Evaluation Criteria	Indicator	Preliminary Collector 6N Corridor Alignment Alternatives		
		Alternative 1	**Alternative 2**	**Alternative 3**
Transportation and Traffic				
Transportation and Traffic Operations[1]	Traffic Operations (Future Conditions – 2030)	• All signalized intersections perform acceptably with delays remaining within level of service standards. • Queuing on Upper James Street is not expected to exceed storage, but the eastbound left turn queue on Collector 6N may exceed storage space.	• All signalized intersections perform acceptably with no queues expected to exceed storage and delays remaining within level of service standards.	• All signalized intersections perform acceptably with no queues expected to exceed storage and delays remaining within level of service standards.

	Compatibility with adjacent signalized intersections (spacing)	• Spacing between Collector 6N and the HSR north driveway to the south is 160m (Alternative 1) and 118m (Alternative 1A), which is below the recommended minimum intersection spacing (Per OTM Book 12).
		• A northbound left turn (Upper James St at Collector 6N) storage length of 52m (3 m wide lane) would be required for the northbound left turn lane
		  ○ Alternative 1 has sufficient space of 125m (stop-bar to stop-bar) to accommodate this left turn lane
		  ○ Alternative 1A has 82m space (stop-bar to stop-bar) and would require a reduced left-turn lane storage length and/or taper
			• The HSR south driveway conflicts with the Collector 6N intersection to Upper James Street. The access will need to close and access to the HSR facility will need to be redirected to a new access on Collector 6N.
			• Intersection spacing requirements met if the HSR south driveway is closed. The closest intersection from Collector 6N is 220m to the north, centre-to-centre (HSR north driveway).
			• Southbound queues at Collector 6N do not reach the next signal upstream at HSR north driveway.
				• Intersection spacing requirements are met. Closest intersection is 232m to the north, centre-to-centre (HSR south driveway).
				• Southbound queues at Collector 6N do not reach the HSR south driveway signalized intersection upstream.

[1] Based on analysis in the Traffic Impact Study for the Panattoni Development at 2240 & 2254 Upper James Street (JD Northcote Engineering Inc., June 2022)

Evaluation Criteria	Indicator	Preliminary Collector 6N Corridor Alignment Alternatives		
		Alternative 1	**Alternative 2**	**Alternative 3**
	Compatibility with nearby private driveways	• Southbound Right Storage + Taper at Upper James St/Collector 6N conflicts with several private driveways; however, this arrangement is not uncommon. • Over time, driveways can be consolidated with redevelopment; however, for the purposes of this study it is noted as a constraint compared to other Alternatives.	• No driveway conflicts.	• Southbound Right Storage + Taper at Upper James St/Collector 6N conflicts with several private driveways; however, this arrangement is not uncommon. • Over time, driveways can be consolidated with redevelopment; however, for the purposes of this study it is noted as a constraint compared to other Alternatives.
	Safety - design speed and posted speed limit	• Recommend lowering posted speed limit from 70km/h to 60km/h in anticipation of development and a shift in road type from rural highway to urban arterial	• Recommend lowering posted speed limit from 70km/h to 60km/h in anticipation of development and a shift in road type from rural highway to urban arterial	• Recommend lowering posted speed limit from 70km/h to 60km/h in anticipation of development and a shift in road type from rural highway to urban arterial
	Safety - Connection to Upper James Street (intersection configuration with existing driveways)	• Requires consolidating of driveways at 2149 Upper James Street into single driveway and integrating with Collector 6N connection.	• No issues/impacts associated with connection Upper James Street	• Requires maintaining access to 2273, 2277 and 2285 Upper James Street. • A solution to integrate the driveways with the Collector 6N/Upper James Street intersection to be considered during detailed design.
	Safety - Active Transportation	• No impact to existing infrastructure.	• No impact to existing infrastructure.	• No impact to existing infrastructure.
	Other Traffic Implications : • HSR Facility Entrances and Traffic control measures • Panattoni Site (2240 Upper James Street)	• If there is no exception provided for the signalized intersection spacing requirements, then the HSR north driveway would need to become an unsignalized right-in/right-out intersection with no outbound left-turns allowed. • A new signalized connection onto Collector 6N would be required for trips to the north, as left turns out of an unsignalized driveway would not be desirable.	• Requires closing the HSR south driveway, which would impact the HSR facility site access/egress traffic operations. • Requires a new HSR facility signalized access onto Collector 6N at southwest end of the facility, which may operate poorly or violate signal spacing requirements along Collector 6N.	• No impacts to HSR facility. • Provides an opportunity for the Panattoni development (2240 Upper James St) to have direct access onto Collector 6N, but at the expense of having the alignment reduce the developable land of the property.
Transportation & Traffic Rating		**Moderately Preferred**	**Less Preferred**	**Moderately Preferred**

