

Comparative Evaluation of Net Effects and Ranking – Section S4

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2	Alternative S4-3	Alternative S4-4
Summary of Potential Net Effects and Ranking				
1.0 Natural Environment				
1.1 Fish and Fish Habitat				
1.1.1 Fish Habitat	<p>Standard net effects to watercourses as outlined in the accompanying memo at the following:</p> <p>21 total potential water crossings:</p> <ul style="list-style-type: none"> • 1 intermittent, baitfish (coolwater) • 13 intermittent, unconfirmed fish • 7 ephemeral headwaters (no fish habitat) <p>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.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> • Potential for required realignment of Etobicoke Creek intermittent tributaries parallel to Chinguacousy Rd within the proposed interchange <p align="center">LOW NET EFFECT</p> <p align="center">RANKING: 1st</p> <p>While this alternative has many potential crossings, all are either intermittent or ephemeral systems where standard mitigation should eliminate or minimize long term impacts.</p>	<p>Standard net effects to watercourses as outlined in the accompanying memo at the following:</p> <p>21 total potential water crossings:</p> <ul style="list-style-type: none"> • 1 permanent, unconfirmed fish, coolwater • 11 intermittent, unconfirmed fish • 9 ephemeral headwaters (no fish habitat) <p>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.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> • Unable to avoid the negative effects of structures on groundwater patterns • Potential for required realignment of an Etobicoke Creek intermittent tributary parallel to Chinguacousy Rd within the proposed interchange <p align="center">MODERATE NET EFFECT</p> <p align="center">RANKING: 3rd</p> <p>This alternative has many potential crossings, including all but one permanent watercourse, while the remainder are intermittent or ephemeral systems. In addition, the presence of groundwater upwellings raises the sensitivity of this alternative.</p>	<p>Standard net effects to watercourses as outlined in the accompanying memo at the following:</p> <p>20 total potential water crossings:</p> <ul style="list-style-type: none"> • 2 permanent, baitfish, coolwater • 3 intermittent, baitfish, coolwater • 9 intermittent, unconfirmed fish • 6 ephemeral headwaters (no fish habitat) <p>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.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> • Unable to avoid the negative effects of structures on groundwater patterns • Potential required realignment of main stem of Etobicoke Creek including a 90-degree bend requiring natural channel design and realignment of an Etobicoke Creek intermittent tributary parallel to Chinguacousy Rd within the proposed interchange <p align="center">MODERATE NET EFFECT</p> <p align="center">RANKING: 4th</p> <p>This alternative has many potential water crossings, including two permanent watercourses, and it also includes the potential realignment of sections of natural, permanent creeks. Additionally, several groundwater upwellings were observed.</p>	<p>Standard net effects to watercourses as outlined in the accompanying memo at the following:</p> <p>20 total potential water crossings:</p> <ul style="list-style-type: none"> • 1 intermittent, baitfish (coolwater) • 13 intermittent, unconfirmed fish • 6 ephemeral headwaters (no fish habitat) <p>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.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> • Potential for required realignment of Etobicoke Creek intermittent tributaries parallel to Chinguacousy Rd within the proposed interchange <p align="center">LOW NET EFFECT</p> <p align="center">RANKING: 1st</p> <p>While this alternative has many potential crossings, all are either intermittent or ephemeral systems where standard mitigation should eliminate or minimize long term impacts.</p>
1.1.2 Fish Community	<p>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.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> • No known impacts to sensitive fish species or communities. <p align="center">LOW NET EFFECT</p> <p align="center">RANKING: 1st</p> <p>Limited fish community distribution dominated by warmwater species resilient to disturbance. Ranking is based on habitat.</p>	<p>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.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> • No known impacts to sensitive fish species or communities. <p align="center">LOW NET EFFECT</p> <p align="center">RANKING: 3rd</p> <p>Limited fish community distribution dominated by warmwater species resilient to disturbance. Ranking is based on habitat.</p>	<p>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.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> • No known impacts to sensitive fish species or communities. <p align="center">LOW NET EFFECT</p> <p align="center">RANKING: 4th</p> <p>Limited fish community distribution dominated by warmwater species resilient to disturbance. Ranking is based on habitat.</p>	<p>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.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> • No known impacts to sensitive fish species or communities. <p align="center">LOW NET EFFECT</p> <p align="center">RANKING: 1st</p> <p>Limited fish community distribution dominated by warmwater species resilient to disturbance. Ranking is based on habitat.</p>

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2	Alternative S4-3	Alternative S4-4
Summary of Potential Net Effects and Ranking				
1.2 Terrestrial Ecosystems				
1.2.1 Wildlife and Wildlife Habitat	<p>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. Large portions of isolated wildlife habitats will be removed.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> Major wildlife habitat features associated with this alternative consist of 6 isolated patches evenly spaced throughout the alternative Permanent loss of wildlife habitat including confirmed habitat for SAR and SCC and candidate SWH. Landscape level movement corridors are identified. Local movement may occur along riparian corridors. The landscape surrounding these features is agricultural and generally permeable to wildlife movement. Removals would represent ~19.7 ha loss of habitat with respect to patches affected by this alternative. 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. Removals would result in major removal, fragmentation and edge effects for all patches identified within the alternative. Loss of habitat would affect critical life stages through by removing habitat requirements (e.g. wetlands for amphibian breeding, forests for bat maternity colonies, etc.). <p style="text-align: center;">MODERATE NET EFFECT RANKING: 2nd</p> <p>All alternatives affect wildlife habitat. This alternative will result in a large area of wildlife habitat removal. This alternative will remove a large candidate animal movement corridor associated with Etobicoke Creek West Branch.</p>	<p>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. Large portions of isolated wildlife habitats will be removed.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> Major wildlife habitat features associated with this alternative consist of 8 isolated patches evenly spaced throughout the alternative. Permanent loss of wildlife habitat including confirmed habitat for SAR and SCC, large tracts of candidate SWH and other areas for breeding and rearing of young (e.g. amphibian breeding habitat) Landscape level movement corridors are identified. Local movement may occur along riparian corridors. The landscape surrounding these features is agricultural and generally permeable to wildlife movement. Removals would represent ~20.2 ha loss of habitat with respect to patches affected by this alternative 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 Removals would result in major removal, fragmentation and edge effects for all patches identified within the alternative. Loss of habitat would affect critical life stages through by removing habitat requirements (e.g. wetlands for amphibian breeding, forests for bat maternity colonies, etc.). <p style="text-align: center;">MODERATE NET EFFECT RANKING: 3rd</p> <p>All alternatives affect wildlife habitat. This alternative will result in the least amount of habitat removal.</p>	<p>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. Large portions of isolated wildlife habitats will be removed.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> Major wildlife habitat features associated with this alternative consist of 8 isolated patches evenly spaced throughout the alternative. Permanent loss of wildlife habitat including confirmed habitat for SAR and SCC, large tracts of candidate SWH and other areas for breeding and rearing of young (e.g. amphibian breeding habitat) Landscape level movement corridors are identified. Local movement may occur along riparian corridors. The landscape surrounding these features is agricultural and generally permeable to wildlife movement. Removals would represent ~28.1 ha loss of habitat with respect to patches affected by this alternative. 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 Removals would result in major removal, fragmentation and edge effects for all patches identified within the alternative. Loss of habitat would affect critical life stages through by removing habitat requirements (e.g. wetlands for amphibian breeding, forests for bat maternity colonies, etc.). <p style="text-align: center;">HIGH NET EFFECT RANKING: 4th</p> <p>All alternatives affect wildlife habitat. This alternative will result in the largest area of wildlife habitat including the candidate animal movement corridor and swamp and deciduous forest.</p>	<p>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. Large portions of isolated wildlife habitats will be removed.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> Major wildlife habitat features associated with this alternative consist of 8 isolated patches evenly spaced throughout the alternative. Permanent loss of wildlife habitat including confirmed habitat for SAR and SCC, large tracts of candidate SWH and other areas for breeding and rearing of young (e.g. amphibian breeding habitat) Landscape level movement corridors are identified. Local movement may occur along riparian corridors. The landscape surrounding these features is agricultural and generally permeable to wildlife movement. Removals would represent ~18.2 ha loss of habitat with respect to patches affected by this alternative. 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. Removals would result in major removal, fragmentation and edge effects for all patches identified within the alternative. Loss of habitat would affect critical life stages through by removing habitat requirements (e.g. wetlands for amphibian breeding, forests for bat maternity colonies, etc.). <p style="text-align: center;">MODERATE NET EFFECT RANKING: 1st</p> <p>All alternatives affect wildlife habitat. This alternative will result habitat removal greater than that of S4-2.</p>
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	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation / enhancement measures; until confirmed, net effects remain the	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation / enhancement measures; until confirmed, net effects remain the	Net effects associated with the alternative are dependent on the ability to implement avoidance, mitigation, compensation / enhancement measures; until confirmed, net effects remain the

