

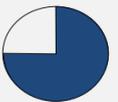
APPENDIX P

New Complete Street Evaluation

ANALYSIS AND EVALUATION OF COMPLETE STREETS ALTERNATIVES



Evaluation Criteria	Do Nothing	Street Alignment Option C1	Street Alignment Option C2	Street Alignment Option C3	Street Alignment Option C4
Key Map of Alternatives					
Policies and Guidelines	<ul style="list-style-type: none"> Does not address recommendations in the Agincourt Secondary Plan and Official Plan 	<ul style="list-style-type: none"> Consistent with key provincial and municipal planning and transportation policy objectives (supporting active transportation) Addresses recommendation in Agincourt Secondary Plan Least amount of impact to lands regulated under TRCA's Regulations of Development, Interference with Wetlands and Alternations to Shoreline and Watercourses (<i>O.Reg. 166/06</i>) Promotes active transportation through the potential cycling facility link between Gordon Avenue and Agincourt GO station driveway 	<ul style="list-style-type: none"> Consistent with key provincial and municipal planning and transportation policy objectives (including the Agincourt Secondary Plan) Addresses recommendation in Agincourt Secondary Plan Minor impacts to lands regulated under TRCA's Regulations of Development, Interference with Wetlands and Alternations to Shoreline and Watercourses (<i>O.Reg. 166/06</i>) Provides street frontage for a public park Promotes active transportation through the potential cycling facility link between 	<ul style="list-style-type: none"> Consistent with key provincial and municipal planning and transportation policy objectives (including the Agincourt Secondary Plan) Addresses recommendation in Agincourt Secondary Plan Notable impacts to lands regulated under TRCA's Regulations of Development, Interference with Wetlands and Alternations to Shoreline and Watercourses (<i>O.Reg. 166/06</i>) Similar to other options from a transportation policy perspective 	<ul style="list-style-type: none"> Consistent with key provincial and municipal planning and transportation policy objectives (including the Agincourt Secondary Plan) Addresses recommendation in Agincourt Secondary Plan Notable impacts to lands regulated under TRCA's Regulations of Development, Interference with Wetlands and Alternations to Shoreline and Watercourses (<i>O.Reg. 166/06</i>) Similar to other options from a transportation policy perspective

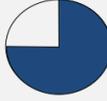
Evaluation Criteria	Do Nothing	Street Alignment Option C1	Street Alignment Option C2	Street Alignment Option C3	Street Alignment Option C4
		<ul style="list-style-type: none"> Does not preclude expansion of Collingwood Park to the west Similar to other options from a transportation policy perspective 	<p>Gordon Avenue and Agincourt GO station driveway</p> <ul style="list-style-type: none"> Features a jogged alignment, which is not desirable from a transportation policy perspective, which encourages continuous and direct streets 		
Addressing Problem and/or Opportunity Statement	 <ul style="list-style-type: none"> Does not address Problem and/or Opportunity Statement 	 <ul style="list-style-type: none"> Consistent with Problem/Opportunity Statement 	 <ul style="list-style-type: none"> Consistent with Problem/Opportunity Statement 	 <ul style="list-style-type: none"> Limited transportation effectiveness at addressing the Problem/Opportunity Statement Provides street frontage to Collingwood Park 	 <ul style="list-style-type: none"> Consistent with Problem/Opportunity Statement Provides street frontage to Collingwood Park Direct access to the Agincourt GO station
Policy Framework Summary:					
<ul style="list-style-type: none"> All alignment options are consistent with key provincial and municipal planning and transportation policy objectives (including the Agincourt Secondary Plan). Alignments C3 and C4 will result in impacts to TRCA regulated areas protected under O.Reg. 166/06, and would require TRCA permits and approvals. Alignment C2 features a jogged alignment, which is not desirable from a transportation policy perspective, which encourages continuous and direct streets. As a result, C1 is preferred over C2, C3, C4 and Do Nothing. 					
HEALTHY COMMUNITIES					
Promotion of transportation choice through the provision of well-connected, continuous, and comfortable cycling and walking routes	 <ul style="list-style-type: none"> No change to existing conditions with no cycling facility and limited /circuitous pedestrian network that is a disincentive for active transportation. 	 <ul style="list-style-type: none"> Provides good connectivity between existing sidewalks and roadways, the Collingwood Park trail through Collingwood St (addition of a sidewalk on Collingwood St has been proposed via the “Optimization of existing streets & intersections” component of this study). In the interim conditions before the City implements a broader active transportation initiative along Sheppard Avenue, there may be a constrained active transportation link between Gordon Ave and the Agincourt GO station driveway due to the crossing over West Highland Creek. 	 <ul style="list-style-type: none"> Provides good connectivity between existing sidewalks and roadways, the Collingwood Park trail through its direct access to Collingwood Park, the proposed addition of a sidewalk on Collingwood St via the “Optimization of existing streets & intersections” component of this study. In the interim conditions before the City implements a broader active transportation initiative along Sheppard Avenue, there may be a constrained active transportation link between Gordon Ave and the Agincourt GO station driveway due to the crossing over West Highland Creek. 	 <ul style="list-style-type: none"> Provides good connectivity between existing sidewalks and roadways, the Collingwood Park trail through its direct access to Collingwood Park, the proposed addition of a sidewalk on Collingwood St via the “Optimization of existing streets & intersections” component of this study. Due to the signal spacing constraint, the connection of C3 onto Sheppard Avenue will need to be unsignalized, which diminishes the connectivity aspect with the neighbourhood north of Sheppard along Reidmount Avenue. 	 <ul style="list-style-type: none"> Provides good connectivity between existing sidewalks and roadways, the Collingwood Park trail through its direct access to Collingwood Park, the proposed addition of a sidewalk on Collingwood St via the “Optimization of existing streets & intersections” component of this study, and through its alignment with the Agincourt GO station driveway.
Potential to incorporate streetscape amenities and landscape elements	 <ul style="list-style-type: none"> No change to existing conditions. 	 <ul style="list-style-type: none"> Since this alignment incorporates existing segments of Gordon Avenue, there are more limitations on the cross-section development in terms of streetscape and landscape elements. 	 <ul style="list-style-type: none"> Since this alignment incorporates existing segments of Gordon Avenue and Collingwood Street, there are more limitations on the cross-section development in terms of streetscape and landscape elements. 	 <ul style="list-style-type: none"> This alignment allows for a clean slate for incorporating streetscape amenities and landscape elements. 	 <ul style="list-style-type: none"> This alignment allows for a clean slate for incorporating streetscape amenities and landscape elements.

