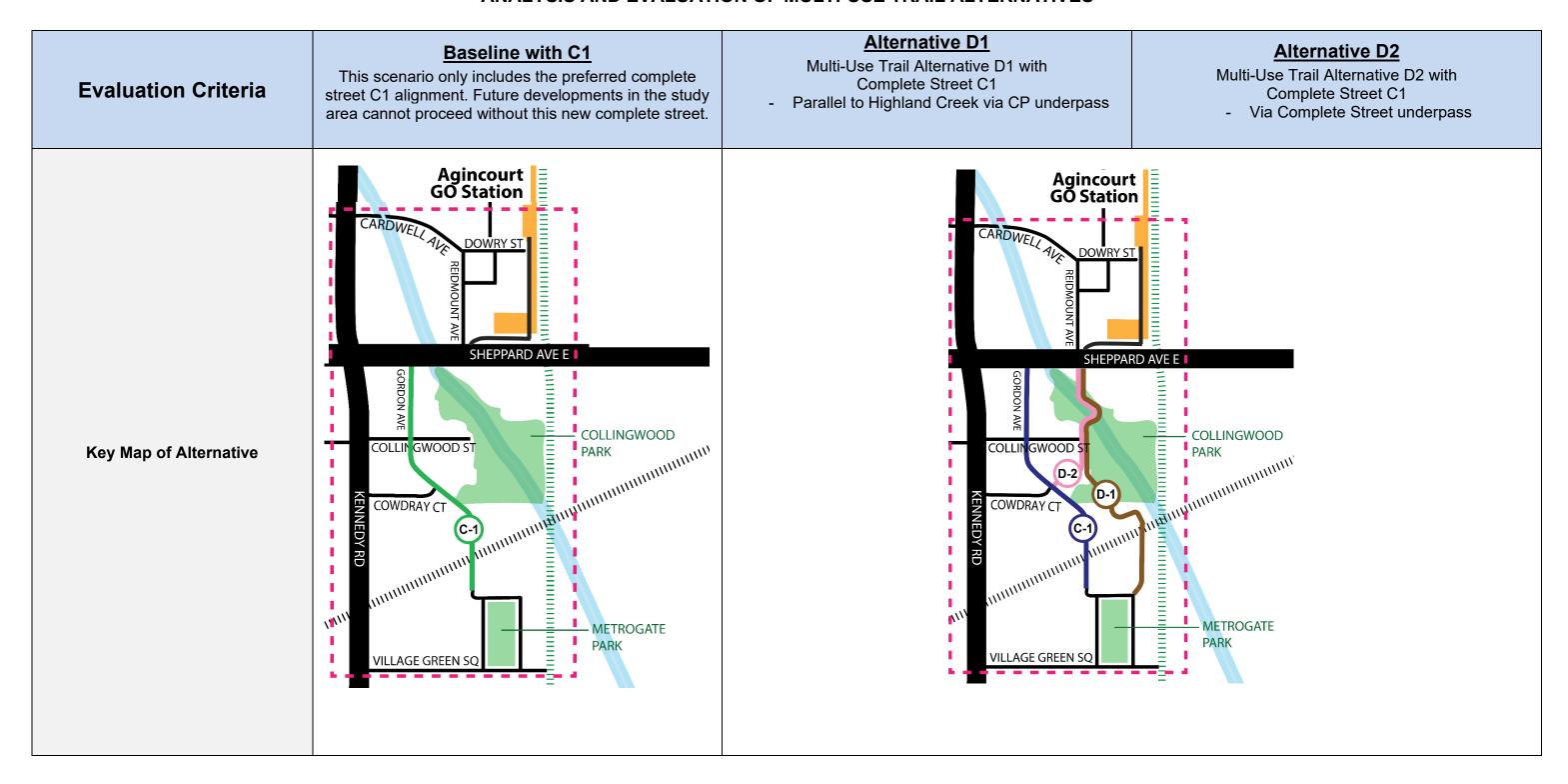
May 2024 CA-WSP-19M-01888-00

APPENDIX Q

Multi-Use Trail Evaluation

ANALYSIS AND EVALUATION OF MULTI-USE TRAIL ALTERNATIVES





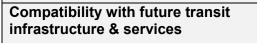
Evaluation Criteria	Baseline with C1 This scenario only includes the preferred complete street C1 alignment. Future developments in the study area cannot proceed without this new complete street.	Alternative D1 Multi-Use Trail Alternative D1 with Complete Street C1 - Parallel to Highland Creek via CP underpass	Alternative D2 Multi-Use Trail Alternative D2 with Complete Street C1 - Via Complete Street underpass
POLICY FRAMEWORK			
Policies and Guidelines	Less resiliency and alternate routing options for users	 Promotes healthy and active communities through multiple active transportation routes (i.e. Complete Street and new multi-use trail) that are safe, meet the need of pedestrians, foster social interaction and facilitates community connectivity Provides trail frontage to Collingwood Park A longer portion of the trail will be in the higher risk TRCA floodplain zone with higher velocity and flood depth (when compared to D2) 	 Promotes healthy and active communities through multiple active transportation connections (i.e. Complete Street and partial multi-use trail) that meet the need of pedestrians, foster social interaction and facilitates community connectivity Provides trail frontage to Collingwood Park
Addressing Problem/Opportunity Statement	Does not provide a secondary route option for active transportation users to and from the key destination - Agincourt GO Station	Provides additional route choice for active transportation – particularly to access Agincourt GO Station	Provides a parallel route for lands north of Cowdray Court, supporting additional route choice for active transportation – particularly to access Agincourt GO Station
Policy Framework Summary:			
Based on the evaluation, Alternativ	es D1 and D2 are equally preferred for the following rea	asons:	
	rally preferred equally because they provide an additional a		ollingwood Park.



	Pacalina with C4	Alternative D1	Altornativo D2
Evaluation Criteria	Baseline with C1 This scenario only includes the preferred complete street C1 alignment. Future developments in the study area cannot proceed without this new complete street.	Multi-Use Trail Alternative D1 with Complete Street C1 - Parallel to Highland Creek via CP underpass	Alternative D2 Multi-Use Trail Alternative D2 with Complete Street C1 - Via Complete Street underpass
HEALTHY COMMUNITIES			