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2 Summary of Potential Net Effects and Ranking	Alternative S4-3	Alternative S4-4
	<p>same as potential effects. Large portions of small existing communities will be removed.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> 1 PSW and 1 unevaluated wetland are affected by this alternative Removal of ~7.9 ha of wetland. 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 <p>The majority of adjacent lands affected include agricultural lands with little buffer functionality. However, adjacent land that provide buffer function when present are proposed for removal</p>	<p>same as potential effects. Large portions of existing unevaluated communities will be removed.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> 1 PSW and 1 LSW are affected by this alternative Removal of ~11.4 ha of wetland Significant removals to several larger, more contiguous wetlands communities throughout the section. Wetland features within the alternative are associated with moderately large isolated patches, made up of swamp, marsh and open water communities. 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 <p>The majority of adjacent lands affected include agricultural lands with little buffer functionality. However, adjacent land that provide buffer function when present are proposed for removal.</p>	<p>same as potential effects. Large portions of existing unevaluated communities will be removed.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> 1 PSW, 1 LSW and 1 unevaluated wetland are affected by this alternative including ~13.3 ha Wetland features within the alternative are associated with moderately large isolated patches, made up of deciduous swamp, thicket swamp, marsh and open water communities. 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 <p>The majority of adjacent lands affected include agricultural lands with little buffer functionality. However, adjacent land that provide buffer function when present are proposed for removal.</p>	<p>same as potential effects. Large portions of existing unevaluated communities will be removed.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> 1 PSW, 1 LSW and 1 unevaluated wetland are affected by this alternative including removal of ~7.5 ha Wetland features within the alternative are associated with moderately large isolated patches, made up of deciduous swamp, thicket swamp, marsh and open water communities. 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 <p>The majority of adjacent lands affected include agricultural lands with little buffer functionality. However, adjacent land that provide buffer function when present are proposed for removal.</p>
	<p>MODERATE NET EFFECT</p> <p>RANKING: 1st</p>	<p>HIGH NET EFFECT</p> <p>RANKING: 3rd</p>	<p>HIGH NET EFFECT</p> <p>RANKING: 4th</p>	<p>MODERATE NET EFFECT</p> <p>RANKING: 2nd</p>
1.2.3 Woodlands and Vegetation	<p>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. Woodland features will be affected. Opportunities for reducing net effects are limited.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> Removal of ~16.3 ha of vegetation communities including deciduous forest, and cultural plantation Five potentially significant woodlands (~16.3 ha) are affected by this alternative. No interior woodland habitat is impacted by this alternative. No significant valley lands are affected by this alternative. 	<p>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. Woodland features will be affected. Opportunities for reducing net effects are limited.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> Removal of ~ 16.4 ha of vegetation communities including forest, meadow and plantation Six potentially significant woodlands (~14.6 ha) are affected by this alternative. One interior woodland habitat is affected by this alternative. No significant valley lands are affected by this alternative. 	<p>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. Woodland features will be affected. Opportunities for reducing net effects are limited.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> Removal of ~24.3 ha of vegetation communities including forest and plantation. Four potentially significant woodlands (~22.1 ha) are affected by this alternative. Two interior woodland habitats are impacted by this alternative. No significant valley lands are affected by this alternative. 	<p>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. Woodland features will be affected. Opportunities for reducing net effects are limited.</p> <p>Net effects include:</p> <ul style="list-style-type: none"> Removal of ~14.8 ha of vegetation communities including forest and plantation. Six potentially significant woodlands (~14.8 ha) are affected by this alternative. Two interior woodland habitats are impacted by this alternative. No significant valley lands are affected by this alternative.

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2	Alternative S4-3	Alternative S4-4
Summary of Potential Net Effects and Ranking				
	<ul style="list-style-type: none"> 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) <p style="text-align: center;">MODERATE NET EFFECT</p>	<ul style="list-style-type: none"> 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) <p style="text-align: center;">MODERATE NET EFFECT</p>	<ul style="list-style-type: none"> 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) <p style="text-align: center;">HIGH NET EFFECT</p>	<ul style="list-style-type: none"> 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) <p style="text-align: center;">MODERATE NET EFFECT</p>
	<p style="text-align: center;">RANKING: 2nd</p> <p>All alternatives will result in the removal of woodland and other vegetation communities. This alternative will require less woodland and other vegetation removal than S4-3.</p>	<p style="text-align: center;">RANKING: 2nd</p> <p>All alternatives will result in the removal of woodland and other vegetation communities. This alternative will require less woodland and other vegetation removal than alternative S4-3.</p>	<p style="text-align: center;">RANKING: 4th</p> <p>All alternatives will result in the removal of woodland and other vegetation communities. This alternative will require the greatest area of removal of woodland and other vegetation communities.</p>	<p style="text-align: center;">RANKING: 1st</p> <p>All alternatives will result in the removal of woodland and other vegetation communities. This alternative will result in the least amount of woodland and other vegetation removal.</p>
1.2.4 Designated/Special/ Natural Areas	<p>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.</p> <ul style="list-style-type: none"> There are no ESAs, ESPAs, ANSI or other designated areas within this alternative. There are no national or provincial parks within this alternative. There are no Conservation Authority lands within this alternative. ~1.14 km (~31 ha) of this alternative is within the Greenbelt Plan lands Protected Countryside (~27 ha of Natural Heritage System). Region of Peel Official Plan Designations - Intersects with 'Core Areas of Greenlands System' at two locations: partial removal of one woodlot and edge removal for the other. Town of Caledon Official Plan (Schedule A - Land Use Plan) - Intersects with Environmental Policy Areas at four locations, including fragmentation of four minor riparian zones. Town of Caledon Official Plan (Schedule B – Mayfield West Land Use Plan) - Intersects with Environmental Policy Areas at two locations, including fragmentation of two minor riparian zones <p style="text-align: center;">MODERATE NET EFFECT</p>	<p>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.</p> <ul style="list-style-type: none"> There are no ESAs, ESPAs, ANSI or other designated areas within this alternative. There are no national or provincial parks within this alternative. There are no Conservation Authority lands within this alternative. ~2.31 km (~75 ha) of this alternative is within the Greenbelt Plan lands Protected Countryside (~13 ha of Natural Heritage System). Region of Peel Official Plan Designations - Intersects with 'Core Areas of Greenlands System' at one location: partial removal of one woodlot Town of Caledon Official Plan (Schedule A – Land Use Plan) - Intersects with Environmental Policy Areas at seven locations, including fragmentation of seven minor riparian zones. <p style="text-align: center;">HIGH NET EFFECT</p>	<p>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.</p> <ul style="list-style-type: none"> There are no ESAs, ESPAs, ANSI or other designated areas within this alternative. There are no national or provincial parks within this alternative. There are no Conservation Authority lands within this alternative. ~1.02 (~26 ha) of this alternative is within the Greenbelt Plan lands Protected Countryside – Natural Heritage System. Region of Peel Official Plan Designations - Intersects with 'Core Areas of Greenlands System' at two locations: partial removal of one woodlot and significant removal of one woodlot. Town of Caledon Official Plan (Schedule A - Land Use Plan) - Intersects with Environmental Policy Areas at three locations, including fragmentation of three minor riparian zones. Town of Caledon Official Plan (Schedule B – Mayfield West Land Use Plan) - Intersects with Environmental Policy Areas at three locations, including fragmentation of three minor riparian zones <p style="text-align: center;">MODERATE NET EFFECT</p>	<p>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.</p> <ul style="list-style-type: none"> There are no ESAs, ESPAs, ANSI or other designated areas within this alternative. There are no national or provincial parks within this alternative. There are no Conservation Authority lands within this alternative. ~1.14 km (~32 ha) of this alternative is within the Greenbelt Plan lands Protected Countryside (27 ha of Natural Heritage System). Region of Peel Official Plan Designations - Intersects with 'Core Areas of Greenlands System' at two locations: partial removal for two woodlots Town of Caledon Official Plan (Schedule A - Land Use Plan) - Intersects with Environmental Policy Areas at four locations, including fragmentation of four minor riparian zones Town of Caledon Official Plan (Schedule B – Mayfield West Land Use Plan) - Intersects with Environmental Policy Areas at two locations, including fragmentation of two minor riparian zones <p style="text-align: center;">MODERATE NET EFFECT</p>
	<p style="text-align: center;">RANKING: 1st</p>	<p style="text-align: center;">RANKING: 4th</p>	<p style="text-align: center;">RANKING: 3rd</p>	<p style="text-align: center;">RANKING: 1st</p>