Evaluation Criteria	Do Nothing	Street Alignment Option C1	Street Alignment Option C2	Street Alignment Option C3	Street Alignment Option C4
Supports accessible network for all ages and abilities	<ul style="list-style-type: none"> No change to existing conditions. 	<ul style="list-style-type: none"> Alignment option supports an accessible network for all ages and abilities. 	<ul style="list-style-type: none"> Alignment option supports an accessible network for all ages and abilities. 	<ul style="list-style-type: none"> Even though alignment option will be designed to support an accessible network for all ages and abilities, due to the need to cross the West Highland Creek, there will be a greater change in the street grade than C1 and C2. 	<ul style="list-style-type: none"> Even though alignment option will be designed to support an accessible network for all ages and abilities, due to the need to cross the West Highland Creek, there will be a greater change in the street grade than C1 and C2.
Greenhouse gas emissions	<ul style="list-style-type: none"> Results in traffic congestions and long queues that are known to contribute to greenhouse gas emissions. 	<ul style="list-style-type: none"> Creates 2 new smaller intersections and uses an existing intersection at Gordon and Sheppard. Reduced GHG emissions from shorter length and less idling at intersections This alignment allows for a good flow of traffic and will therefore has the lowest GHG emissions 	<ul style="list-style-type: none"> Creates 3 new smaller intersections and uses an existing intersection at Gordon and Sheppard. Reduced GHG emissions from shorter length (however longer than alternative 1) and less idling at intersections This alignment will constrict the flow of traffic and will therefore increase GHG emissions compared to C1. 	<ul style="list-style-type: none"> Creates 2 new smaller intersections, and one larger intersection where the proposed road would meet Sheppard. This alignment is curved at the beginning and expected to allow traffic to flow to be more restricted reducing GHG emissions Although length similar to C1, the additional intersection will increase GHG emissions from idling 	<ul style="list-style-type: none"> Creates 2 new smaller intersections, and one larger intersection where the proposed road would meet Sheppard. This alignment is straighter than C3 and expected to allow traffic to flow more freely therefore reducing GHG emissions Length similar to C1 and 3, but the additional intersection will increase GHG emissions from idling
Impacts to air quality	<ul style="list-style-type: none"> No change to existing receptors – however, some locations will have higher air quality impacts due to increased volumes relying on the limited road network causing congestion and queuing. 	<ul style="list-style-type: none"> ~540m in length; Creates 2 new intersections (@Cowdray and @Collingwood); Routes through existing commercial/mixed use land use zone, and neighbourhood land use zone. Does not affect new air quality receptors. 	<ul style="list-style-type: none"> ~640m in length; Creates 2 new intersections (@Cowdray and @Collingwood); Increased air emissions due to longer lengths (re-entrainment, and Overall emissions) compared to other alignments Routes through existing commercial/mixed use land use zone, and neighbourhood land use zone. Does not affect new air quality receptors. 	<ul style="list-style-type: none"> ~530m in length; Creates 3 new intersections (@Cowdray, @Collingwood, and @Sheppard); Increased idling air emissions due to 3 intersections instead of 2 Routes through existing commercial/mixed use land use zone, newly segments park/natural area and a neighbourhood/apartment land use zone. Potential to impact one new air quality receptor (4091 & 4101 Sheppard Ave E). 	<ul style="list-style-type: none"> ~500m in length; Creates 3 new intersections (@Cowdray, @Collingwood, and @Sheppard); Increased idling air emissions due to 3 intersections instead of 2 Routes through existing commercial/mixed use land use zone, newly segments park/natural area and a neighbourhood/apartment land use zone. Potential to impact one new air quality receptor (4091 & 4101 Sheppard Ave E).
Connections to Key Destinations and Community Facilities (e.g. Agincourt GO, parks, community centres)	<ul style="list-style-type: none"> No change to existing poor level of connectivity. 	<ul style="list-style-type: none"> Enhances connectivity by connecting active transportation facilities from Sheppard Ave E to Village Green Sq. via Gordon Ave, Collingwood St and Cowdray CT. Requires interim active transportation connection between Gordon Avenue and the Agincourt GO station driveway. 	<ul style="list-style-type: none"> Enhances connectivity by connecting active transportation facilities from Sheppard Ave E to Village Green Sq. via Gordon Ave, Collingwood St and Cowdray CT. Requires interim active transportation connection between Gordon Avenue and the Agincourt GO station driveway Provides direct street frontage to Collingwood Park to improve access for all users. 	<ul style="list-style-type: none"> Enhances connectivity by connecting active transportation facilities from Sheppard Ave E to Village Green Sq. via Collingwood St and Cowdray CT. Provides direct street frontage to Collingwood Park to improve access for all users. 	<ul style="list-style-type: none"> Enhances connectivity by connecting active transportation facilities from Sheppard Ave E to Village Green Sq. via Collingwood St and Cowdray CT. Proposed street aligns with Agincourt GO station driveway and associated sidewalk. Provides direct street frontage to Collingwood Park to improve access for all users.
Healthy Communities Summary:					
<p>Overall, C1, C2 and C4 are evenly preferred from a Healthy Communities perspective for the following reasons:</p> <ul style="list-style-type: none"> These alignment options enhance connectivity to community facilities. There are trade offs between the different options on air quality impact and landscaping opportunities. 					