Evaluation Criteria	Indicator	Preliminary Collector 6N Corridor Alignment Alternatives		
		Alternative 1	**Alternative 2**	**Alternative 3**
HSR Facility Impacts				
Impacts to HSR Facility Operations	Bus access/Entrance into HSR facility	• Minimal impact depending on traffic signal phasing and provision of N-W left turn lane	• Major impact depending on traffic control coordination and roadway intersection design	• No impact
	Deliveries of vehicle parts and supplies, office supplies, couriers	• Minimal impact depending on provision of N-W left turn lane	• Major impact depending on traffic control coordination and roadway intersection design	• No impact
	Fuel delivery	• Minimal impact depending on provision of N-W left turn lane	• Potential impact depending on traffic control coordination and roadway intersection design	• No impact
	Fuelling of buses	• No impact	• No impact	• No impact
	Flow of vehicles on the site	• No impact	• Would require change of circulation of buses and other vehicles on site	• No impact
	Emergency Access	• No Impact	• Minor impact depending on traffic control coordination and roadway intersection design	• No impact
	Possibility of HSR expansion for bus storage and/or public/private parking	• Realignment of watercourse west of HSR facility to follow Collector 6N could be explored. May allow for HSR expansion further to the west. • Potential parking area north of the HSR (south of Collector 6N)	• Does not offer direct opportunity for HSR expansion	• Does not offer direct opportunity for HSR expansion
	Public and staff parking	• Potential for expansion of staff and/or public parking to the north	• Minor impact depending on traffic control coordination and roadway intersection design	• No impact or benefit to HSR
	Impact to bus maintenance and operations	• No impact	• Minor impact depending on traffic control coordination and roadway intersection design	• No impact or benefit to HSR
	Bus Terminal access/egress	• No impact	• Major impact depending on traffic control coordination and roadway intersection design	• No impact
	Employee and public access	• Potential for expansion of staff and/or public parking to the north	• Minor impact depending on traffic control coordination and roadway intersection design	• No impact or benefit to HSR
HSR Facility Impacts Rating		**More Preferred**	**Least Preferred**	**Moderately Preferred**