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2	Alternative S4-3	Alternative S4-4
	All alternatives have the potential to affect designated features such as Greenbelt, Greenlands and EPAs. This alternative will result in the lesser area of these features removal.	All alternatives have the potential to affect designated features such as Greenbelt, Greenlands and EPAs. This alternative will result in the greatest area of these features removal.	All alternatives have the potential to affect designated features such as Greenbelt, Greenlands and EPAs. This alternative will result in the greater area of these features removal.	All alternatives have the potential to affect designated features such as Greenbelt, Greenlands and EPAs. This alternative will result in the lesser area of these features removal.
1.3 Ecosystem Services	<p>Relative ES Value</p> <ul style="list-style-type: none"> Agriculture: Moderate Natural Cover: Moderate Cumulative: Moderate <p>ES Value Representation</p> <ul style="list-style-type: none"> Agriculture: 36% Natural Cover: 64% <p>MODERATE NET EFFECT</p> <p>RANKING: 1st</p>	<p>Relative ES Value</p> <ul style="list-style-type: none"> Agriculture: High Natural Cover: Moderate Cumulative: Moderate <p>ES Value Representation</p> <ul style="list-style-type: none"> Agriculture: 37% Natural Cover: 63% <p>MODERATE NET EFFECT</p> <p>RANKING: 4th</p>	<p>Relative ES Value</p> <ul style="list-style-type: none"> Agriculture: Moderate Natural Cover: Moderate Cumulative: Moderate <p>ES Value Representation</p> <ul style="list-style-type: none"> Agriculture: 23% Natural Cover: 77% <p>MODERATE NET EFFECT</p> <p>RANKING: 3rd</p>	<p>Relative ES Value</p> <ul style="list-style-type: none"> Agriculture: Moderate Natural Cover: Moderate Cumulative: Moderate <p>ES Value Representation</p> <ul style="list-style-type: none"> Agriculture: 31% Natural Cover: 69% <p>MODERATE NET EFFECT</p> <p>RANKING: 2nd</p>
	<p>All alternatives in S4 have moderate net effects using the Ecosystem Service (ES) Net Effects weighting. Differentiation between alternatives is generated by examining the land cover Relative ES Value impacts and the proportion of Natural Cover contribution to total ES value.</p> <p>S4-1, S4-3 and S4-4 all have Moderate Land Cover ES impacts. Variation exists in the relative contribution of Natural Cover to total ES value. S4-1 has the lowest impact of these three alternatives to natural cover, making it the preferred alternative in S4.</p>	<p>All alternatives in S4 have moderate net effects using the Ecosystem Service (ES) Net Effects weighting. Differentiation between alternatives is generated by examining the land cover Relative ES Value impacts and the proportion of Natural Cover contribution to total ES value.</p> <p>S4-2 has a High Land Cover ES impact for Agriculture. No other alternative in S4 has a high land cover ES impact, making this the least preferred alternative in S4.</p>	<p>All alternatives in S4 have moderate net effects using the Ecosystem Service (ES) Net Effects weighting. Differentiation between alternatives is generated by examining the land cover Relative ES Value impacts and the proportion of Natural Cover contribution to total ES value.</p> <p>S4-1, S4-3 and S4-4 all have Moderate Land Cover ES impacts. Variation exists in the relative contribution of Natural Cover to total ES value. S4-3 has the highest impact of these three alternatives to natural cover, making it the third least preferred alternative in S4.</p>	<p>All alternatives in S4 have moderate net effects using the Ecosystem Service (ES) Net Effects weighting. Differentiation between alternatives is generated by examining the land cover Relative ES Value impacts and the proportion of Natural Cover contribution to total ES value.</p> <p>S4-1, S4-3 and S4-4 all have Moderate Land Cover ES impacts. Variation exists in the relative contribution of Natural Cover to total ES value. S4-4 has the second lowest impact of these three alternatives to natural cover, making it the second preferred alternative in S4.</p>
1.4 Groundwater				
1.4.1 Areas of Groundwater Recharge or Discharge	<ul style="list-style-type: none"> Low net effect to groundwater recharge and discharge in 12 ha of high permeability surficial sediments. <p>LOW NET EFFECT</p> <p>RANKING: 1st</p> <p>Comparable with all other alternatives.</p>	<ul style="list-style-type: none"> Low net effect to groundwater recharge and discharge in 9 ha of high permeability surficial sediments. <p>LOW NET EFFECT</p> <p>RANKING: 1st</p> <p>Comparable with all other alternatives.</p>	<ul style="list-style-type: none"> Low net effect to groundwater recharge and discharge in 11 ha of high permeability surficial sediments. <p>LOW NET EFFECT</p> <p>RANKING: 1st</p> <p>Comparable with all other alternatives.</p>	<ul style="list-style-type: none"> Low net effect to groundwater recharge and discharge in 12 ha of high permeability surficial sediments. <p>LOW NET EFFECT</p> <p>RANKING: 1st</p> <p>Comparable with all other alternatives.</p>
1.4.2 Groundwater Source Areas and Wellhead Protection Areas	<p>NO NET EFFECT</p> <p>RANKING: 1st</p> <p>No relative ranking; effect on indicator is not present for any alternatives.</p>	<p>NO NET EFFECT</p> <p>RANKING: 1st</p> <p>No relative ranking; effect on indicator is not present for any alternatives.</p>	<p>NO NET EFFECT</p> <p>RANKING: 1st</p> <p>No relative ranking; effect on indicator is not present for any alternatives.</p>	<p>NO NET EFFECT.</p> <p>RANKING: 1st</p> <p>No relative ranking; effect on indicator is not present for any alternatives.</p>
1.4.3 Large Volume Wells	<ul style="list-style-type: none"> One large volume well requiring decommissioning. <p>LOW NET EFFECT</p> <p>RANKING: 2nd</p> <p>One large volume well requiring decommissioning.</p>	<ul style="list-style-type: none"> One large volume well requiring decommissioning. <p>LOW NET EFFECT</p> <p>RANKING: 2nd</p> <p>One large volume well requiring decommissioning.</p>	<ul style="list-style-type: none"> The effects are anticipated to be negligible <p>NO NET EFFECT</p> <p>RANKING: 1st</p> <p>No presence of large volume well. No net effects</p>	<ul style="list-style-type: none"> One large volume well requiring decommissioning. <p>LOW NET EFFECT</p> <p>RANKING: 2nd</p> <p>One large volume well requiring decommissioning.</p>
1.4.4 Private Wells	<ul style="list-style-type: none"> Potential reduction in water quality to 2 shallow wells due to the use of road salt on new highway/interchange resulting in 	<ul style="list-style-type: none"> Potential reduction in water quality to 2 shallow wells due to the use of road salt on new highway/interchange resulting in 	<ul style="list-style-type: none"> Potential reduction in water quality to 4 shallow wells due to the use of road salt on new highway/interchange resulting in 	<ul style="list-style-type: none"> Potential reduction in water quality to 1 shallow well due to the use of road salt on new highway/interchange resulting in a

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2	Alternative S4-3	Alternative S4-4
	a potential reduction in water quality. At least 13 wells require decommissioning.	a potential reduction in water quality. At least 22 wells require decommissioning.	a potential reduction in water quality. At least 26 wells require decommissioning.	potential reduction in water quality. At least 21 wells require decommissioning.
	LOW NET EFFECT RANKING: 1st	MODERATE NET EFFECT RANKING: 3rd	MODERATE NET EFFECT RANKING: 3rd	LOW NET EFFECT RANKING: 1st
	This alternative has a few shallow wells and fewer wells to be removed.	This alternative has a few shallow wells and higher number of wells to be removed.	This alternative has a few shallow wells and higher number of wells to be removed.	This alternative has a few shallow wells and fewer wells to be removed.
1.4.5 Groundwater-Dependent Commercial Enterprises	<ul style="list-style-type: none"> Potential to adversely affect 1 groundwater-dependent commercial enterprise. 	<ul style="list-style-type: none"> Potential to adversely affect 1 groundwater-dependent commercial enterprise. 	<ul style="list-style-type: none"> Potential to adversely affect 1 groundwater-dependent commercial enterprise. 	<ul style="list-style-type: none"> No net effect to groundwater-dependent commercial enterprises.
	LOW NET EFFECT RANKING: 2nd	LOW NET EFFECT RANKING: 2nd	LOW NET EFFECT RANKING: 2nd	NO NET EFFECT RANKING: 1st
	One (1) groundwater-dependent commercial enterprise located within highway/interchange footprint and may require decommissioning.	One (1) groundwater-dependent commercial enterprise located within highway/interchange footprint and may require decommissioning.	One (1) groundwater-dependent commercial enterprise located within highway/interchange footprint and may require decommissioning.	No ground-water dependent commercial enterprises within study area.
1.4.6 Groundwater-Sensitive Ecosystems	<ul style="list-style-type: none"> Moderate net effect to groundwater-sensitive ecosystems due to the presences of 1 pond, wetland headwaters, 1.3 ha of unevaluated wetland and 12 watercourse crossings within highway corridor. 	<ul style="list-style-type: none"> Low net effect to groundwater-sensitive ecosystems due to the presences of 1 pond, wetland headwaters, 0.1 ha of unevaluated wetland and 17 watercourse crossings within highway corridor. 	<ul style="list-style-type: none"> Moderate net effect to groundwater-sensitive ecosystems due to the presences of 1 pond, wetland headwaters, 2.9 ha of unevaluated wetland and 16 watercourse crossings within highway corridor. 	<ul style="list-style-type: none"> Moderate net effect to groundwater-sensitive ecosystems due to the presences of 1 pond, wetland headwaters, 1.9 ha of unevaluated wetland and 11 watercourse crossings within highway corridor.
	MODERATE NET EFFECT RANKING: 2nd	LOW NET EFFECT RANKING: 1st	MODERATE NET EFFECT RANKING: 2nd	MODERATE NET EFFECT RANKING: 2nd
	Similar to S4-3 and S4-4	Lowest area coverage of wetland.	Similar to S4-1 and S4-4	Similar to S4-1 and S4-3.
1.5 Surface Water				
1.5.1 Watershed / Subwatershed Drainage Features / Patterns	<ul style="list-style-type: none"> All watercourse crossings are close to perpendicular and some minor watercourse crossings can be eliminated. Net effect is common and straightforward and easily mitigated. 	<ul style="list-style-type: none"> 15 watercourse crossings included in fluvial geomorphology assessment. Crossings are for the most part all perpendicular and can be mitigated with culverts. A number of the minor watercourses (up to 6) would be candidates for removal with function replicated in SWM design. The Chinguacousy/Old School Road interchange would have to have design components for open watercourse features to qualify as an enhancement. Generally, mitigable effects with the exception of the interchange which is a significant effect and will be costly to mitigate from a fluvial perspective. 	<ul style="list-style-type: none"> Minor watercourse crossings are near perpendicular to the roadway and can be mitigated through culverts. The moderate crossings are also perpendicular and can use culverts but the sinuosity of two of them would require wider spans. The interchange watercourses designated as minor can be removed and have their function replaced with SWM contributions. The moderate watercourse could take some additional flow from one of the minor watercourses. Net effect straightforward and easily mitigated. 	<ul style="list-style-type: none"> All watercourse crossings are close to perpendicular so mitigation with culverts is straightforward. Some minor watercourses can be eliminated and the downstream function met with stormwater drainage. Chinguacousy interchange effects can be mitigated through realignments of the watercourse tributary junction. Net effect is straightforward and easily mitigated.
	LOW NET EFFECT RANKING: 1st	MODERATE NET EFFECT RANKING: 4th	LOW NET EFFECT RANKING: 2nd	LOW NET EFFECT RANKING: 2nd
	As the most northerly option, S4-1 requires crossings at upper sections of the watercourses, resulting in smaller culverts and more opportunities for diversions.	Large footprint for interchange creates a greater number of additional surface water impacts that will require attention / intervention.	Smaller net effect resulting from interchange than S4-2.	Smaller net effect resulting from interchange than S4-2.

