternatives S9-1 and S9-2 have low potential for constructability issues	**RANKING: 1st** Alternatives S9-1 and S9-2 have low potential for constructability issues	**RANKING: 3nd** Alternative S9-3 has higher potential for constructability issues
4.6.2 Compliance with design criteria	• Conforms to design criteria HIGH CONFORMITY	• Conforms to design criteria HIGH CONFORMITY	• Conforms to design criteria HIGH CONFORMITY
	RANKING: 1st All alternatives comply with design criteria	**RANKING: 1st** All alternatives comply with design criteria	**RANKING: 1st** All alternatives comply with design criteria
4.7 Construction Cost	• Estimated Cost – $93 M dollars HIGH RELATIVE COST	• Estimated Cost – $94 M dollars HIGH RELATIVE COST	• Estimated Cost – $86 M dollars MODERATE RELATIVE COST
	RANKING: 2nd	**RANKING: 2nd**	**RANKING: 1st**
4.8 Traffic Operations	• Low potential of reduced traffic operations LOW POTENTIAL FOR NEGATIVE EFFECT	• Low potential of reduced traffic operations LOW POTENTIAL FOR NEGATIVE EFFECT	• Low potential of reduced traffic operations LOW POTENTIAL FOR NEGATIVE EFFECT
	RANKING: 1st All alternatives have similar effects on traffic operations	**RANKING: 1st** All alternatives have similar effects on traffic operations	**RANKING: 1st** All alternatives have similar effects on traffic operations