Promotion of transportation choice through the provision of well-connected, continuous, and comfortable cycling and walking routes	Does not promote transportation choice – no dedicated trail for pedestrians and cyclists	 Enhanced connectivity - to Sheppard Avenue, Agincourt GO Station and parkland Additional trail connection for residents located on the eastern side of Village Green Square. Increased access to the Collingwood park 	 Enhanced connectivity - to Sheppard Avenue, Agincourt GO Station and parkland Increased access to the Collingwood park
Potential to incorporate streetscape amenities and landscape elements	There is no potential to incorporate landscaping since no new trail is proposed	Potential for installation of streetscape amenities and landscaping along the trail	Potential for installation of streetscape amenities and landscaping along the trail
Supports accessible network for all ages and abilities	Does not provide additional accessible network for users of different age and ability	Better environment for cyclists travelling to/from Agincourt GO Station or to the east along Sheppard Avenue East - least interaction with motor vehicles, quieter, less emissions Longer continuous trail for more consistent walking and cycling environment	 Better environment for cyclists travelling to/from Agincourt GO Station or to the east along Sheppard Avenue East - less interaction with motor vehicles, quieter, less emissions Requires cyclists and pedestrians to transition between the uni-directional bike lane and sidewalk along the complete street and the multi-use trail at near the Cowdray Court/complete street intersection
Reduce greenhouse gas emissions	Does not help reduce greenhouse gas emissions	Additional active transportation route supports a shift in modal split from driving to active transportation	Additional active transportation route supports a shift in modal split from driving to active transportation
Impacts to air quality	No impacts to air quality and potential to encourage active transportation over personal automobile use	No impacts to air quality and potential to encourage active transportation over personal automobile use	No impacts to air quality and potential to encourage active transportation over personal automobile use
Connections to Community Facilities (e.g. community centres, GO Station, Agincourt Mall)	Does not provide additional connection to the Community Facilities	Provides convenient access/routing to the Agincourt GO Station entrance and to Sheppard Avenue east of Highland Creek	Provides convenient access/routing to the Agincourt GO Station entrance and to Sheppard Avenue east of Highland Creek