Evaluation Criteria	Indicator	Preliminary Collector 6N Corridor Alignment Alternatives		
		Alternative 1	**Alternative 2**	**Alternative 3**
Socio-Economic Environment				
Existing and Future Land Uses	Property Impacts (Direct[2] or Indirect[3])	**Summary (Alternative 1)** • Total Area: 3.60 hectares • Direct Impacts: 6 properties • Indirect Impacts: 4 properties **Summary (Alternative 1A)** • Total Area: 3.42 ha • Direct Impacts: 7 properties • Indirect Impacts: 4 properties **Detailed List of Impacts** <u>Direct Impacts (Alternative 1)</u> • 2124 Upper James St: 0.163ha* • 2136 Upper James St: 0.030ha • 2130 Upper James St: 1.310ha • 9236 Dickenson Road: 1.082ha • 9322 Dickenson Rd: 0.591ha • 9285 Twenty Rd W: 0.421ha <u>Indirect Impacts (Alternative 1)</u> • 2149 Upper James St • 2144 Upper James St • 2129 Upper James St • 2118 Upper James St <u>Direct Impacts (Alternative 1A)</u> • 2136 Upper James St: 0.083ha* • 2144 Upper James St: 0.141ha* • 2150 Upper James St: 0.008ha • 2130 Upper James St: 1.097ha • 9236 Dickenson Road: 1.082ha • 9322 Dickenson Rd: 0.591ha	**Summary** • Total Area: 3.96 hectares • Direct Impacts: 4 properties • Indirect Impacts: 3 properties **Detailed List of Impacts** <u>Direct Impacts</u> • 2240 Upper James St: 1.725ha • 9236 Dickenson Road: 1.173ha • 9322 Dickenson Rd: 0.500ha • 9285 Twenty Rd W: 0.566ha <u>Indirect Impacts</u> • 2235 Upper James St • 2219 Upper James St • 2179 Upper James St	**Summary** • Total Area: 4.26 hectares • Direct Impacts: 14 properties • Indirect Impacts: 8 properties **Detailed List of Impacts** <u>Direct Impacts</u> • 2280 Upper James St: 0.075ha* • 2274 Upper James St: 0.076ha* • 24 Talbot Lane: 0.187ha* • 38 Talbot Lane: 0.180ha* • 2284 Upper James St: 0.016ha • 2272 Upper James St: 0.019ha • 14 Talbot Lane: 0.058ha • 19 Talbot Lane: 0.010 • 25 Talbot Lane: 0.040ha • 9084 Dickenson Rd: 0.088ha • 2240 Upper James St: 1.292ha • 9236 Dickenson Rd: 1.201ha • 9322 Dickenson Rd: 0.536ha • 9285 Twenty Rd W: 0.479ha <u>Indirect Impacts</u> • 2292 Upper James St • 2288 Upper James St • 2285 Upper James St • 2277 Upper James St • 2273 Upper James St • 2270 Upper James St • 2264 Upper James St • 2254 Upper James St

[2] Direct Impacts: properties where proposed ROW overlaps with existing property limits and necessitate a full or partial acquisition – the total area for which is summarized in the table. Estimates are based on preliminary alignment alternatives, exact requirements and potential for additional mitigation measures to be explored during subsequent phases of the EA process and detailed design.
[3] Indirect Impacts: properties where proposed ROW does not overlap with existing property limits (i.e. property acquisition not necessitated) but may result in other impacts such as increased noise and congestion. Estimates are based on preliminary alignment alternatives, exact requirements and potential for additional mitigation measures to be explored during subsequent phases of the EA process and detailed design.

Evaluation Criteria	Indicator		Preliminary Collector 6N Corridor Alignment Alternatives		
			Alternative 1	Alternative 2	Alternative 3
			• 9285 Twenty Rd W: 0.421ha <u>Indirect Impacts (Alternative 1A)</u> • 2124 Upper James St • 2129 Upper James St • 2149 Upper James St • 2156 Upper James St *Full buy-out likely required	*Full buy-out likely required	*Full buy-out likely required
	Access Impacts		• 2118 Upper James St: May need to be converted to right-in right-out only to accommodate new signalized intersection • 2270 James Street: access may need to be relocated north to accommodate intersection sightline triangles	• 2235 and 2240 Upper James St: May need to be converted to right-in right-out only to accommodate new signalized intersection	• 2272 Upper James St: Existing access may need to be relocated N to accommodate new signalized intersection at Talbot Lane • 14 Talbot Lane: Existing access may need to be relocated (not sure which way) • 2277 Upper James St: may need to be converted to right-in right-out only to accommodate signalized intersection
Impacts to Developable Lands (Key Property Owners)	Fragmentation (See Fragmentation Figures)	1. 9285 Twenty Road West - Owned by Spallacci & Sons Ltd.	• Reduces available developable land from approximately 32.541ha to 32.110ha	• Reduces available developable land from approximately 32.541ha to 31.947ha	• Reduces available developable land from approximately 32.541ha to 32.043ha
		2. 2130 Upper James Street – Owned by George Sharples Enterprises Inc.	• Alternative 1: Area is split into two sections approximately 93,500 m^2 and 19,330 m^2 in size. • Alternative 1A: Area is split into two sections approximately 104,160 m^2 and 10,760 m^2 in size. • Resulting smaller parcel of fragmented property would be less viable for development, however its proximity to the HSR facility would make it a prime candidate for future expansion needs. • Owner has indicated a willingness to sell their property to the City. At this	• No impact	• No impact