Evaluation Criteria	Do Nothing	Street Alignment Option C1	Street Alignment Option C2	Street Alignment Option C3	Street Alignment Option C4
EQUITABLE MOBILITY					
Provide equitable, safe & reliable access to high quality, efficient transit, walking & cycling routes	 <ul style="list-style-type: none"> No change to existing poor level of access to transit. No improvement to pedestrian or cycling facilities. 	 <ul style="list-style-type: none"> Provides effective connection to Sheppard Ave for transit access (with signals at Gordon/Sheppard). Opportunity for high-quality walking and cycling facilities on N/S street, with good access from existing and planned communities. 	 <ul style="list-style-type: none"> Provides effective connection to Sheppard Ave for transit access (with signals at Gordon/Sheppard). Opportunity for high-quality walking and cycling facilities on N/S street, with good access from existing and planned communities. 	 <ul style="list-style-type: none"> Opportunity for high-quality walking and cycling facilities on n/s street, with fair access from existing and planned communities. N-S street does not intersect Sheppard as a signalized intersection, therefore only partial access, but walk/bike access to new and existing communities. N/S street is not central to existing community for them to use the new active transportation facilities. 	 <ul style="list-style-type: none"> Provides effective connection to Sheppard Ave for transit access. Opportunity for high-quality walking and cycling facilities on n/s street, with good access from existing and planned communities to the GO station. N/S street is not central to existing community for them to use the new active transportation facilities.
Mitigate vehicular congestion (travel time & intersection operations)	 <ul style="list-style-type: none"> No improvement to congestion in the study area; level of service is expected to deteriorate with planned area developments. Arterial travel time along Sheppard: AM – EB: 198sec, WB: 236sec PM - EB: 208sec, WB: 183sec SAT – EB: 197sec, WB: 209sec Total: 1,231 seconds Arterial travel time along Kennedy: AM - NB: 270sec, SB: 367sec PM – NB: 276sec, SB:296sec SAT – NB: 280sec, SB:267sec Total: 1,756 seconds Delay @ Kennedy and Sheppard AM – 88sec, 1.29 PM – 101sec, 1.35 SAT– 156sec, 1.58 Worse operation than all options Delay @ Kennedy and VGS AM – 20 sec, 0.85 PM – 62 sec, 0.88 SAT– 21 sec, 0.82 Worse operation than all options 	 <ul style="list-style-type: none"> Arterial travel time along Sheppard in the study area: AM – EB: 200 sec, WB: 260 sec PM - EB: 223 sec, WB: 204 sec SAT - EB: 239 sec, WB: 250 sec Total: 1,376 seconds Arterial travel time along Kennedy in the study area: AM - NB: 244 sec, SB: 312 sec PM – NB: 272 sec, SB:313 sec SAT – NB:262 sec, SB: 292 sec Total: 1,695 seconds Delay @ Kennedy and Sheppard AM – 54 sec, v/c ratio: 1.01 PM – 54 sec, v/c ratio:0.98 SAT– 76 sec, v/c ratio:1.04 Best intersection operations of the 4 options Delay @ Kennedy and Village Green Sq AM – 19 sec, v/c ratio: 0.77 PM – 17sec, v/c ratio: 0.78 SAT– 65 sec, v/c ratio: 0.77 	 <ul style="list-style-type: none"> Arterial travel time along Sheppard in the study area: AM – EB: 200 sec, WB: 260 sec PM – EB: 224 sec, WB: 207 sec SAT – EB: 239 sec, WB: 250 sec Total: 1,380 seconds Arterial travel time along Kennedy in the study area: AM – NB: 242 sec, SB: 311 sec PM – NB: 276 sec, SB: 306 sec SAT – NB: 257 sec, SB: 290 sec Total: 1,682 seconds Delay @ Kennedy and Sheppard AM – 54 sec, v/c ratio:1.01 PM – 54sec, v/c ratio:1.01 SAT– 76 sec, v/c ratio:1.04 Delay @ Kennedy and Village Green Sq AM – 18 sec, v/c ratio: 0.72 PM – 17 sec, v/c ratio: 0.76 SAT– 29 sec, v/c ratio: 0.72 Best intersection operations of the 4 options 	 <ul style="list-style-type: none"> Arterial travel time along Sheppard in the study area: AM – EB: 195 sec, WB: 238 sec PM – EB: 208 sec, WB: 194 sec SAT – EB: 221 sec, WB: 251 sec Total: 1,307 seconds Arterial travel time along Kennedy in the study area: AM – NB: 252 sec, SB: 476 sec PM – NB: 267 sec, SB: 387 sec SAT – NB:270 sec, SB: 292 sec Total: 1,944 seconds Delay @ Kennedy and Sheppard AM – 114 sec, v/c ratio:1.20 PM – 98 sec, v/c ratio:1.22 SAT– 140 sec, v/c ratio:1.45 Worst operations of 4 options at this intersection Delay @ Kennedy and Village Green Sq AM – 19 sec, v/c ratio: 0.83 PM – 23 sec, v/c ratio: 0.86 SAT– 89 sec, v/c ratio: 0.79 Worst operations of 4 options at this intersection 	 <ul style="list-style-type: none"> Arterial travel time along Sheppard in the study area: AM – EB: 205 sec, WB: 247 sec PM – EB: 211 sec, WB: 194 sec SAT – EB: 210 sec, WB:210 sec Total: 1,277 seconds Arterial travel time along Kennedy in the study area: AM – NB: 246 sec, SB: 313 sec PM – NB: 262 sec, SB: 312 sec SAT – NB:265 sec, SB:279 sec Total: 1,677 seconds Delay @ Kennedy and Sheppard AM – 50 sec, v/c ratio: 1.01 PM – 54 sec, v/c ratio: 1.01 SAT– 45 sec, v/c ratio: 1.03 Delay @ Kennedy and Village Green Sq AM – 20 sec, v/c ratio: 0.80 PM – 19 sec, v/c ratio: 0.81 SAT– 19 sec, v/c ratio: 0.76
Compatibility with future transit infrastructure & services	 <ul style="list-style-type: none"> No change to existing; does not preclude any transit infrastructure on Sheppard Ave but does not facilitate transit access into the developing communities. 	 <ul style="list-style-type: none"> New signal at Sheppard and Gordon should be designed to accommodate potential for higher order transit along Sheppard to avoid future conflict. 	 <ul style="list-style-type: none"> New signal at Sheppard and Gordon should be designed to accommodate potential for higher order transit along Sheppard to avoid future conflict. 	 <ul style="list-style-type: none"> Due to signal spacing constraint and the need to maintain the traffic signal at the Agincourt GO station driveway, the north-south link to Sheppard will need to be unsignalized and only limited movements would be permitted, which limits potential TTC bus movements at the intersection 	 <ul style="list-style-type: none"> Street alignment at the Agincourt GO station driveway creates the potential for TTC buses to enter the GO station if desired. Optimizes potential bus connectivity to the Agincourt GO Station.