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2	Alternative S4-3	Alternative S4-4
1.5.2 Surface Water Quality and Quantity	<ul style="list-style-type: none"> Introduces 55 ha impervious area to Etobicoke Creek watershed. Medium impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off, thermal impact on the coolwater system. Medium impacts on hydrology due to changes in ground permeability. Low impacts on modifications to surface drainage patterns and alterations of waterbodies. 	<ul style="list-style-type: none"> Introduces 55 ha impervious area to Etobicoke Creek watershed. Medium impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off, thermal impact on the coolwater system. Medium impacts on hydrology due to changes in ground permeability. Low impacts on modifications to surface drainage patterns and alterations of waterbodies. 	<ul style="list-style-type: none"> Introduces 54 ha impervious area to Etobicoke Creek watershed. Medium impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off, thermal impact on the coolwater system. Medium impacts on hydrology due to changes in ground permeability. Low impacts on modifications to surface drainage patterns and alterations of waterbodies. 	<ul style="list-style-type: none"> Introduces 54 ha impervious area to Etobicoke Creek watershed. Medium impacts on quality through direct and indirect discharges of contaminated and sediment-laden run-off, thermal impact on the coolwater system. Medium impacts on hydrology due to changes in ground permeability. Low impacts on modifications to surface drainage patterns and alterations of waterbodies.
	MODERATE NET EFFECT	MODERATE NET EFFECT	MODERATE NET EFFECT	MODERATE NET EFFECT
	RANKING: 1st	RANKING: 1st	RANKING: 1st	RANKING: 1st
	Similar net effect as other alternatives.	Similar net effect as other alternatives.	Similar net effect as other alternatives.	Similar net effect as other alternatives.
1.6 Air Quality and Climate Change				
1.6.1 Local and regional air quality impacts; greenhouse gas emissions	<ul style="list-style-type: none"> Some residences on Heritage Rd., Mississauga Rd., Creditview Rd., Chinguacousy Rd., and McLaughlin Rd. are anticipated to be close enough to experience a change in air quality, but pollutants will remain within acceptable levels. 	<ul style="list-style-type: none"> Some residences on Heritage Rd., Mississauga Rd., Creditview Rd., Chinguacousy Rd., and McLaughlin Rd. are anticipated to be close enough to experience a change in air quality, but pollutants will remain within acceptable levels. 	<ul style="list-style-type: none"> Some residences on Heritage Rd., Mississauga Rd., Creditview Rd., Chinguacousy Rd., and McLaughlin Rd. are anticipated to be close enough to experience a change in air quality, but pollutants will remain within acceptable levels. 	<ul style="list-style-type: none"> Some residences on Mississauga Rd., Creditview Rd., Chinguacousy Rd., and McLaughlin Rd. are anticipated to be close enough to experience a change in air quality, but pollutants will remain within acceptable levels.
	LOW NET EFFECT	LOW NET EFFECT	LOW NET EFFECT	LOW NET EFFECT
	RANKING: 2nd	RANKING: 2nd	RANKING: 2nd	RANKING: 1st
	S4-1, S4-2 and S4-3 have similar number of affected residences.	S4-1, S4-2 and S4-3 have similar number of affected residences.	S4-1, S4-2 and S4-3 have similar number of affected residences.	Slightly fewer affected residences than other alternatives. This alternative also contributes to the shortest overall corridor length, thus reducing regional emissions of GHG and air pollutants.
2.0 Land Use / Socio-Economic Environment				
2.1 Land Use Planning Policies, Goals, Objectives				
2.1.1 Indigenous Land Claims	<p>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.</p> <ul style="list-style-type: none"> Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time. 	<p>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.</p> <ul style="list-style-type: none"> Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time. 	<p>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.</p> <ul style="list-style-type: none"> Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time. 	<p>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.</p> <ul style="list-style-type: none"> Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time.
	MODERATE NET EFFECT	MODERATE NET EFFECT	MODERATE NET EFFECT	MODERATE NET EFFECT
	RANKING: 1st	RANKING: 1st	RANKING: 1st	RANKING: 1st
	No difference between alternatives.	No difference between alternatives.	No difference between alternatives.	No difference between alternatives.
2.1.2 Provincial / Federal Land Use Planning Policies / Goals / Objectives	<ul style="list-style-type: none"> Impacts PPS agriculture, employment and housing policies. Impacts 153 hectares of Agricultural lands. Impacts 27 hectares of Greenbelt lands Protected Countryside (22.6 hectares Natural Heritage System). Impact to Agricultural System. 	<ul style="list-style-type: none"> Impacts PPS agriculture, employment and housing policies. Impacts 125 hectares of Agricultural lands. Impacts 57 hectares of Greenbelt lands Protected Countryside (12.2 hectares Natural Heritage System). Impact to Agricultural System. 	<ul style="list-style-type: none"> Impacts PPS agriculture, employment, public space and recreation, and housing policies. Impacts 150 hectares of Agricultural lands. Impacts 23 hectares of Greenbelt lands Protected Countryside-Natural Heritage System. 	<ul style="list-style-type: none"> Impacts PPS agriculture, employment, public space and recreation, and housing policies. Impacts 148 hectares of Agricultural lands. Impacts 27 hectares of Greenbelt lands Protected Countryside (22.6 hectares Natural Heritage System). Impact to Agricultural System.

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2 Summary of Potential Net Effects and Ranking	Alternative S4-3	Alternative S4-4
	<p>MODERATE NET EFFECT</p> <p>RANKING: 1st</p> <p>High impact on Agricultural lands and System and low impact on Greenbelt lands.</p>	<ul style="list-style-type: none"> Could establish a long-term urban-rural edge. <p>MODERATE NET EFFECT</p> <p>RANKING: 4th</p> <p>High impact on Greenbelt lands and moderate impact on Agricultural lands and System.</p>	<ul style="list-style-type: none"> Greater impact on Agricultural System but could establish a long-term urban-rural edge. <p>MODERATE NET EFFECT</p> <p>RANKING: 1st</p> <p>High impact on Agricultural lands and System and low impact on Greenbelt lands.</p>	<p>MODERATE NET EFFECT</p> <p>RANKING: 1st</p> <p>High impact on Agricultural lands and System with low impact on Greenbelt lands.</p>
2.1.3 Municipal (local and regional) Land Use Planning Policies / Goals / Objectives	<ul style="list-style-type: none"> Impacts 153 hectares of Agricultural lands. Impacts 26 hectares of future urban development lands. Impacts 2 hectares of Environmental Policy Area. Impacts 34.6 hectares of Mayfield West Secondary Plan (ROPA 29): future urban development to include a mix of residential and employment and development with general commercial. <p>MODERATE NET EFFECT</p> <p>RANKING: 1st</p> <p>High impact on agricultural lands and System and a moderate impact on the future development of the Mayfield West Secondary Plan.</p>	<ul style="list-style-type: none"> Impacts 125 hectares of Agricultural lands. Impacts 0.3 hectares of Mayfield West Secondary Plan (ROPA 29): future urban development to include a mix of residential and employment and development with general commercial. <p>MODERATE NET EFFECT</p> <p>RANKING: 3rd</p> <p>Proposed interchange at Old School Road has a high impact on the use of Agricultural Lands and System. Low impact on the future development of the Mayfield West Secondary Plan.</p>	<ul style="list-style-type: none"> Impacts 150 hectares of Agricultural lands. Impacts 33 hectares of future urban development lands. Impacts 4 hectares of Environmental Policy Area. Impacts 51.78 hectares of Mayfield West Secondary Plan: future urban development to include a mix of residential and employment and development with general commercial. <p>HIGH NET EFFECT</p> <p>RANKING: 4th</p> <p>High impact on agricultural lands and System and the future development of Mayfield West Secondary Plan.</p>	<ul style="list-style-type: none"> Impacts 148 hectares of Agricultural lands. Impacts 26 hectares of future urban development lands. Impacts 2 hectares of Environmental Policy Area. Impacts 34.6 hectares of Mayfield West Secondary Plan: future urban development to include a mix of residential and employment and development with general commercial. <p>MODERATE NET EFFECT</p> <p>RANKING: 1st</p> <p>High impact on agricultural lands and System and a moderate impact on the future development of Mayfield West Secondary Plan.</p>
2.1.4 Development Objectives of Private Property Owners	<ul style="list-style-type: none"> Likely interest to develop in the Mayfield West Secondary Plan area. <p>LOW NET EFFECT</p> <p>RANKING: 1st</p> <p>Possibility through design refinements to reduce the amount of future urban development lands impacted for Mayfield West Secondary Plan; however, would have a collateral impact on Greenbelt and Agricultural lands. Potential to further reduce FAA to allow for development.</p>	<ul style="list-style-type: none"> Likely interest to develop lands but no applications made because of the GTA West Study Area. <p>LOW NET EFFECT</p> <p>RANKING: 1st</p> <p>Impact to future potential development can be reduced by removing property from the FAA to allow for development.</p>	<ul style="list-style-type: none"> Likely interest to develop in the Mayfield West Secondary Plan area. <p>MODERATE NET EFFECT</p> <p>RANKING: 4th</p> <p>Possibility through design refinements to reduce the amount of future urban development lands impacted for Mayfield West Secondary Plan; however, would have a collateral impact on Greenbelt and Agricultural lands. Potential to further reduce FAA to allow for development.</p>	<ul style="list-style-type: none"> Likely interest to develop in the Mayfield West Secondary Plan area. <p>MODERATE NET EFFECT</p> <p>RANKING: 3rd</p> <p>Possibility through design refinements to reduce the amount of future urban development lands impacted for Mayfield West Secondary Plan; however, would have a collateral impact on Greenbelt and Agricultural lands. Potential to further reduce FAA to allow for development.</p>
2.2 Land Use – Community				
2.2.1 First Nation Reserves	<ul style="list-style-type: none"> No reserves in study area. <p>NO NET EFFECT</p> <p>RANKING: 1st</p> <p>No difference between alternatives.</p>	<ul style="list-style-type: none"> No reserves in study area. <p>NO NET EFFECT</p> <p>RANKING: 1st</p> <p>No difference between alternatives.</p>	<ul style="list-style-type: none"> No reserves in study area. <p>NO NET EFFECT</p> <p>RANKING: 1st</p> <p>No difference between alternatives.</p>	<ul style="list-style-type: none"> No reserves in study area. <p>NO NET EFFECT</p> <p>RANKING: 1st</p> <p>No difference between alternatives.</p>
2.2.2 Indigenous Sacred Areas	<ul style="list-style-type: none"> No known or reported Indigenous Sacred Areas. <p>NO NET EFFECT</p> <p>RANKING: 1st</p> <p>No difference between alternatives.</p>	<ul style="list-style-type: none"> No known or reported Indigenous Sacred Areas. <p>NO NET EFFECT</p> <p>RANKING: 1st</p> <p>No difference between alternatives.</p>	<ul style="list-style-type: none"> No known or reported Indigenous Sacred Areas. <p>NO NET EFFECT</p> <p>RANKING: 1st</p> <p>No difference between alternatives.</p>	<ul style="list-style-type: none"> No known or reported Indigenous Sacred Areas. <p>NO NET EFFECT</p> <p>RANKING: 1st</p> <p>No difference between alternatives.</p>