Evaluation Criteria	Indicator		Preliminary Collector 6N Corridor Alignment Alternatives		
			Alternative 1	**Alternative 2**	**Alternative 3**
			time, no indication of Site Plan Application for this property.		
		3. 2240 Upper James Street - Owned by East Hamilton Airport Lands Limited Partnership	• No impact	• Reduces available developable land from approximately 9.769ha to approximately 7.918ha • Site Plan Application has been received from developer.	• This alternative would bisect the site, resulting in two smaller sites of 2.326ha and 6.063ha with good viability for future development. • Site Plan Application has been received from developer.
		4. 9084 Dickenson Road – Owned by Racing Construction Ltd.	• No impact	• No impact	• Reduces available developable land from approximately 9.989ha to 9.894ha
		5. 9236 Dickenson Road – Owned by North Hamilton Airport Lands Ltd. Partnership	• Small section (0.538ha) at the north end is divided from the rest of the lot by ROW, leaving larger section of approximately 15.398ha • Resulting smaller parcel of fragmented property would be less viable for development as compared to Alternatives 2 and 3.	• Section (1.500ha) at the north end is divided from the rest of the lot by ROW, leaving larger section of approximately 14.345ha • Resulting smaller parcel of fragmented property would be more viable for development compared to Alternative 1/1A.	• Section (1.382ha) at the north end is divided from the rest of the lot by ROW, leaving larger section of approximately 14.345ha • Resulting smaller parcel of fragmented property would be more viable for development compared to Alternative 1/1A.
		6. 9322 Dickenson Road – Owned by North Hamilton Airport Lands Ltd. Partnership	• Reduces available developable land from approximately 18.406ha to approximately 17.785ha	• Reduces available developable land from approximately 18.406ha to approximately 17.855ha	• Reduces available developable land from approximately 18.406ha to approximately 17.837ha
	Access Impacts	1. 9285 Twenty Road West - Owned by Spallacci & Sons Ltd.	• Creates new arterial road access opportunities for future developments. • Would gain desirable new “frontage” real-estate opportunities on an arterial road corridor with access to nearby highways (Lincoln M. Alexander Parkway and Highway 6) via Upper James Street. This could spur economic development on the property and lead to new development opportunities.		
		2. 2130 Upper James Street – Owned by George Sharples Enterprises Inc.	• Creates new arterial road access opportunities for future developments. • Would gain desirable new “frontage” real-estate opportunities on an arterial road corridor with access to nearby highways (Lincoln M. Alexander Parkway and Highway 6)	• Would not add any new corridor frontage or access opportunities for new development.	