Evaluation Criteria	Do Nothing	Street Alignment Option C1	Street Alignment Option C2	Street Alignment Option C3	Street Alignment Option C4
		<ul style="list-style-type: none"> New N/S street provides for effective local transit route to serve existing and planned communities. 	<ul style="list-style-type: none"> New N/S street provides for effective local transit route, although turns along the alignment will increase travel time 	<ul style="list-style-type: none"> with Sheppard, and limits transit routings in the community. Since the N-S street is not centrally located, harder for potential local bus route to serve existing community along Gordon and Collingwood. 	<ul style="list-style-type: none"> Since the N-S street is not centrally located, harder for potential local bus route to serve existing community along Gordon and Collingwood.
New/improved pedestrian routes and connections	 <ul style="list-style-type: none"> No change to existing; pedestrian access from Village Green to Sheppard Avenue and GO station is poor. No improvement to existing connections from Cowdray Court development. 	 <ul style="list-style-type: none"> Sidewalk along at least one side of Collingwood Street can be built. New sidewalks will be built on both sides of the new street. Better access to Kennedy and Sheppard intersection and Agincourt Mall 	 <ul style="list-style-type: none"> Sidewalk along at least one side of Collingwood Street can be built. New sidewalks will be built on both sides of the new street. Better access to Kennedy and Sheppard intersection and Agincourt Mall. 	 <ul style="list-style-type: none"> Sidewalk along at least one side of Collingwood Street can be built. New sidewalks will be built on both sides of the new street. Better access to Agincourt GO station. 	 <ul style="list-style-type: none"> Sidewalk along at least one side of Collingwood Street can be built. New sidewalks will be built on both sides of the new street. Better access to Agincourt GO station.
New/improved cycling routes and connections	 <ul style="list-style-type: none"> No change to existing; no cycling infrastructure 	 <ul style="list-style-type: none"> The cross-section of the north-south street is partially limited and dictated by the existing layout along Gordon Avenue. For example the number of driveways along Gordon Avenue makes two-way cycling or trail facilities infeasible. 	 <ul style="list-style-type: none"> The cross-section of the north-south street is partially limited and dictated by the existing layout along Gordon Avenue and Collingwood Street. For example the number of driveway along Gordon Avenue makes two-way cycling or trail facilities infeasible. The additional intersection along this alignment at Collingwood St relative to C1 results in a more circuitous route for cyclists. 	 <ul style="list-style-type: none"> More flexibility to design the cycling component of the cross-section than C1 or C2. Leads to unsignalized intersection at Sheppard, resulting in the need to provide a short interim cycling facility for crossings of Sheppard. 	 <ul style="list-style-type: none"> More flexibility to design the cycling component of the cross-section than C1 or C2.
Traffic impacts to existing streets/residents	 <ul style="list-style-type: none"> Traffic volumes will increase along Village Green Square and Cowdray Court to a greater degree than they would under the other options, as there is no alternative route. Minimal traffic change expected along remaining streets and residents in the study area. 	 <ul style="list-style-type: none"> Changes the traffic volumes along Gordon Avenue, however, Vision Zero safety design measures can minimize speeding or queuing in the neighbourhood. 	 <ul style="list-style-type: none"> Changes the traffic volumes along Gordon Avenue and Collingwood Street, however, Vision Zero safety design measures can minimize speeding or queuing in the neighbourhood. 	 <ul style="list-style-type: none"> Since the N/S street intersection at Sheppard will be unsignalized, a substantial portion of the future traffic demand will still need to rely on existing streets such as Cowdray Court and Village Green Square for access, resulting in traffic impacts to these existing streets. Minor changes to the traffic volumes along Gordon Avenue and Collingwood Street, however, Vision Zero safety design measures can minimize speeding or queuing in the neighbourhood. 	 <ul style="list-style-type: none"> Impacts more residents than Options C1 and C2 due to the higher density condos at 4091 and 4101 Sheppard Avenue East. (pick-up/drop-off, parking and servicing accesses). Minor changes to the traffic volumes along Gordon Avenue and Collingwood Street, however, Vision Zero safety design measures can minimize speeding or queuing in the neighbourhood.
Network resiliency for emergency service vehicles	 <ul style="list-style-type: none"> Emergency vehicle access is worse than under the other options, as access routes to Village Green Square and Cowdray Court are severely limited (no resilience). 	 <ul style="list-style-type: none"> Doubles emergency access routes to Village Green Square, Cowdray Court, Gordon Avenue and Collingwood Street. Provides a new non-flood impacted road, which is preferred for routing emergency service vehicles. Does not improve resiliency to 4091 and 4101 Sheppard Avenue East uses. 	 <ul style="list-style-type: none"> Doubles emergency access routes to Village Green Square, Cowdray Court, Gordon Avenue and Collingwood Street. Provides a new non-flood impacted road, which is preferred for routing emergency service vehicles. Does not improve resiliency to 4091 and 4101 Sheppard Avenue East uses. 	 <ul style="list-style-type: none"> Due to signal spacing constraint and the need to maintain the traffic signal at the Agincourt GO station driveway, the north-south link to Sheppard will need to be unsignalized, marginally reducing emergency access resilience. New road may be classified as a flood impacted road, which is typically avoided when routing emergency service vehicles. 	 <ul style="list-style-type: none"> Provides a new north-south link connection to Sheppard Avenue East in addition to Gordon Avenue via a signalized intersection. Improves emergency access to Village Green Square, Cowdray Court, Gordon Avenue and Collingwood Street.