Evaluation Criteria	Baseline with C1 This scenario only includes the preferred complete street C1 alignment. Future developments in the study area cannot proceed without this new complete street.	Alternative D1 Multi-Use Trail Alternative D1 with Complete Street C1 - Parallel to Highland Creek via CP underpass	Alternative D2 Multi-Use Trail Alternative D2 with Complete Street C1 - Via Complete Street underpass
Healthy Communities Summary:			
 Provides a new active transportation Provides a trail connection for resident 	ealthy community perspective for the following reason on facility which increases resilience of the community lents on the eastern side of Village Green Square, whereas of active transportation for all ages and ability within the students.	s residents on western side of Village Green Square may เ	utilize the Complete Street alternative
Provide equitable, safe & reliable access to high quality, efficient transit, walking & cycling routes	Does not provide additional access for walking and cycling	 The addition of a trail provides a high quality and efficient way of getting to the Agincourt GO Station Trail alignment is independent of complete street C1 and more efficient for active transportation since they do not need to interface with auto traffic at Cowdray Court/Complete street C1 	 The addition of a trail provides a high quality and efficient way of getting to the Agincourt GO Station The need to transition between a multi-us trail to uni-directional cycle track at the intersection of Cowdray Court and the complete street is not as safe as option Complete street.
Mitigate vehicular congestion (travel time & intersection operations)	Does not promote diversion of auto trips to walking or cycling	 The addition of a multi-use trail will improve convenience for active transportation and encourage a shift to active modes. With cyclists and pedestrians gravitating to the trail, there will be lower conflicts at 	 The addition of a multi-use trail will improve convenience for active transportation and encourage a shift to active modes. With cyclist and pedestrians gravitating to the trail, there will be lower conflicts at other study intersections





 Compatible with future transit infrastructure and services



Compatible with future transit infrastructure and services

other study intersections



This option introduces more pedestrians and cyclists crossing at the two intersections along the complete street at Cowdray Court and Village Green Square,

which are conflicting movements for motorist operations resulting in higher travel time

Compatible with future transit infrastructure and services



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New/improved pedestrian and cycling routes and connections	There will not be a new/improved pedestrian and cycling route and connection provided	 The MUT can be used by pedestrians and cyclists and forms a secondary route for users both north and south of the CP Rail corridor. This alternative provides redundancy in the network in the event of an incident or maintenance requires closure of the street underpass at the CP Rail corridor Improved access to park space 	The MUT can be used by pedestrians and cyclists and forms a secondary route – primarily for users in the study area north of Cowdray Court only Improved access to park space
Traffic impacts to existing streets/residents	Increased pedestrian and cyclist volumes on the existing streets, which may impede traffic operations in the study area	The addition of a multi-use trail will decrease pedestrian/cycling volumes on the area streets, reducing constraints to traffic	The addition of a multi-use trail will decrease pedestrian/cycling volumes on the area streets, reducing constraints to traffic
Network resiliency for emergency service vehicles	Does not address emergency vehicle routing resiliency	 Does not address emergency vehicle routing resiliency Provides access to park and creek for emergency response on bike or on foot 	 Does not address emergency vehicle routing resiliency Provides access to park and creek for emergency response on bike or on foot
Equitable Mobility Summary:			

Alternative D1 is the preferred option, because:

- Alternative D1 provides a separate multi-use trail that can serve communities north and south of the CP Rail corridor independent of the complete street. This provides resiliency in the active transportation network and a more consistent user environment along the trail.
- D1 provides a direct connection to/from the Agincourt GO Station entrance vicinity as well as those traveling to/from the east along Sheppard Avenue.
 D1 enhances emergency access to the park and creek

CONSTRUCTABILITY & DESIGN			
Construction Costs	No cost to build a MUT	 Has the highest construction cost since the MUT length is longer (approximately 645m) than D2 and requires a crossing through the CP Rail abutments. Approximate magnitude of order cost: \$400,000 	 Costs associated with building the MUT north of Cowdray Court. Magnitude of order estimate for the approximately 345m long trail: \$150,000 (Note: this assumes that the underpass through the CP Rail corridor is already built as part of complete street C1)



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Impact on Floodplain	No additional impact on the floodplain	 Minor impact to flood storage volumes. Undetectable increase to flood elevations & velocities Exposure of trail pathway to flood impacted areas Exposure of trail to fast moving flood waters near railway crossing (rare instances) 	 Reduced minor impact to flood storage volumes. Undetectable increase to flood elevations & velocities Reduced exposure of trail pathway to flood impacted areas Minimal exposure to high flood velocity
Impact on Utilities	No additional utility impact	If lighting is desired along the trail, it may involve some power extension – typically from the adjacent public streets such as Village Green Square, Cowdray Court and Collingwood Street. Solar options may also be available	If lighting is desired along the trail, it may involve some power extension – typically from the adjacent public streets such as Village Green Square, Cowdray Court and Collingwood Street. Solar options may also be available.
Lifecycle / Operations and maintenance costs of new infrastructure	No additional maintenance or operating cost for a MUT	 Higher maintenance and operating costs than Alternative D2 since the length of the trail is notably longer than D1. May have maintenance costs associated with CP Rail underpass crossing 	Ongoing maintenance and operating costs (i.e., buffer maintenance, snow clearance, pavement fixes) along the trail
Construction phasing	No additional construction required	 Access impacts to Collingwood Park during construction The construction of the trail under the CP Rail corridor would need to be coordinated with the rail authority to ensure minimal disruption to rail operations Flexibility to construct the MUT in parallel or independent of complete street C1 	 Access impacts to Collingwood Park during construction Construction phasing partially dependent on the timing of complete street C1 – particularly near the intersection with the complete street and Cowdray Court
Constructability & Design Summary:			