Evaluation Criteria	Indicator		Preliminary Collector 6N Corridor Alignment Alternatives		
			Alternative 1	**Alternative 2**	**Alternative 3**
			via Upper James Street. This could spur economic development on the property and lead to new development opportunities.		
		3. 2240 Upper James Street - Owned by East Hamilton Airport Lands Limited Partnership	• Would not add any new corridor frontage or access opportunities for new development. • A full move access from Collector 6N to the site would be required, given that the access to Upper James would otherwise be restricted to right-in and right-out movements only.	• Creates new arterial road access opportunities for future developments. • Would gain desirable new "frontage" real-estate opportunities on an arterial road corridor with access to nearby highways (Lincoln M. Alexander Parkway and Highway 6) via Upper James Street. This could spur economic development on the property and lead to new development opportunities.	
		4. 9084 Dickenson Road – Owned by Racing Construction Ltd.	• Would not add any new corridor frontage or access opportunities for new development.		• Creates new arterial road access opportunities for future developments. • Would gain desirable new "frontage" real-estate opportunities on an arterial road corridor with access to nearby highways (Lincoln M. Alexander Parkway and Highway 6) via Upper James Street. This could spur economic development on the property and lead to new development opportunities.
		5. 9236 Dickenson Road – Owned by North Hamilton Airport Lands Ltd. Partnership	• Creates new arterial road access opportunities for future developments. • Would gain desirable new "frontage" real-estate opportunities on an arterial road corridor with access to nearby highways (Lincoln M. Alexander Parkway and Highway 6) via Upper James Street. This could spur economic development on the property and lead to new development opportunities.		
		6. 9322 Dickenson Road – Owned by North Hamilton Airport Lands Ltd. Partnership	• Creates new arterial road access opportunities for future developments. • Would gain desirable new "frontage" real-estate opportunities on an arterial road corridor with access to nearby highways (Lincoln M. Alexander Parkway and Highway 6) via Upper James Street. This could spur economic development on the property and lead to new development opportunities.		
Socio-Economic Environment Rating			**Moderately Preferred**	**More Preferred**	**Less Preferred**

Evaluation Criteria	Indicator		Preliminary Collector 6N Corridor Alignment Alternatives		
			Alternative 1	Alternative 2	Alternative 3
Natural Environment					
Impacts to Natural Environmental Features / Areas	Policy Areas, species of conservation concern		• City's Natural Heritage System • Monarch (larval host plants and nectar feeding area)	• City's Natural Heritage System	• City's Natural Heritage System
	Terrestrial Environments	Natural Heritage System (NHS) Core areas[4] - General	• This route affects small portions of the core areas of the woodlot. Affects as large portions of the vegetation protection zones of multiple core areas. • This route affects approximately 3641 square metres of the NHS Core Areas and 2260 square metres of the VPZ of core areas	• This route affects a small portion of core area at the stream and associated vegetation protection zone. • This route affects approximately 1740 square metres of the NHS Core Areas and 2630 square metres of the VPZ of core areas	• This route affects a small portion of core area at the stream and associated vegetation protection zone. • This route affects approximately 1730 square metres of the NHS Core Area and 2510 square metres of the VPZ of core areas
		NHS Linkages[4] - General	• Impacts one linkage	• Impacts one linkage	• Impacts one linkage
		NHS Core Area[4] - Unevaluated Wetlands	• This route will directly affect two unevaluated wetlands and result in the removal of both a swamp (polygon 28 in the Dugan report map) and meadow marsh on 2130 Upper James St (polygon 19.2 in the Dougan report map)	• This route will affect one small unevaluated wetland adjacent to the transit facility resulting in the removal of this small meadow marsh (polygon 25 in the Dougan report) • This route will cross the stream with a narrow meadow marsh on its banks (polygon 22 on the Dougan report), but proper crossing design would minimize impacts to this stream and wetland	• This route will cross the stream with a narrow meadow marsh on its banks, but proper crossing design would minimize impacts to this stream and associated wetland
		NHS Core Area[4] - Provincially Significant Wetlands	• No direct impacts	• May be direct impacts • Current alignment would impact the VPZ of the PSW. Opportunities to minimize impacts to be reviewed during detailed design.	• May be direct impacts • Current alignment would impact the VPZ of the PSW. Opportunities to minimize impacts to be reviewed during detailed design.
		NHS Core Area[4] - Significant Woodlands	• Portions of significant woodland will be removed at the hedgerow, woodland, stream crossing (and	• Portions of significant woodland will be removed at the stream crossing • Will impact at the woodland at a narrow point (at the stream crossing)	• Portions of significant woodland will be removed at the stream crossing • Will impact at the woodland at a narrow point (at the stream crossing)