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2 Summary of Potential Net Effects and Ranking	Alternative S4-3	Alternative S4-4
2.2.3 Urban and Rural Residential Uses and Properties	<ul style="list-style-type: none"> 10 residential properties impacted (2.48 ha). <p>LOW NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> 11 residential properties impacted. <p>MODERATE NET EFFECT RANKING: 2nd</p>	<ul style="list-style-type: none"> 17 residential properties impacted. <p>HIGH NET EFFECT RANKING: 4th</p>	<ul style="list-style-type: none"> 14 residential properties impacted. <p>MODERATE NET EFFECT RANKING: 2nd</p>
	Impacts a low number of residential dwellings.	Impacts the lowest moderate number of residential dwellings. Interchange at Chinguacousy Rd. would result in more impacts.	Impacts the highest number of residential dwellings.	Impacts the highest moderate number of residential dwellings.
2.2.4 Commercial/ Industrial Uses and Properties	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> 1 property impacted (Gro Bark). <p>MODERATE NET EFFECT RANKING: 4th</p>
	Does not have any impacts.	Does not have any impacts.	Does not have any impacts.	Impacts a portion of Gro Bark lands but not the building; design refinements could reduce the impacts.
2.2.5 Recreational Areas and Tourist Attractions	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>
	Does not have any impacts.	Does not have any impacts.	Does not have any impacts.	Does not have any impacts.
2.2.6 Community Facilities / Institutions	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>
	Does not have any impacts.	Does not have any impacts.	Does not have any impacts.	Does not have any impacts.
2.2.7 Municipal Infrastructure and Public Service Facilities	<ul style="list-style-type: none"> Impacts GO Transit line. <p>LOW NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> Impacts GO Transit line. <p>LOW NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> Impacts GO Transit line. <p>LOW NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> Impacts GO Transit line. <p>LOW NET EFFECT RANKING: 1st</p>
	All alternatives require 1 rail line crossing. Impacts can be mitigated through design refinements.	All alternatives require 1 rail line crossing. Impacts can be mitigated through design refinements.	All alternatives require 1 rail line crossing. Impacts can be mitigated through design refinements.	All alternatives require 1 rail line crossing. Impacts can be mitigated through design refinements.
2.3 Noise Sensitive Areas (NSA's)				
2.3.1 Transportation Noise	<ul style="list-style-type: none"> Some residences on Heritage Rd., Mississauga Rd., Creditview Rd., Chinguacousy Rd., and McLaughlin Rd. are anticipated to be close enough to experience a significant change in noise. <p>MODERATE NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> Several residences on Heritage Rd., Mississauga Rd., Creditview Rd., Chinguacousy Rd., and McLaughlin Rd. are anticipated to be close enough to experience a significant change in noise. <p>MODERATE NET EFFECT RANKING: 3rd</p>	<ul style="list-style-type: none"> Several residences on Heritage Rd., Mississauga Rd., Creditview Rd., Chinguacousy Rd., and McLaughlin Rd. are anticipated to be close enough to experience a significant change in noise. <p>MODERATE NET EFFECT RANKING: 3rd</p>	<ul style="list-style-type: none"> Several residences on Mississauga Rd., Creditview Rd., Chinguacousy Rd., and McLaughlin Rd. are anticipated to be close enough to experience a significant change in noise. <p>MODERATE NET EFFECT RANKING: 2nd</p>
	Fewest affected residences.	More affected residences than S4-1 and S4-4. Similar to S4-3.	More affected residences than S4-1 and S4-4. Similar to S4-2.	Slightly more affected residences than S4-1.
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	Treaties including Nanfan (1701), Treaty 3 (1795), Treaty 3.75 (1795), Treaty 13 (1805), Treaty 13A (1805), Treaty 18, 1818, Treaty 19	Treaties including Nanfan (1701), Treaty 3 (1795), Treaty 3.75 (1795), Treaty 13 (1805), Treaty 13A (1805), Treaty 18, 1818, Treaty 19	Treaties including Nanfan (1701), Treaty 3 (1795), Treaty 3.75 (1795), Treaty 13 (1805), Treaty 13A (1805), Treaty 18, 1818, Treaty 19 (1918), Williams

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2 Summary of Potential Net Effects and Ranking	Alternative S4-3	Alternative S4-4
	(1918), Williams Treaty (1923), as well as various Assertions and Claims. <ul style="list-style-type: none"> Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time. <p style="text-align: center;">MODERATE NET EFFECT RANKING: 1st</p> <p style="text-align: center;">No difference between alternatives.</p>	(1918), Williams Treaty (1923), as well as various Assertions and Claims. <ul style="list-style-type: none"> Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time. <p style="text-align: center;">MODERATE NET EFFECT RANKING: 1st</p> <p style="text-align: center;">No difference between alternatives.</p>	(1918), Williams Treaty (1923), as well as various Assertions and Claims. <ul style="list-style-type: none"> Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time. <p style="text-align: center;">MODERATE NET EFFECT RANKING: 1st</p> <p style="text-align: center;">No difference between alternatives.</p>	Treaty (1923), as well as various Assertions and Claims. <ul style="list-style-type: none"> Additional Indigenous Assertions and/or Claims may be filed and/or proven at any time. <p style="text-align: center;">MODERATE NET EFFECT RANKING: 1st</p> <p style="text-align: center;">No difference between alternatives.</p>
2.4.2 Agriculture / Specialty Crop <ul style="list-style-type: none"> 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 Farm properties less than 20 ha affected 	<ul style="list-style-type: none"> Loss of 139.6 ha of Class 1 – 3 lands No effect Loss of 26.2 ha of small grain cropland Loss of 61.1 ha of common field cropland Loss of 33.6 ha of pasture/forage cropland Six livestock operations affected (dairy, sheep/beef, poultry, horse (2), beef) (land for four, buildings for two) Loss of large pole barn, two small pole barns, two forage storage structures, loss of indoor riding arena, two machine sheds, three farm residential units One small shed Six crop operations affected Twelve farm properties greater than 20 ha affected Four farm properties less than 20 ha affected 	<ul style="list-style-type: none"> Loss of 174.0 ha of Class 1 – 3 lands No effect Loss of 31.5 ha of small grain cropland Loss of 98.1 ha of common field cropland Loss of 19.4 ha of pasture/forage cropland Loss of 20.4 ha of plowed cropland Eight livestock operations affected (3 beef, dairy, horse (2), poultry/beef, poultry) (land only for six, land and buildings for two) Loss of large pole barn with two small feed bins, large bank barn, plastic covered storage building, metal clad pole building, shed and farm residential unit, medium size pole building No effect Twelve crop operations affected Thirteen farm properties greater than 20 ha affected Fifteen farm properties less than 20 ha affected 	<ul style="list-style-type: none"> Loss of 119.0 ha of Class 1 – 3 lands No effect Loss of 10.0 ha of small grain cropland Loss of 54.2 ha of common field cropland Loss of 22.6 ha of plowed cropland Loss of 20.6 ha of pasture/forage cropland Six livestock operations affected (dairy, beef, poultry, poultry/beef, horse, beef) (loss of land for five, loss of land and buildings for one) Loss small pole barn, two plastic covered structures, one farm residential unit Four pole barns, one machine shed, one farm residential unit, one large bank barn, one large pole barn with two feed bins, one metal chad pole building, one plastic covered structure, one farm residential unit Four crop operations affected Nine farm properties greater than 20 ha affected Six farm properties less than 20 ha affected 	<ul style="list-style-type: none"> Loss of 131.8 ha of Class 1 – 3 lands No effect Loss of 14.9 ha of small grain cropland Loss of 71.1 ha of common field cropland Loss of 28.2 ha of pasture/forage cropland Six livestock operations affected (dairy, beef, poultry, horse (2), beef) (three for loss of land only, three for loss of land and buildings) Loss of large bank barn, large machine shed (with extension), two sheds, small pole barn, two silos, large pole building, farm residential unit, two pole buildings, farm residential unit, indoor riding arena, pole barn with addition, large pole barn, farm residential unit, small pole barn, two plastic covered structures, farm residential unit No effect Five crop operations affected Twelve farm properties greater than 20 ha affected Seven farm properties less than 20 ha affected

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2	Alternative S4-3	Alternative S4-4
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Six severed parcels greater than 20 ha created Thirteen severed parcels less than 20 ha created Three landlocked parcels created Three high investment operations affected (land only) No effect No effect Loss of 23.9 ha of tile drainage (systematic) <p>MODERATE NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> Seven severed parcels greater than 20 ha created Eighteen severed parcels less than 20 ha created Six landlocked parcels created Five high investment operations affected (land only for four land and buildings for one) No effect No effect Loss of 27.4 ha of tile drainage (systematic) <p>MODERATE NET EFFECT RANKING: 4th</p>	<ul style="list-style-type: none"> Four severed parcels greater than 20 ha created Eleven severed parcels less than 20 ha created Four landlocked parcels created Four high investment operations affected (dairy, beef, poultry, poultry/beef) (loss of land only) No effect No effect Loss of 26.0 ha of tile drainage (systematic) and 3.1 ha of tile drainage (random) <p>MODERATE NET EFFECT RANKING: 2nd</p>	<ul style="list-style-type: none"> Three severed parcels greater than 20 ha created Twelve severed parcels less than 20 ha created Seven landlocked parcels created Three high investment operations affected (two for land only, one for land and buildings) No effect No effect Loss of 13.5 ha of tile drainage (systematic) <p>MODERATE NET EFFECT RANKING: 3rd</p>
	<ul style="list-style-type: none"> Loss of 139.6 ha of Class 1 – 3 lands Six livestock operations affected Three high investment operations affected (land only) Loss of 23.9 ha of tile drainage 	<ul style="list-style-type: none"> Loss of 174.0 ha of Class 1 – 3 lands Loss of greatest quantity of cropland Greatest number of cropland properties affected Greatest number of severed parcels created Eight livestock operations affected Five high investment operations affected (land only for four, land and buildings for two) Loss of 27.4 ha of tile drainage 	<ul style="list-style-type: none"> Loss of 119.0 ha of Class 1 – 3 lands Fewest number of farm properties affected Fewest number of landlocked parcels created Six livestock operations affected Four high investment operations affected (land only) Loss of 26.0 ha of tile drainage (systematic) and 3.1 ha (random) 	<ul style="list-style-type: none"> Loss of 131.8 ha of Class 1 – 3 lands Six livestock operations affected Greatest loss of agricultural buildings No additional agricultural buildings within 50 m Three high investment operations affected (two for land only, one for land and buildings) Loss of 13.5 ha of tile drainage
2.4.3 Recreation	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p> <p>Does not have any impacts.</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p> <p>Does not have any impacts.</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p> <p>Does not have any impacts.</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p> <p>Does not have any impacts.</p>
2.4.4 Aggregate and Mineral Resources	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p> <p>Does not have any impacts.</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p> <p>Does not have any impacts.</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p> <p>Does not have any impacts.</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p> <p>Does not have any impacts.</p>
2.5 Major Utility Transmission Corridors and Pipelines				
2.5.1 Major Existing Utility Transmission Corridors and Pipelines	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT RANKING: 1st</p>