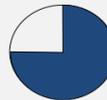
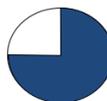
Evaluation Criteria	Do Nothing	Street Alignment Option C1	Street Alignment Option C2	Street Alignment Option C3	Street Alignment Option C4
					<ul style="list-style-type: none"> New road may be classified as a flood impacted road, which is typically avoided when routing emergency service vehicles. Provides additional routing option emergency access for the condominiums at 4091 and 4101 Sheppard Avenue East (if Sheppard Ave access is restricted).
Equitable Mobility Summary:					
<p>Overall C1 and C4 are evenly preferred from an Equitable Mobility perspective for the following reasons:</p> <ul style="list-style-type: none"> Both options provide a signalized access onto Sheppard Avenue East to enhance the ease of crossing Sheppard for all modes of transportation. Both options improve traffic operations in the study area relative to “Do Nothing” and offer direct routes for all modes of transportation. There are trade offs with changes and impacts to traffic patterns along existing streets, but these can be proactively mitigated with design measures. 					
CONSTRUCTABILITY & DESIGN					
Construction Costs	 <ul style="list-style-type: none"> No cost. 	 <ul style="list-style-type: none"> Leverages segments of existing street network. Existing services on Gordon Ave. and Collingwood St. can be utilized, therefore reducing the need to construct new infrastructure. Existing utilities on Gordon Ave. and Collingwood St. may need to be relocated due to new road layout e.g. hydro poles, street lights, transformers. Does not require crossing over the West Highland Creek. Requires a new signal at the intersection of Sheppard Avenue West and Gordon Avenue. 	 <ul style="list-style-type: none"> Leverages segments of existing street network. Existing services on Gordon Avenue and Collingwood St. can be utilized, therefore reducing the need to construct new infrastructure. Existing utilities on Gordon Ave. and Collingwood St. may need to be relocated due to new road layout e.g. hydro poles, street lights, transformers. Does not require crossing over the West Highland Creek. Requires a new signal at the intersection of Sheppard Avenue West and Gordon Avenue. Longer segment of road that needs to be built relative to option C1. 	 <ul style="list-style-type: none"> High construction cost due to the need for a new street crossing over West Highland Creek (order of magnitude cost: \$3,000,000). Not utilizing existing road alignments, therefore new services will be required for the full extent of the road. 	 <ul style="list-style-type: none"> Features high construction cost due to the need for a new street crossing over West Highland Creek (order of magnitude cost: \$3,000,000). Not utilizing existing road alignments, therefore new services will be required for the full extent of the road.
Impact on Floodplain	 <ul style="list-style-type: none"> No impact on existing floodplain. 	 <ul style="list-style-type: none"> Generally maintains the flood elevations and flood extent under the Regional event compared to current conditions. Max. Regional water level adjacent to the proposed road will be 166.81 m, therefore the proposed road elevation will be sufficient. 	 <ul style="list-style-type: none"> Generally maintain the flood elevations and flood extent under the Regional event compared with the current conditions. Max. Regional water level adjacent to the proposed road will be 166.81 m, therefore the proposed road elevation will be sufficient. 	 <ul style="list-style-type: none"> A new structure will be required for this option. A 31 m span with approximately 5 m high bridge is required to limit the increase the upstream water level by 0.04 m compared with the current conditions. 	 <ul style="list-style-type: none"> A new structure will be required for this option. A 31 m span with approximately 5 m high bridge is coded in the model, the structure will increase the upstream water level by 0.04 m compared with the current conditions.

Evaluation Criteria	Do Nothing	Street Alignment Option C1	Street Alignment Option C2	Street Alignment Option C3	Street Alignment Option C4
		<ul style="list-style-type: none"> Displaces the least amount of West Highland Creek Flood Storage. 	<ul style="list-style-type: none"> Slightly more displaced flood storage compared to Option C1. 	<ul style="list-style-type: none"> Generally the flood extent will be maintained compared with current conditions. Spill on the proposed road will occur north of Collingwood St. for approximately 50 m (max. Regional water level will be 167.13 m) and south of Sheppard Ave. for approximately 50 m (max. Regional water level will be 167.3 m) under the Regional event. Some portions of the road are projected to be impacted by flooding Displaces more flood storage in West Highland Creek. 	<ul style="list-style-type: none"> Generally the flood extent will maintain compared with the current conditions. Spill on the proposed road will occur north of Collingwood St. for approximately 50 m (max. Regional water level will be 167.13 m) and south of Sheppard Ave. for approximately 50 m (max. Regional water level will be 167.3 m) under the Regional event. Some portions of the road are projected to be impacted by flooding. Displaces the most flood storage of West Highland Creek.
Impact on Utilities	<ul style="list-style-type: none"> No impacts to utilities 	 <ul style="list-style-type: none"> Existing services on Gordon Ave. and Collingwood St. can be utilized, therefore reducing the need to construct new infrastructure. Existing utilities on Gordon Ave. and Collingwood St. may need to be relocated due to new road layout e.g. hydro poles, street lights, transformers. 	 <ul style="list-style-type: none"> Existing services on Gordon Avenue and Collingwood St. can be utilized, therefore reducing the need to construct new infrastructure. Existing utilities on Gordon Ave. and Collingwood St. may need to be relocated due to new road layout e.g. hydro poles, street lights, transformers. 	 <ul style="list-style-type: none"> Not utilizing existing road alignments, therefore new services will be required for the full extent of the road. Relocation of existing utilities will not be required on new road alignment. 	 <ul style="list-style-type: none"> Not utilizing existing road alignments, therefore new services will be required for the full extent of the road. Relocation of existing utilities will not be required on new road alignment.
Lifecycle / Operations and maintenance costs of new infrastructure	 <ul style="list-style-type: none"> None required. It is noted that existing roads will likely require additional maintenance due to increased use. 	 <ul style="list-style-type: none"> The road length difference between the 4 options is not substantial. Maintenance of the underpass through the CP Rail corridor would be required. 	 <ul style="list-style-type: none"> The road length difference between the 4 options is not substantial. Maintenance of the underpass through the CP Rail corridor would be required. 	 <ul style="list-style-type: none"> Higher maintenance cost associated with the street crossing of West Highland Creek. The crossing over West Highland Creek also has a finite life span. 	 <ul style="list-style-type: none"> Higher maintenance cost associated with the street crossing of West Highland Creek. The crossing over West Highland Creek also has a finite life span.
Construction phasing	 <ul style="list-style-type: none"> None required. 	 <ul style="list-style-type: none"> Private property acquisition. Must maintain access to residential driveways. 	 <ul style="list-style-type: none"> Private property acquisition. Must maintain access to residential driveways. Access to Collingwood Park during construction will need to be monitored. 	 <ul style="list-style-type: none"> Private property acquisition. No complications foreseen. Access to Collingwood Park during construction will need to be monitored. 	 <ul style="list-style-type: none"> Private property acquisition. Complication due to proximity to condos; need interim arrangements for building access and servicing. Access to Collingwood Park during construction will need to be monitored.
Constructability & Design Summary:					

Notwithstanding the Do Nothing option, which is rated the highest from a constructability and design perspective, options C1 is preferred from a Constructability and Design perspective for the following reasons:

- Options C3 and C4 have higher construction and maintenance cost due to the need for a new bridge crossing West Highland Creek.
- Options C2, C3 and C4 all have higher floodplain impact than C1.