[4] as identified in UHOP

Evaluation Criteria	Indicator		Preliminary Collector 6N Corridor Alignment Alternatives		
			Alternative 1	Alternative 2	Alternative 3
			additional NHS core areas removed at the two small wetlands) • There will be noise impacts to the core area to the north of the route as the route travels parallel along the woodlot for a long length • The largest area of VPZ impacted	• There may be slight noise impacts to the core woodland to the north at the small section the route travels close to the woodland, but the route moves away from the woodlot almost immediately.	• There may be slight noise impacts to the core woodland to the north at the small section the route travels close to the woodland, but the route moves away from the woodlot almost immediately
		NHS Core Area[4] - Species at Risk: Butternut trees	• Known Butternut trees will not be directly affected; the route will be outside 30m impact zone • Further surveys are needed for 2130 Upper James. So there are some unknowns regarding that property. (MECP may allow for exceptions, removals and/or compensation for impacts, but the potential presence and potential impacts are unknown at this time)	• Known Butternut trees will not be directly affected; the route will be outside 30m impact zone	• Known Butternut trees will not be directly affected; the route will be outside 30m impact zone
		NHS Linkages[4] / Hedgerows and Thickets	• Crosses two hedgerows, one near the point it joins the core woodland (and is considered part of the core) • Crosses a large area of thicket and regenerating woody species	• Crosses two hedgerows and would result in the removal of most of the hedgerow on the south side of the Transit Facility	• Crosses two hedgerows and would remove portions of each
		NHS Core Area[4] - Significant Wildlife Habitat (SWH) and Candidate Significant Wildlife Habitat	• The large northern core area will have small portions removed (portions of polygon 23.1 polygon 28 and portions of polygon 14 in the Dougan report) which is habitat for Eastern Wood Pewee., The core area will have noise impacts from the road and will have portions of its VPZ removed. • The wetlands being removed may be frog habitat (the wetland on the 2130 Upper James (north of HSR, polygon 19.2 in the Dougan report, has not yet been surveyed for frogs or toads)	• The crossing of the Deciduous Forest that extends from north to south to the large PSW (polygon 14 in the Dougan report) which is habitat for Eastern Wood Pewee.	• The crossing of the Deciduous Forest that extends from north to south to the large PSW (polygon 14 in the Dougan report) which is habitat for Eastern Wood Pewee.

Evaluation Criteria	Indicator		Preliminary Collector 6N Corridor Alignment Alternatives		
			Alternative 1	Alternative 2	Alternative 3
			• Further surveys are needed for 2130 Upper James. So there are some unknowns regarding that property.		
	Watercourses & Aquatic Env.	Watercourses (identifiable channel with permanent flow) And Fish Habitat (drainage features)	• Crosses one presumed watercourse, but field investigation needed to confirm frequency of flow within this feature (if only intermittent flow then it may be a headwater drainage feature). This feature is mapped flowing from north to south from polygon 28 through polygon 14 where it joins the main watercourse that empties into the large PSW. • Crosses three headwater drainage features	• Crosses one watercourse (just above the large PSW) flowing from east to west behind the transit facility • Crosses three headwater drainage features	• Crosses one watercourse (just above the large PSW) flowing from east to west behind the transit facility • Crosses four headwater drainage features
	Wildlife	Species at Risk (SAR)	• Monarch • Eastern Wood-Pewee • Unknown, further surveys needed for 2130 Upper James (north of HSR) so there are some unknowns regarding that property	• Eastern Wood-Pewee	• Eastern Wood-Pewee
		Wildlife Crossings	• Will need several wildlife crossing features included in road design as there is potential for wildlife crossing at multiple points along this route • Since the route runs parallel to two core habitats (the northern woodland and the stream) there is potential for wildlife crossing along the whole area of the road and a high probability of wildlife crossing at the hedgerow linkages • Fencing along much of the road route is recommended to funnel wildlife to the wildlife crossing features	• Will need one wildlife crossing feature included in road design • Since the route crosses at a narrow convergence point of the natural heritage system this is likely the natural animal passage location and should naturally concentrate animals to cross at a small portion of the road near the stream and hedgerow linkage • Areas of fencing are recommended along the core areas (and VPZ) to funnel wildlife to the wildlife crossing feature	• Will need one wildlife crossing feature included in road design • Since the route crosses at a narrow convergence point of the natural heritage system this is likely the natural animal passage location and should naturally concentrate animals to cross at a small portion of the road near the stream and hedgerow linkage • Areas of fencing are recommended along the core areas (and VPZ) to funnel wildlife to the wildlife crossing feature