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2	Alternative S4-3	Alternative S4-4
Summary of Potential Net Effects and Ranking				
	Does not have any impacts.	Does not have any impacts.	Does not have any impacts.	Does not have any impacts.
2.5.2 Major Proposed Utility Transmission Corridors and Pipelines	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT</p> <p>RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT</p> <p>RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT</p> <p>RANKING: 1st</p>	<ul style="list-style-type: none"> No impacts <p>NO NET EFFECT</p> <p>RANKING: 1st</p>
	Does not have any impacts.	Does not have any impacts.	Does not have any impacts.	Does not have any impacts.
2.6 Contaminated Property and Waste Management	<p>Properties within alternative:</p> <ul style="list-style-type: none"> One (1) CPR rail line. <p>Properties within 250 m of alternative:</p> <ul style="list-style-type: none"> One (1) CPR rail line; One (1) light industrial property. <p>LOW NET EFFECT</p> <p>RANKING: 1st</p> <p>One property of medium concern to be directly impacted; two properties of medium concern to be indirectly impacted.</p>	<p>Properties within alternative:</p> <ul style="list-style-type: none"> One (1) CPR rail line; One (1) light industrial property. <p>Properties within 250 m of alternative:</p> <ul style="list-style-type: none"> One (1) CPR rail line; One (1) light industrial property. One (1) registered waste management facility within 100 m of the alternative; One (1) institutional property. <p>MODERATE NET EFFECT</p> <p>RANKING: 2nd</p> <p>Two properties of medium concern to be directly impacted; three properties of medium concern to be indirectly impacted. Same properties as Alternative S4-3</p>	<p>Properties within alternative:</p> <ul style="list-style-type: none"> One (1) CPR rail line; One (1) light industrial property. <p>Properties within 250 m of alternative:</p> <ul style="list-style-type: none"> One (1) CPR rail line; One (1) light industrial property. One (1) registered waste management facility within 5 m of the alternative; One (1) institutional property. <p>MODERATE NET EFFECT</p> <p>RANKING: 2nd</p> <p>Two properties of medium concern to be directly impacted; three properties of medium concern to be indirectly impacted. Same properties as Alternative S4-2</p>	<p>Properties within alternative:</p> <ul style="list-style-type: none"> One (1) CPR rail line; One (1) commercial/ light industrial property. <p>Properties within 250 m of alternative:</p> <ul style="list-style-type: none"> One (1) CPR rail line; One (1) light industrial property; One (1) institutional property. <p>MODERATE NET EFFECT</p> <p>RANKING: 4th</p> <p>One property of high concern and one property of medium concern to be directly impacted; three properties of medium concern to be indirectly impacted.</p>
2.7 Landscape Composition				
2.7.1 Terrain	<ul style="list-style-type: none"> Predominantly flat, level topography with agricultural land use (most of alternative designated agricultural; crosses two small portions of protected Greenbelt towards the east). A total of 21 watercourse crossings and associated floodplains are impacted by this alternative. <ul style="list-style-type: none"> 1 LSW is impacted by this alternative 1 PSW is impacted by this alternative <p>MODERATE NET EFFECT</p> <p>RANKING: 1st</p> <p>Alternative has fewest overall effects on topographic character and existing land use patterns. Least amount of wetland impacted.</p>	<ul style="list-style-type: none"> Much of alternative consists of flat, level topography and agricultural land use (most of alternative designated agricultural; crosses one small portion and one large area of protected Greenbelt at the east end of the section). Alternative crosses a total of 18 watercourses <ul style="list-style-type: none"> 1 PSW is impacted by this alternative 1 LSW is impacted by this alternative <p>MODERATE NET EFFECT</p> <p>RANKING: 2nd</p> <p>Similar to S4-1; however, a few additional effects to topographic character / drainage patterns. Slightly more wetland impacted.</p>	<ul style="list-style-type: none"> Predominantly flat, level topography throughout alternative with agricultural land use (most of alternative designated agricultural; crosses two small portions of protected Greenbelt towards the east as well as a Future Urban area) Alternative crosses portions of 20 watercourses throughout section <ul style="list-style-type: none"> 1 LSW is affected by this alternative 1 PSW is affected by this alternative 1 unevaluated wetland is affected by this alternative <p>MODERATE NET EFFECT</p> <p>RANKING: 4th</p> <p>Alternative has greatest effects on existing topography and land use patterns. Largest area of wetland impacted</p>	<ul style="list-style-type: none"> Predominantly flat, level topography with agricultural land use (most of alternative designated agricultural; crosses two small portions of protected Greenbelt towards the east). Alternative crosses portions of 20 watercourses and associated floodplains throughout section <ul style="list-style-type: none"> 1 LSW is affected by this alternative 1 PSW is affected by this alternative 1 unevaluated wetland is affected by this alternative <p>MODERATE NET EFFECT</p> <p>RANKING: 3rd</p> <p>Similar to S4-3; however, somewhat fewer overall effects to topographic character. similar amount of wetland as alternative S4-1.</p>
2.7.2 Vegetation	<ul style="list-style-type: none"> Alternative interrupts connectivity of 2 vegetated corridors associated with watercourses toward north end of alternative (combination of woody vegetation and open/ meadow vegetation) 	<ul style="list-style-type: none"> Alternative impacts/ interrupts 6 potentially significant woodland areas (approx. 15.0 ha in total) 	<ul style="list-style-type: none"> Alternative interrupts connectivity of 2 vegetated corridors associated with watercourses toward north end of alternative (combination of woody vegetation and open/ meadow vegetation) 	<ul style="list-style-type: none"> Alternative interrupts connectivity of 2 vegetated corridors associated with watercourses toward north end of alternative (combination of woody vegetation and open/ meadow vegetation)

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2	Alternative S4-3	Alternative S4-4
	Summary of Potential Net Effects and Ranking			
	<p>MODERATE NET EFFECT</p> <p>RANKING: 2nd</p> <p>Similar to S4-2 in terms of overall effects; however, this alternative has less effect to forested area at west end of section, but has greater impacts to vegetation connectivity at east end.</p>	<p>MODERATE NET EFFECT</p> <p>RANKING: 1st</p> <p>This alternative has less overall amount of disruption to connectivity of established vegetation communities; however, this alternative has greater disruptions to vegetation connectivity, including on forest at west end of alternative.</p>	<p>HIGH NET EFFECT</p> <p>RANKING: 4th</p> <p>Alternative affects the highest overall area of woodland vegetation.</p>	<p>HIGH NET EFFECT</p> <p>RANKING: 3rd</p> <p>Large amounts of potentially significant woodland areas are affected by this alternative.</p>
2.7.3 Visual Impacts	<ul style="list-style-type: none"> Diminished aesthetic quality of scenic views, reduced visual impact through mitigation/compensation measures. Sporadic sensitive viewers along Mississauga Rd. (5 farm/residential properties, 5 residential properties). Sporadic sensitive viewers on Creditview Rd. (2 residential/farm properties to the north, 2 residential/farm properties to the south, cluster of 9 residential properties). Additional sensitive viewers include 2 residential properties on Chinguacousy Rd., 3 residential properties and 3 residential/farm properties on McLaughlin Rd. Generally low landscape absorptivity due to level topography and open agricultural land; some opportunities for integration into existing wooded areas and hedgerows at both west and east edges of alternative. 	<ul style="list-style-type: none"> Diminished aesthetic quality of scenic views, reduced visual impact through mitigation/compensation measures. Sensitive viewers include: 2 residential / farm properties and 1 commercial property on Mississauga Rd.; 1 residential / farm property, cluster of 9 residential properties and another cluster of 4 residential properties on Creditview Rd.; cluster of 8 residential properties on Old School Rd.; 4 residential / farm properties and 3 residential properties on Chinguacousy Rd.; 2 residential / farm properties and 4 residential clusters (totalling 13 properties) on McLaughlin Rd. Generally low landscape absorptivity due to level topography and open agricultural land; some opportunities for integration into existing wooded areas and hedgerows at both west and east edges of alternative, as well as some small woodlot clusters mid-section. Brampton Airport is sensitive viewer located just to the north on McLaughlin Rd. 	<ul style="list-style-type: none"> Diminished aesthetic quality of scenic views, reduced visual impact through mitigation/compensation measures. Sensitive viewers include: 2 residential/ farm properties and 1 commercial property on Mississauga Rd.; 1 residential/ farm property, cluster of 9 residential properties and another cluster of 2 residential properties on Creditview Rd.; 1 residential/ farm properties and 5 residential properties on Chinguacousy Rd.; 1 residential/ farm property and 2 residential properties on McLaughlin Rd. Generally low landscape absorptivity due to level topography and open agricultural land; some opportunities for integration into existing wooded areas and hedgerows at both west and east edges of alternative, as well as some small woodlot clusters mid-section 	<ul style="list-style-type: none"> Diminished aesthetic quality of scenic views, reduced visual impact through mitigation/compensation measures. Sensitive viewers include 1 commercial property, 2 residential/farm properties, 4 residential properties on Mississauga Rd. Sporadic sensitive viewers on Creditview Rd. (2 residential/farm properties to the north, 2 residential/farm properties to the south, cluster of 9 residential properties). Additional sensitive viewers include 2 residential properties on Chinguacousy Rd., 3 residential properties and 3 residential/farm properties on McLaughlin Rd. Generally low landscape absorptivity due to level topography and open agricultural land; some opportunities for integration into existing wooded areas and hedgerows at both west and east edges of alternative.
	<p>MODERATE NET EFFECT</p> <p>RANKING: 3rd</p> <p>Alternative has moderate number of sensitive viewers affected as compared to other alternatives.</p>	<p>MODERATE NET EFFECT</p> <p>RANKING: 4th</p> <p>Alternative has greatest overall number of sensitive viewers affected.</p>	<p>MODERATE NET EFFECT</p> <p>RANKING: 1st</p> <p>Alternative has fewest overall number of sensitive viewers affected.</p>	<p>MODERATE NET EFFECT</p> <p>RANKING: 2nd</p> <p>Alternative has moderate number of sensitive viewers affected as compared to other alternatives.</p>
2.7.4 Aesthetics	<ul style="list-style-type: none"> Open vistas across agricultural land (crops) throughout much of alternative, broken up by a few wooded areas at west and east end of section. More gently undulating topography and increased vegetation provides more scenic interest at east end of alternative. 	<ul style="list-style-type: none"> Open vistas across agricultural land (crops) throughout much of alternative, broken up by a few wooded areas at west and east end of section. More gently undulating topography and increased vegetation provides more scenic interest at east end of alternative. 	<ul style="list-style-type: none"> Open vistas across agricultural land (crops) throughout much of alternative, broken up by a few wooded areas at west and east end of section. More gently undulating topography and increased vegetation provides more scenic interest at east end of alternative 	<ul style="list-style-type: none"> Open vistas across agricultural land (crops) throughout much of alternative, broken up by a few wooded areas at west and east end of section. More gently undulating topography and increased vegetation provides more scenic interest at east end of alternative
	<p>LOW NET EFFECT</p> <p>RANKING: 1st</p>	<p>MODERATE NET EFFECT</p> <p>RANKING: 3rd</p>	<p>MODERATE NET EFFECT</p> <p>RANKING: 4th</p>	<p>LOW NET EFFECT</p> <p>RANKING: 2nd</p>