Evaluation Criteria	Do Nothing	Street Alignment Option C1	Street Alignment Option C2	Street Alignment Option C3	Street Alignment Option C4
SOCIO-ECONOMIC ENVIRONMENT					
Property impacts	<ul style="list-style-type: none"> No property impacts. 	<ul style="list-style-type: none"> Impacts to 3 private properties along Sheppard Avenue East, Gordon Avenue and Collingwood Street and portions of the Cowdray Court properties. Changes within the City's road right-of-way to accommodate the N-S street and new sidewalk along Collingwood Street will impact the driveway lengths of most of the dwellings along Gordon Avenue and Collingwood Street. 	<ul style="list-style-type: none"> Impacts 3 to 4 private properties along Gordon Avenue and Collingwood Street and portions of the Cowdray Court properties. Changes within the City's road right-of-way to accommodate the N-S street and new sidewalk along Collingwood Street will impact the driveway lengths of most of the dwellings along Gordon Avenue and Collingwood Street. Potential peripheral impact to Collingwood Park lands 	<ul style="list-style-type: none"> Impacts 2 private properties along Collingwood Street, 4061 Sheppard Avenue East and portions of the Cowdray Court properties. Potential peripheral impact to Collingwood Park lands 	<ul style="list-style-type: none"> Results in impact to 2 private properties along Collingwood Street, 4061 Sheppard Avenue East, the condo properties at 4091 and 4101 Sheppard Avenue East and portions of the Cowdray Court properties. Complicated property taking protocols associated with condo boards and the condo corporation By-laws. Potential peripheral impact to Collingwood Park lands
Changes in neighborhood characteristics	<ul style="list-style-type: none"> No change to existing. 	<ul style="list-style-type: none"> Constructing a complete street on Gordon Ave. will increase vehicular, pedestrian, and cyclist traffic through the neighbourhood. Installation of streetscape and landscape may enhance the neighbourhood character. 	<ul style="list-style-type: none"> Constructing a complete street on Gordon Ave. and Collingwood Street will increase vehicular, pedestrian, and cyclist traffic through the neighbourhood. Installation of streetscape and landscape may enhance the neighbourhood character. 	<ul style="list-style-type: none"> Introduces a Collector road directly adjacent to the existing neighbourhood Some increased traffic is anticipated through the neighbourhood, however, significant changes to the overall neighbourhood characteristics are not anticipated. 	<ul style="list-style-type: none"> Changes the context of the driveway serving 4091 and 4101 Sheppard Ave E from a private access to a public collector road.
Impacts to existing land uses	<ul style="list-style-type: none"> No change to existing. 	<ul style="list-style-type: none"> No changes to existing land-uses within the existing neighbourhood along Gordon Ave. and Collingwood St. are anticipated as a result of an improved road. Any proposed changes within land uses of the remaining study area are subject to the City's standard rezoning process. 	<ul style="list-style-type: none"> No changes to existing land-uses within the existing neighbourhood along Gordon Ave. and Collingwood St. are anticipated as a result of a new road. Any proposed changes within land uses of the remaining study area are subject to the City's standard rezoning process. 	<ul style="list-style-type: none"> No changes to existing land-uses within the existing neighbourhood along Gordon Ave. and Collingwood St. are anticipated as a result of a new road. Any proposed changes within land uses of the remaining study area are subject to the City's standard rezoning process. 	<ul style="list-style-type: none"> No changes to existing land-uses within the existing neighbourhood along Gordon Ave. and Collingwood St. are anticipated as a result of a new road. Any proposed changes within land uses of the remaining study area are subject to the City's standard rezoning process.
Soil contamination	<ul style="list-style-type: none"> No impacts to potentially contaminated soils. 	<ul style="list-style-type: none"> Management of shallow soil contamination (i.e. EC, Benzo(a)pyrene) will be required for proposed road profile near south limit of alignment. Management of shallow soil contamination (i.e. salt) will be required to CP Rail underpass excavations Management of shallow soil contamination (i.e. EC and salt) will be required at the intersection of Cowdray CT. 	<ul style="list-style-type: none"> Management of shallow soil contamination (EC, Benzo(a)pyrene) will be required for proposed road profile near south limit of alignment . Management of shallow soil contamination (salt) will be required to CP Rail underpass excavations. Management of shallow soil contamination (EC and salt) will be required at the intersection of Cowdray CT. 	<ul style="list-style-type: none"> Management of shallow soil contamination (EC, Benzo(a)pyrene) will be required for proposed road profile near south limit of alignment. Management of shallow soil contamination (salt) will be required to CP Rail underpass excavations. Management of shallow soil contamination (EC and salt) will be required at the intersection of Cowdray CT. 	<ul style="list-style-type: none"> Management of shallow soil contamination (EC, Benzo(a)pyrene) will be required for proposed road profile near south limit of alignment. Management of shallow soil contamination (salt) will be required to CP Rail underpass excavations. Management of shallow soil contamination (EC and salt) will be required at the intersection of Cowdray CT.
Stormwater management	<ul style="list-style-type: none"> No change to existing. 	<ul style="list-style-type: none"> All runoff can be collected and conveyed to treatment and control via drainage systems. Water Balance can be addressed. Erosive energy increases to West Highland Creek can be mitigated. No direct discharge to West Highland Creek. 	<ul style="list-style-type: none"> All runoff can be collected and conveyed to treatment and control via drainage systems. Water Balance can be addressed. Erosive energy increases to West Highland Creek can be mitigated. 	<ul style="list-style-type: none"> Runoff from new road crossing over the creek will be difficult to treat and control. Water Balance from bridge area requires compensation. Direct erosive energy impacts to West Highland Creek. 	<ul style="list-style-type: none"> Runoff from new road crossing over the creek will be difficult to treat and control. Water Balance from bridge area requires compensation. Direct erosive energy impacts to West Highland Creek.