Evaluation Criteria	Indicator		Preliminary Collector 6N Corridor Alignment Alternatives		
			Alternative 1	**Alternative 2**	**Alternative 3**
	Surface Water Quality & Quantity	Potential to affect surface and ground water quality in adjacent areas	• Will result in the removal of two small wetlands that will affect surface water filtration and ground water infiltration	• Will result in the removal of one small wetland that will affect surface water filtration and ground water infiltration	• No direct impacts
		Property required for SWM facilities	• Locations for SWM Facilities were not reviewed as part of this study and will need to be considered as part of future studies	• Locations for SWM Facilities were not reviewed as part of this study and will need to be considered as part of future studies	• Locations for SWM Facilities were not reviewed as part of this study and will need to be considered as part of future studies
Natural Environment Rating			**Less Preferred**[5]	**Moderately Preferred**	**More Preferred**

[5] while Alternative 1 is least preferred in the Natural Heritage criteria due to the larger area of impact, the impacts can be mitigated through remediations, compensation, or other physical mitigation, such as enhanced landscaping, provision of wildlife crossings, etc. If Alternative 1 is selected as the preferred Alternative, the City is recommended to commit to these mitigations as part of the protection for this Alternative.

Evaluation Criteria	Indicator	Preliminary Collector 6N Corridor Alignment Alternatives		
		Alternative 1	**Alternative 2**	**Alternative 3**
Cultural Heritage				

Cultural Heritage Landscapes (CHL) and Built Heritage Resources (BHR)	Potential/Anticipated impacts and proposed mitigation measures	• No impacts to any BHRs or CHLs	• Direct impacts to CHL 52 (9236 Dickenson Road, farmscape) and CHL 65 (2240 Upper James Street, farmscape)
			  ○ Encroachment and property acquisition is anticipated. Residences are located within 40m vibration buffer from the ROW, therefore indirect impacts due to vibration are anticipated.
			  ○ If portions or all of the subject properties are acquired and impacted, discussions should be had with the City's Heritage Planners to determine if a Cultural Heritage Evaluation Report (CHER) is recommended to evaluate the property's Cultural Heritage Value or Interest (CHVI) using Ontario Regulation 9/06.
				• Direct impacts to CHL 65 (2240 Upper James Street, farmscape), CHL 66 (Talbot Lane, streetscape)
				• Direct impact to BHRs 60 (2274 Upper James Street), 61 (19 Talbot Lane), 62 (24 Talbot Lane), 63 (38 Talbot Lane), 65 (2280 Upper James)
				  ○ Property acquisition is expected because of this alternative and should be avoided from a cultural heritage perspective.
				  ○ The road design may cause temporary impact to some areas of the property. The landscape should be returned to pre-construction conditions, resulting in minimal irreversible negative impacts.
				  ○ If the full property or a portion of it is acquired, a CHER is recommended to evaluate the property's CHVI.
				• Indirect impacts are anticipated to BHRs 58 (2272 Upper James Street), 66 (2284 Upper James Street):
				  ○ Encroachment, property acquisition, and vibration impacts are expected because of this alternative and should be avoided from a cultural heritage perspective.