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2	Alternative S4-3	Alternative S4-4
	Alternative has fewest overall effects on aesthetic quality, as well as opportunities for scenic views over creek crossing areas.	Alternative has moderate effects on aesthetic quality as compared to other alternatives.	Alternative has greatest overall effects on aesthetic quality of existing landscapes.	Similar to S4-1 with opportunities for scenic views over creek crossing areas.
3.0 Cultural Environment				
3.1 Built Heritage Resources and Cultural Heritage Landscapes				
3.1.1 Built Heritage Resources	<ul style="list-style-type: none"> There are four (4) potential (BHR 095, BHR 113, BHR 114 and BHR 112) BHRs affected by this alternative. <p style="text-align: center;">MODERATE NET EFFECT RANKING: 1st</p> <p>There are four (4) potential 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.</p>	<ul style="list-style-type: none"> There are five (5) potential (BHR 093, BHR 094, BHR 100, BHR 113, BHR 114) BHRs affected by this alternative. <p style="text-align: center;">HIGH NET EFFECT RANKING: 2nd</p> <p>There are five (5) potential 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.</p>	<ul style="list-style-type: none"> There are two (2) listed (BHR 119 and BHR 112) and six (6) potential (BHR 093, 094, 100, 111, 113 and 114) BHRs affected by this alternative. <p style="text-align: center;">HIGH NET EFFECT RANKING: 2nd</p> <p>There are two (2) listed and six (6) potential 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.</p>	<ul style="list-style-type: none"> There are four (4) listed (BHR 093, BHR 094, BHR 113 and BHR 114) and one (1) potential (BHR 112) BHRs affected by this alternative. <p style="text-align: center;">HIGH NET EFFECT RANKING: 2nd</p> <p>There are four (4) listed and one (1) potential 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.</p>
3.1.2 Heritage Bridges	<ul style="list-style-type: none"> There are no Heritage Bridges affected by this alternative. <p style="text-align: center;">NO NET EFFECT RANKING: 1st</p> <p>There are no Heritage Bridges affected by this alternative.</p>	<ul style="list-style-type: none"> There are no Heritage Bridges affected by this alternative. <p style="text-align: center;">NO NET EFFECT RANKING: 1st</p> <p>There are no Heritage Bridges affected by this alternative.</p>	<ul style="list-style-type: none"> There are no Heritage Bridges affected by this alternative. <p style="text-align: center;">NO NET EFFECT RANKING: 1st</p> <p>There are no Heritage Bridges affected by this alternative.</p>	<ul style="list-style-type: none"> There are no Heritage Bridges affected by this alternative. <p style="text-align: center;">NO NET EFFECT RANKING: 1st</p> <p>There are no Heritage Bridges affected by this alternative.</p>
3.1.3 Cultural Heritage Landscapes	<ul style="list-style-type: none"> There are two (2) listed (CHL 120 and CHL 121) and three (3) potential (CHL 101, CHL 102 and CHL 122) CHLs affected by this alternative. <p style="text-align: center;">MODERATE NET EFFECT RANKING: 1st</p> <p>There are two (2) listed and three (3) potential CHLs 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. While not within the alternative, the cemetery is within 100 m and is therefore visually impacted.</p>	<ul style="list-style-type: none"> There is one (1) cemetery (CHL 123) CHL affected by this alternative. <p style="text-align: center;">HIGH NET EFFECT RANKING: 4th</p> <p>There is one (1) cemetery CHL 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.</p>	<ul style="list-style-type: none"> There are two (2) listed (CHL 120 and CHL 121) CHLs affected by this alternative. <p style="text-align: center;">MODERATE NET EFFECT RANKING: 1st</p> <p>There are two (2) listed CHLs 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.</p>	<ul style="list-style-type: none"> There are two (2) listed (CHL 120 and CHL 121) and one (1) potential CHL (CHL 122) CHLs affected by this alternative. <p style="text-align: center;">MODERATE NET EFFECT RANKING: 1st</p> <p>There are two (2) listed and one (1) potential CHLs 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. While not within the alternative, the cemetery is within 100 m and is therefore visually impacted.</p>
3.2 Archaeology				
3.2.1 Pre-Contact and Contact Indigenous Archaeological Sites	<ul style="list-style-type: none"> No registered sites within this alternative, however archaeological potential is present within much of this alternative. <p style="text-align: center;">LOW NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No registered sites within this alternative, however archaeological potential is present within much of this alternative. <p style="text-align: center;">LOW NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No registered sites within this alternative, however archaeological potential is present within much of this alternative. <p style="text-align: center;">LOW NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No registered sites within this alternative, however archaeological potential is present within much of this alternative. <p style="text-align: center;">LOW NET EFFECT RANKING: 1st</p>

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2	Alternative S4-3	Alternative S4-4
Summary of Potential Net Effects and Ranking				
	No registered pre-contact and contact Indigenous sites are present within this alternative. This alternative contains 198 hectares of undisturbed land containing archaeological potential.	No registered pre-contact and contact Indigenous sites are present within this alternative. This alternative contains 227 hectares of undisturbed land containing archaeological potential.	No registered pre-contact and contact Indigenous sites are present within this alternative. This alternative contains 184 hectares of undisturbed land containing archaeological potential.	No registered pre-contact and contact Indigenous sites are present within this alternative. This alternative contains 191 hectares of undisturbed land containing archaeological potential.
3.2.2 Historic Euro-Canadian Archaeological Sites	<ul style="list-style-type: none"> No registered sites within this alternative, however archaeological potential is present within much of this alternative. <p>LOW NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No registered sites within this alternative, however archaeological potential is present within much of this alternative. <p>LOW NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No registered sites within this alternative, however archaeological potential is present within much of this alternative. <p>LOW NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No registered sites within this alternative, however archaeological potential is present within much of this alternative. <p>LOW NET EFFECT RANKING: 1st</p>
	No registered Historic Euro-Canadian Archaeological Sites are present within this alternative. This alternative contains 198 hectares of undisturbed land containing archaeological potential.	No registered Historic Euro-Canadian Archaeological Sites are present within this alternative. This alternative contains 227 hectares of undisturbed land containing archaeological potential.	No registered Historic Euro-Canadian Archaeological Sites are present within this alternative. This alternative contains 184 hectares of undisturbed land containing archaeological potential.	No registered Historic Euro-Canadian Archaeological Sites are present within this alternative. This alternative contains 191 hectares of undisturbed land containing archaeological potential.
3.2.3 Indigenous Burial Sites	<ul style="list-style-type: none"> No known or reported Indigenous Burial Sites. <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No known or reported Indigenous Burial Sites. <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No known or reported Indigenous Burial Sites. <p>NO NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No known or reported Indigenous Burial Sites. <p>NO NET EFFECT RANKING: 1st</p>
	No difference between alternatives.	No difference between alternatives.	No difference between alternatives.	No difference between alternatives.
3.2.4 Cemeteries	<ul style="list-style-type: none"> No registered cemeteries present within this alternative. <p>LOW NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> 1 registered cemetery is present within this alternative. <p>HIGH NET EFFECT RANKING: 4th</p>	<ul style="list-style-type: none"> No registered cemeteries present within this alternative. <p>LOW NET EFFECT RANKING: 1st</p>	<ul style="list-style-type: none"> No registered cemeteries present within this alternative. <p>LOW NET EFFECT RANKING: 1st</p>
	No registered cemeteries are present within this alternative. A total of 198 hectares of undisturbed land containing archaeological potential is found within this alternative.	1 registered cemetery is located within this alternative. As well, a total of 227 hectares of undisturbed land containing archaeological potential is present.	No registered cemeteries are present within this alternative. A total of 184 hectares of undisturbed land containing archaeological potential is found within this alternative.	No registered cemeteries are present within this alternative. A total of 191 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	<ul style="list-style-type: none"> Supports efficient movement of people. Improves transportation options for travellers. <p>HIGH CAPACITY & EFFICIENCY RANKING: 1st</p>	<ul style="list-style-type: none"> Supports efficient movement of people. Improves transportation options for travellers. <p>HIGH CAPACITY & EFFICIENCY RANKING: 1st</p>	<ul style="list-style-type: none"> Supports efficient movement of people. Improves transportation options for travellers. <p>HIGH CAPACITY & EFFICIENCY RANKING: 1st</p>	<ul style="list-style-type: none"> Supports efficient movement of people. Improves transportation options for travellers. <p>HIGH CAPACITY & EFFICIENCY RANKING: 1st</p>
	Comparable net effect to other alternatives.	Comparable net effect to other alternatives.	Comparable net effect to other alternatives.	Comparable net effect to other alternatives.
4.1.2 Movement of Goods	<ul style="list-style-type: none"> Supports efficient movement of goods. <p>HIGH CAPACITY & EFFICIENCY RANKING: 1st</p>	<ul style="list-style-type: none"> Supports efficient movement of goods. <p>HIGH CAPACITY & EFFICIENCY RANKING: 1st</p>	<ul style="list-style-type: none"> Supports efficient movement of goods. <p>HIGH CAPACITY & EFFICIENCY RANKING: 1st</p>	<ul style="list-style-type: none"> Supports efficient movement of goods. <p>HIGH CAPACITY & EFFICIENCY RANKING: 1st</p>
	Comparable net effect to other alternatives.	Comparable net effect to other alternatives.	Comparable net effect to other alternatives.	Comparable net effect to other alternatives.