Evaluation Criteria	Do Nothing	Street Alignment Option C1	Street Alignment Option C2	Street Alignment Option C3	Street Alignment Option C4
Noise impact management	 <ul style="list-style-type: none"> No change to existing. 	 <ul style="list-style-type: none"> Introduction of nearby road traffic noise to rear yards of 7,11, 13 Collingwood St.; Acoustic fences could mitigate. Introduction of nearby road traffic noise at residential windows on Village Green Sq. and 7, 11 Collingwood St. Increased traffic noise on Gordon St. 	 <ul style="list-style-type: none"> Introduction of nearby road traffic noise to rear yard of 27 Collingwood St.; Acoustic fence could mitigate. Introduction of nearby road traffic noise at residential windows on Village Green Sq. and 27 Collingwood St. Increased traffic noise on Gordon St. and Collingwood St. 	 <ul style="list-style-type: none"> Introduction of nearby road traffic noise to rear yard of 27, 28 Collingwood St.; Acoustic fences could mitigate. Introduction of nearby road traffic noise at residential windows on Village Green Sq., 27, 28 Collingwood St., and 4091 Sheppard Ave. E. Impacts to the condo at 4091 Sheppard Ave E will be hard to mitigate. 	 <ul style="list-style-type: none"> Introduction of nearby road traffic noise to rear yard of 27, 28 Collingwood St.; Acoustic fences could mitigate. Introduction of nearby road traffic noise at residential windows on Village Green Sq., 27, 28 Collingwood St., 4091 Sheppard Ave. E. Impacts to the condo at 4091 Sheppard Ave E will be hard to mitigate.
Impact to Collingwood Park	 <ul style="list-style-type: none"> No change to existing. 	 <ul style="list-style-type: none"> No anticipated impact. 	 <ul style="list-style-type: none"> Potential peripheral impacts to Collingwood Park. Additional intersection formed at the N-S street and Collingwood Park may impact active transportation access to the park. Limits potential park expansion to the west. 	 <ul style="list-style-type: none"> Potential peripheral impacts to Collingwood Park (more than Option C2). Additional intersection formed at the N-S street and Collingwood Park may impact active transportation access to the park. Limits potential park expansion to the west. 	 <ul style="list-style-type: none"> Potential peripheral impacts to Collingwood Park (more than Option C2). Additional intersection formed at the N-S street and Collingwood Park may impact active transportation access to the park. Limits potential park expansion to the west.
Socio-Economic Summary:					
<p>Overall, C1 is preferred from a Socio-Economic perspective for the following reasons:</p> <ul style="list-style-type: none"> C1 is least impactful to Collingwood Park, an important aspect of the study area C1 is least impactful to stormwater management. C1 does not involve property or noise impact to the condos at 4091 & 4101 Sheppard Ave. E., which has higher density and is harder to mitigate. 					
NATURAL ENVIRONMENT					
Impact to wildlife	 <ul style="list-style-type: none"> No impact to existing wildlife or wildlife habitat. 	 <ul style="list-style-type: none"> Alignment has minor effect on wildlife habitat from some removal of CUW along north side of rail line for retaining walls/embankments. No other intersection with wildlife habitat (vegetation/West Highland Creek corridor). No impact to species/habitat/ movement opportunities. 	 <ul style="list-style-type: none"> Similar to Alignment C1 but intersects with small copse of trees on private property and may intersect copse of trees at edge of parkland. These vegetation units provide minor benefits as local wildlife habitat. No impact to species/minor impact to habitat and no effect to wildlife movement. 	 <ul style="list-style-type: none"> The Alignment crosses the West Highland Creek corridor that will result in the removal of riparian vegetation that provides cover and wildlife movement opportunities. Crossing clearance is tall enough to permit small to medium mammals to move through the area. 	 <ul style="list-style-type: none"> The Alignment crosses the West Highland Creek corridor that will result in the removal of riparian vegetation that provides cover and wildlife movement opportunities. Crossing clearance is tall enough to permit small to medium mammals to move through the area.
Impact to groundwater quality or quantity	 <ul style="list-style-type: none"> No impact to existing groundwater resources. 	 <ul style="list-style-type: none"> Temporary Construction period dewatering required. Potentially impacted groundwater could be encountered at the grade separation and potential mobilization of surrounding site contaminants during any construction period dewatering. 	 <ul style="list-style-type: none"> Temporary Construction period dewatering required. Potentially impacted groundwater could be encountered at the grade separation and potential mobilization of surrounding site contaminants during any construction period dewatering. 	 <ul style="list-style-type: none"> Temporary Construction period dewatering required. potentially impacted groundwater could be encountered at the grade separation and potential mobilization of surrounding site contaminants during any construction period dewatering. 	 <ul style="list-style-type: none"> Temporary Construction period dewatering required. potentially impacted groundwater could be encountered at the grade separation and potential mobilization of surrounding site contaminants during any construction period dewatering.