Archeological Resources	Archaeological Potential	• Crosses through undisturbed woodlot feature; archaeological potential would need to be evaluated.	• Primarily through brownfield (i.e., previously disturbed) lands with minimal archaeological potential (subject to evaluation)	
Cultural Heritage Rating		**More Preferred**	**Moderately Preferred**	**Least Preferred**

Evaluation Criteria	Indicator	Preliminary Collector 6N Corridor Alignment Alternatives		
		Alternative 1	**Alternative 2**	**Alternative 3**
Utilities				
Impacts to existing utilities	Gas infrastructure near north entrance to HSR Facility	• No anticipated impacts	• No anticipated impacts	• No anticipated impacts
	Gas infrastructure within the HSR Facility Site (Fueling Station and associated underground and above ground infrastructure)	• No anticipated impacts	• Significant impact, particularly if the proposed alignment straddled the south property line. • Temporary fuelling station would be required and new fueling station built at a new location. • Existing fueling station was last rebuilt in 2013 at a cost of approximately $13M.	• No anticipated impacts
	Hydro	• Not reviewed as part of this study. It is assumed hydro impacts/scope would be relatively equal among the 3 alternatives. • Hydro pole relocations will likely be required at new intersection with Upper James Street.		
	Telecommunications (Bell, Rogers, etc.)	• Not reviewed as part of this study. It is assumed telecommunications impacts/scope would be relatively equal among the 3 alternatives. • Minor relocations may be required at new intersection with Upper James Street.		
Utilities Rating		**More Preferred**	**Least Preferred**	**More Preferred**

Evaluation Criteria	Indicator	Preliminary Collector 6N Corridor Alignment Alternatives		
		Alternative 1	**Alternative 2**	**Alternative 3**
Cost and Constructability				
Capital Construction Cost	Order of Magnitude (Based on total length of road)	• $$	• $$	• $$$ • Relatively longest roadway alternative that would require additional grading needs, utilities, maintenance, etc.
	Total watercourse and wildlife crossings (i.e., number of structures required)	• Requires several wildlife crossing features and fencing along most of the corridor. • Crosses several headwater features; watercourse crossings will need to be assessed for structural requirements.	• Would require some fencing along corridor for wildlife. • Crosses several headwater features; watercourse crossings will need to be assessed for structural requirements.	• Would require some fencing along corridor for wildlife. • Crosses the most headwater features; watercourse crossings will need to be assessed for structural requirements.
Property Cost	Total area of property acquisition	• Second most direct impacts to properties and most indirect impacts that would require mitigation measures (such as noise walls)	• Fewest direct property impacts and moderate area of acquisition requirements.	• Most direct property impacts and greatest area of acquisition requirements.
Constructability and Construction Staging	Construction, access modifications, etc.	• Greatest consideration for geotechnical, environmental and grading needs due to number and size of wetland features crossed.	• May require modification to existing south access for HSR facility.	• Fewest constructability and staging concerns, assuming all properties along Talbot Lane are acquired.
Cost and Constructability Rating		**Moderately Preferred**	**Moderately Preferred**	**Less Preferred**

Evaluation Criteria	Indicator	Preliminary Collector 6N Corridor Alignment Alternatives		
		Alternative 1	Alternative 2	Alternative 3
Summary				
Transportation and Traffic		**Moderately Preferred**	**Less Preferred**	**Moderately Preferred**
HSR Facility Impacts		**More Preferred**	**Least Preferred**	**Moderately Preferred**
Socio-Economic Environment		**Moderately Preferred**	**More Preferred**	**Less Preferred**
Natural Environment		**Less Preferred**[6]	**Moderately Preferred**	**More Preferred**
Cultural Heritage		**More Preferred**	**Moderately Preferred**	**Least Preferred**
Utilities		**More Preferred**	**Least Preferred**	**More Preferred**
Cost and Constructability		**Moderately Preferred**	**Moderately Preferred**	**Less Preferred**
Overall Rank		**More Preferred**	**Less Preferred**	**Moderately Preferred**

[6] While Alternative 1 is least preferred in the Natural Heritage criteria due to the larger area of impact, the impacts can be mitigated through remediations, compensation, or other physical mitigation, such as enhanced landscaping, provision of wildlife crossings, etc. If Alternative 1 is selected as the preferred Alternative, the City is recommended to commit to these mitigations as part of the protection for this Alternative.