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2	Alternative S4-3	Alternative S4-4
Summary of Potential Net Effects and Ranking				
4.1.3 System performance during peak periods	<ul style="list-style-type: none"> Improves system performance during peak periods. 	<ul style="list-style-type: none"> Improves system performance during peak periods. 	<ul style="list-style-type: none"> Improves system performance during peak periods. 	<ul style="list-style-type: none"> Improves system performance during peak periods.
	<p>HIGH PERFORMANCE</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH PERFORMANCE</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH PERFORMANCE</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH PERFORMANCE</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>
4.2 System reliability / redundancy	<ul style="list-style-type: none"> Supports system reliability and redundancy. 	<ul style="list-style-type: none"> Supports system reliability and redundancy. 	<ul style="list-style-type: none"> Supports system reliability and redundancy. 	<ul style="list-style-type: none"> Supports system reliability and redundancy.
	<p>HIGH RELIABILITY / REDUNDANCY</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH RELIABILITY / REDUNDANCY</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH RELIABILITY / REDUNDANCY</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH RELIABILITY / REDUNDANCY</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>
4.3 Safety				
4.3.1 Traffic Safety	<ul style="list-style-type: none"> Improves traffic safety. 	<ul style="list-style-type: none"> Improves traffic safety. 	<ul style="list-style-type: none"> Improves traffic safety. 	<ul style="list-style-type: none"> Improves traffic safety.
	<p>HIGH POTENTIAL FOR IMPROVEMENT</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH POTENTIAL FOR IMPROVEMENT</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH POTENTIAL FOR IMPROVEMENT</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH POTENTIAL FOR IMPROVEMENT</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>
4.3.2 Emergency Access	<ul style="list-style-type: none"> Supports emergency service access / routing. 	<ul style="list-style-type: none"> Supports emergency service access / routing. 	<ul style="list-style-type: none"> Supports emergency service access / routing. 	<ul style="list-style-type: none"> Supports emergency service access / routing.
	<p>HIGH ACCESS</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH ACCESS</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH ACCESS</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH ACCESS</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>
4.4 Mobility & Accessibility				
4.4.1 Modal integration and balance	<ul style="list-style-type: none"> Improves transportation options for travellers. 	<ul style="list-style-type: none"> Improves transportation options for travellers. 	<ul style="list-style-type: none"> Improves transportation options for travellers. 	<ul style="list-style-type: none"> Improves transportation options for travellers.
	<p>HIGH POTENTIAL FOR IMPROVEMENT</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH POTENTIAL FOR IMPROVEMENT</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH POTENTIAL FOR IMPROVEMENT</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH POTENTIAL FOR IMPROVEMENT</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>
4.4.2 Linkages to Population and Employment Centres	<ul style="list-style-type: none"> Improves linkages to population and employment centres. 	<ul style="list-style-type: none"> Improves linkages to population and employment centres. 	<ul style="list-style-type: none"> Improves linkages to population and employment centres. 	<ul style="list-style-type: none"> Improves linkages to population and employment centres.
	<p>HIGH ACCESSIBILITY</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH ACCESSIBILITY</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH ACCESSIBILITY</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH ACCESSIBILITY</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>
4.4.3 Recreation and Tourism Travel	<ul style="list-style-type: none"> Supports recreation and tourism travel. 	<ul style="list-style-type: none"> Supports recreation and tourism travel. 	<ul style="list-style-type: none"> Supports recreation and tourism travel. 	<ul style="list-style-type: none"> Supports recreation and tourism travel.
	<p>HIGH SUPPORT</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH SUPPORT</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH SUPPORT</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>	<p>HIGH SUPPORT</p> <p>RANKING: 1st</p> <p>Comparable net effect to other alternatives.</p>
4.4.4 Accommodation for pedestrians, cyclists, snowmobiles, and specialized vehicles	<ul style="list-style-type: none"> High potential to accommodate pedestrians, cyclists and specialized vehicles at grade separated crossings. 	<ul style="list-style-type: none"> High potential to accommodate pedestrians, cyclists and specialized vehicles at grade separated crossings. 	<ul style="list-style-type: none"> High potential to accommodate pedestrians, cyclists and specialized vehicles at grade separated crossings. 	<ul style="list-style-type: none"> High potential to accommodate pedestrians, cyclists and specialized vehicles at grade separated crossings.

Evaluation Factors and Sub-Factors	Alternative S4-1 - Preferred	Alternative S4-2	Alternative S4-3	Alternative S4-4
	Summary of Potential Net Effects and Ranking			
	HIGH ACCOMMODATION RANKING: 1st Comparable net effect to other alternatives.	HIGH ACCOMMODATION RANKING: 1st Comparable net effect to other alternatives.	HIGH ACCOMMODATION RANKING: 1st Comparable net effect to other alternatives.	HIGH ACCOMMODATION RANKING: 1st Comparable net effect to other alternatives.
4.5 Network Compatibility				
4.5.1 Network connectivity	<ul style="list-style-type: none"> Improves network connectivity. Improves transportation options for travellers. 	<ul style="list-style-type: none"> Improves network connectivity. Improves transportation options for travellers. 	<ul style="list-style-type: none"> Improves network connectivity. Improves transportation options for travellers. 	<ul style="list-style-type: none"> Improves network connectivity. Improves transportation options for travellers.
	HIGH CONNECTIVITY RANKING: 1st Comparable net effect to other alternatives.	HIGH CONNECTIVITY RANKING: 1st Comparable net effect to other alternatives.	HIGH CONNECTIVITY RANKING: 1st Comparable net effect to other alternatives.	HIGH CONNECTIVITY RANKING: 1st Comparable net effect to other alternatives.
4.5.2 Flexibility for future expansion	<ul style="list-style-type: none"> Provides flexibility for future expansion. 	<ul style="list-style-type: none"> Provides flexibility for future expansion. 	<ul style="list-style-type: none"> Provides flexibility for future expansion. 	<ul style="list-style-type: none"> Provides flexibility for future expansion.
	HIGH FLEXIBILITY RANKING: 1st Comparable net effect to other alternatives.	HIGH FLEXIBILITY RANKING: 1st Comparable net effect to other alternatives.	HIGH FLEXIBILITY RANKING: 1st Comparable net effect to other alternatives.	HIGH FLEXIBILITY RANKING: 1st Comparable net effect to other alternatives.
4.6 Engineering				
4.6.1 Constructability	<ul style="list-style-type: none"> Railway crossing and multiple watercourse crossings. 	<ul style="list-style-type: none"> Railway crossing and multiple watercourse crossings. 	<ul style="list-style-type: none"> Railway crossing and multiple watercourse crossings. 	<ul style="list-style-type: none"> Railway crossing and multiple watercourse crossings.
	MODERATE POTENTIAL FOR CONSTRUCTABILITY ISSUES RANKING: 1st Comparable net effect to other alternatives.	MODERATE POTENTIAL FOR CONSTRUCTABILITY ISSUES RANKING: 1st Comparable net effect to other alternatives.	MODERATE POTENTIAL FOR CONSTRUCTABILITY ISSUES RANKING: 1st Comparable net effect to other alternatives.	MODERATE POTENTIAL FOR CONSTRUCTABILITY ISSUES RANKING: 1st Comparable net effect to other alternatives.
4.6.2 Compliance with design criteria	<ul style="list-style-type: none"> High conformity to safety and design standards. 	<ul style="list-style-type: none"> High conformity to safety and design standards. 	<ul style="list-style-type: none"> High conformity to safety and design standards. 	<ul style="list-style-type: none"> High conformity to safety and design standards.
	HIGH CONFORMITY RANKING: 1st Comparable net effect to other alternatives.	HIGH CONFORMITY RANKING: 1st Comparable net effect to other alternatives.	HIGH CONFORMITY RANKING: 1st Comparable net effect to other alternatives.	HIGH CONFORMITY RANKING: 1st Comparable net effect to other alternatives.
4.7 Construction Cost	<ul style="list-style-type: none"> Estimated Cost \$205 Million 	<ul style="list-style-type: none"> Estimated Cost \$211 Million 	<ul style="list-style-type: none"> Estimated Cost \$205 Million 	<ul style="list-style-type: none"> Estimated Cost \$204 Million
	MODERATE RELATIVE COST RANKING: 1st Comparable relative cost to Alternatives S4-3 and S4-4.	HIGH RELATIVE COST RANKING: 4th Higher relative cost than Alternatives S4-1, S4-3 and S4-4.	MODERATE RELATIVE COST RANKING: 1st Comparable relative cost to Alternatives S4-1 and S4-4.	MODERATE RELATIVE COST RANKING: 1st Comparable relative cost to Alternatives S4-1 and S4-3.
4.8 Traffic Operations	<ul style="list-style-type: none"> Complies with design standards and maintains local road network connectivity. 	<ul style="list-style-type: none"> Complies with design standards and maintains local road network connectivity but may result in less than desirable geometry for required road realignments. 	<ul style="list-style-type: none"> Complies with design standards and maintains local road network connectivity. 	<ul style="list-style-type: none"> Complies with design standards and maintains local road network connectivity.
	LOW POTENTIAL FOR NEGATIVE EFFECT RANKING: 1st Comparable net effect to Alternatives S4-3 and S4-4.	MODERATE POTENTIAL FOR NEGATIVE EFFECT RANKING: 4th Higher negative effect than Alternatives S4-1, S4-3 and S4-4.	LOW POTENTIAL FOR NEGATIVE EFFECT RANKING: 1st Comparable net effect to Alternatives S4-1 and S4-4.	LOW POTENTIAL FOR NEGATIVE EFFECT RANKING: 1st Comparable net effect to Alternatives S4-1 and S4-3.