Evaluation Criteria	Do Nothing	Street Alignment Option C1	Street Alignment Option C2	Street Alignment Option C3	Street Alignment Option C4
Impact to fish and fish habitat	 <ul style="list-style-type: none"> No impact to existing fish or fish habitat. 	 <ul style="list-style-type: none"> No anticipated impacts to fish and fish habitat. 	 <ul style="list-style-type: none"> No anticipated impacts to fish and fish habitat. 	 <ul style="list-style-type: none"> 6 cold/warmwater fish species were identified to be present in the West Highland Creek (according to agency correspondence). Introducing a new road crossing over West Highland Creek and future vehicular traffic and maintenance (e.g. run-off, spills, salt) has the potential to negatively affect fish and fish habitat. Crossing is proposed within the reach with the most forested riparian vegetation in the study area. Removal of riparian vegetation may impact fish habitat throughout the study reach. 	 <ul style="list-style-type: none"> 6 cold/warmwater fish species were identified to be present in the West Highland Creek (according to agency correspondence). Introducing a new road crossing over West Highland Creek and future vehicular traffic and maintenance (e.g. run-off, spills, salt) has the potential to negatively affect fish and fish habitat. Crossing is proposed within the reach with the most forested riparian vegetation in the study area. Removal of riparian vegetation may impact fish habitat throughout the study reach.
Impacts to vegetation	 <ul style="list-style-type: none"> No impacts to vegetation. 	 <ul style="list-style-type: none"> Three types of vegetation communities will be affected: <ul style="list-style-type: none"> Disturbed vegetation communities containing a number of introduced or invasive species; Residential and parkland communities comprised on introduced/cultivar species. Impacts to street trees and trees adjacent to or along the railway berm are anticipated. 	 <ul style="list-style-type: none"> Three types of vegetation communities will be affected: <ul style="list-style-type: none"> Disturbed vegetation communities containing a number of exotic/introduced/invasive species; Residential and parkland communities comprised on introduced/cultivar species; Impacts to street trees, significant trees on private property and trees adjacent to or on the railway berm are anticipated. 	 <ul style="list-style-type: none"> Four types of vegetation communities will be affected: <ul style="list-style-type: none"> Disturbed vegetation communities containing a number of exotic/introduced/invasive species; Residential and parkland communities comprised on introduced/cultivar species; Riparian communities confined to the West Highland Creek Impacts to street trees are anticipated. Impacts to trees within naturalized areas adjacent to West Highland Creek and within parkland are anticipated. 	 <ul style="list-style-type: none"> Four types of vegetation communities will be affected: <ul style="list-style-type: none"> Disturbed vegetation communities containing a number of exotic/introduced/invasive species; Residential and parkland communities comprised on introduced/cultivar species; Small riparian communities confined to the West Highland Creek. Impacts to street trees are anticipated. Impacts to trees within naturalized areas adjacent to West Highland Creek and within parkland are anticipated.
Impacts to species of concern (vegetation and wildlife)	 <ul style="list-style-type: none"> No impacts to specialist at risk (SAR). 	 <ul style="list-style-type: none"> 9 SAR were identified with minimal to no likelihood of impacts to species or habitat. 1 SAR (Snapping Turtle (Special Concern)) was the identified to have a moderate likelihood of impacts to the species or habitat. Since this alignment alternative is the furthest from the West Highland Creek, where this species would be found, impacts are not anticipated. 	 <ul style="list-style-type: none"> 9 SAR were identified with minimal to no likelihood of impacts to species or habitat. 1 SAR (Snapping Turtle (Special Concern)) was the identified to have a moderate likelihood of impacts to the species or habitat. This alignment alternative is the second furthest from the West Highland Creek, minor impacts are expected. 	 <ul style="list-style-type: none"> 9 SAR were identified with minimal to no likelihood of impacts to species or habitat. 1 SAR (Snapping Turtle (Special Concern)) was the identified to have a moderate likelihood of impacts to the species or habitat. Impacts to planted Kentucky Coffee Tree within Collingwood Park on approach to West Highland Creek crossing. 	 <ul style="list-style-type: none"> 9 SAR were identified with minimal to no likelihood of impacts to species or habitat. 1 SAR (Snapping Turtle (Special Concern)) was the identified to have a moderate likelihood of impacts to the species or habitat. Impacts to planted Kentucky Coffee Tree within Collingwood Park on approach to West Highland Creek crossing.
Fluvial Geomorphology	 <ul style="list-style-type: none"> No impacts to West Highland Creek. 	 <ul style="list-style-type: none"> No impacts to West Highland Creek as no new creek crossing is involved. Fluvial geomorphology assessment is not required. 	 <ul style="list-style-type: none"> No impacts to West Highland Creek as no new creek crossing is involved. Fluvial geomorphology assessment is not required. 	 <ul style="list-style-type: none"> West Highland Creek crossing is required which may affect the geomorphology of the creek. A fluvial geomorphology assessment will be required. 	 <ul style="list-style-type: none"> West Highland Creek crossing is required which may affect the geomorphology of the creek. A fluvial geomorphology assessment will be required.

Evaluation Criteria	Do Nothing	Street Alignment Option C1	Street Alignment Option C2	Street Alignment Option C3	Street Alignment Option C4
Natural Environment Summary:					
<p>Overall, C1 is preferred from a Natural Environment perspective for the following reasons:</p> <ul style="list-style-type: none"> No impact to fish habitat and terrestrial habitat (vegetation, wildlife, species at risk). Interacts with culturally disturbed vegetation communities. Does not create a new road crossing West Highland Creek and is the furthest from the creek. 					
CUTURAL HERITAGE					
Impact to identified potential cultural heritage resources	<ul style="list-style-type: none"> No impacts to built or cultural heritage resources or landscape. 	<ul style="list-style-type: none"> No impacts to built or cultural heritage resources or landscape. 	<ul style="list-style-type: none"> Potential to impact potential Cultural Heritage Landscape (CHR 4 - Collingwood Park). 	<ul style="list-style-type: none"> Potential to impact 2 potential Cultural Heritage Landscapes (CHR 4 – Collingwood Park & CHR 5 – West Highland Creek) 	<ul style="list-style-type: none"> Potential to impact 2 potential Cultural Heritage Landscapes (CHR 4 – Collingwood Park & CHR 5 – West Highland Creek)
Impact to archaeological resources	<ul style="list-style-type: none"> No archaeological impacts. 	<ul style="list-style-type: none"> Property inspection determined the area to be predominately disturbed by modern construction activities and do not require further archaeological assessment. Alignment option crosses an area that exhibits archaeological potential (e.g. proximity to water sources, historic roadways) and will require Stage 2 Archaeological Assessment. 	<ul style="list-style-type: none"> Property inspection determined the area to be predominately disturbed by modern construction activities and do not require further archaeological assessment. Alignment option crosses an area that exhibits archaeological potential (e.g. proximity to water sources, historic roadways) and will require Stage 2 Archaeological Assessment. 	<ul style="list-style-type: none"> Property inspection determined the area to be predominately disturbed by modern construction activities and do not require further archaeological assessment. Alignment option crosses an area that exhibits archaeological potential (e.g. proximity to water sources, historic roadways) and will require Stage 2 Archaeological Assessment. 	<ul style="list-style-type: none"> Property inspection determined the area to be predominately disturbed by modern construction activities and do not require further archaeological assessment. Alignment option crosses an area that exhibits archaeological potential (e.g. proximity to water sources, historic roadways) and will require Stage 2 Archaeological Assessment.
Cultural Heritage Summary:					
<p>Overall, C1 is preferred from a Cultural Heritage perspective for the following reasons:</p> <ul style="list-style-type: none"> Alternative C1 has no impacts to potential built heritage resources. All Alternatives will require further Stage 2 archaeological assessment. 					
OVERALL SUMMARY					

Evaluation Criteria	Do Nothing	Street Alignment Option C1	Street Alignment Option C2	Street Alignment Option C3	Street Alignment Option C4
OVERALL EVALUATION					
CONCLUSION	<p>Based on the review of all of 4 options relative to the “Do Nothing”, Option C1 is recommended as the preferred. The technical challenges, environmental and social impacts of Option C2, C3 and C4 diminishes the feasibility of these options. The multi-modal aspects of Option C1 addresses the problem and opportunity statement and is also least impactful to the sensitive floodplain context of the study area.</p>				