Notwithstanding the 'Do Nothing' option which ranks the highest since it does not involve any new trail construction, Alternative D2 is preferred over Alternative D1 for the following reasons:

- D1 involves a longer trail and thus higher capital and maintenance costs
- The crossing of D1 via the CP Rail abutment is in a vicinity where more complicated staging is involved
- D1 results in slightly more impact to the floodplain system than D2



Evaluation Criteria	Baseline with C1 This scenario only includes the preferred complete street C1 alignment. Future developments in the study area cannot proceed without this new complete street.	Alternative D1 Multi-Use Trail Alternative D1 with Complete Street C1 - Parallel to Highland Creek via CP underpass	Alternative D2 Multi-Use Trail Alternative D2 with Complete Street C1 - Via Complete Street underpass
SOCIO-ECONOMIC			
Property impacts	No additional private property impact required	Private property impacts to 4061 Sheppard Avenue East and the Cowdray Court properties	Private property impacts to 4061 Sheppard Avenue East and the Cowdray Court properties
Changes in neighbourhood characteristics	No change to neighbourhood characteristics	 Potential for minor effects to how the existing Collingwood park space is used Increases access to Collingwood Park from Sheppard Avenue and provides easterly access for neighbourhood south of the rail corridor 	Potentials for minor effects to how the existing Collingwood park space is used Increases access to Collingwood Park from Sheppard Avenue
Impacts to existing land uses	No change to existing land uses	No significant changes to existing land uses	No significant changes to existing land uses
Soil contamination	This option will require no additional excavation of shallow soil and existing soil cover will remain undisturbed	 Contaminated soil may be encountered during construction in the vicinity and south of the CP Railway which requires further investigation during next design phase Potential to encounter contamination at 4061 Sheppard E during construction 	 Limited impacts due to minimal proposed cut activities associated with this alignment. Shallow soil contamination was not identified in the investigation boreholes in the vicinity of this alignment Potential to encounter contamination at 4061 Sheppard E during construction
Stormwater management	 No change in peak flow rates No additional loading to receiving water systems No increase in erosive energy delivered to Creek No change in runoff destination 	 Minor increase to peak flow rates without mitigation Minor increase to additional loadings from MUP users Minor Increase in erosive energy to Creek without mitigation Small increase in annual runoff due to additional impervious surface without mitigation Approximately 250 metres of the MUT of the trail will be in higher risk floodplain zones with the potential for higher velocity and flood depths during a storm event. However, trail users can navigate 	 Minor increase to peak flow rates without mitigation Minor increase to additional loadings from MUP users Minor Increase in erosive energy to Creek without mitigation Small increase in annual runoff due to additional impervious surface without mitigation Approximately 115 metres of the MUT of the trail will be in higher risk floodplain zones with the potential for higher velocity and flood depths during a storm event. However, trail users can navigate to the



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		to the west (away from the flood plain) in the event of a larger storm	west (away from the flood plain) in the event of a larger storm
Noise impact management	No change	Addition of MUT facility does not impact noise receptors	Addition of MUT facility does not impact noise receptors
Impact to Collingwood Park	No impacts to Collingwood Park	Impacts to the existing Collingwood Park are primarily to edge conditions or within the footprint of existing pathways	Impacts to the existing Collingwood Park are primarily to edge conditions or within the footprint of existing pathways
Socio-Economic Summary:			
	ption which ranks the highest since it does not involve ounter additional contamination at the rail crossing for Altern		preferred over Alternative D1 for the following reason:
Impact to wildlife	No impact to natural features and wildlife habitat	 South of rail line, alignment travels through CUW North of rail line, alignment travels through CUM and Parkland but is set back from riparian woodland, FOD7 Utilizes existing crossing of FOD7/watercourse CUW provides limited local habitat for urban wildlife species No significant habitat or species 	Alignment travels through CUM and Parkland which provide very limited habitat for wildlife Utilizes existing crossing of FOD7/watercourse Impact is marginal
Impact to groundwater quality or quantity	No dewatering required	Dewatering is not anticipated to be required for during construction.	Dewatering is not anticipated to be required for during construction.
Impact to fish and fish habitat	 No impact to fish and fish habitat No crossing of watercourse 	No impact to fish and fish habitat Use of existing trails and pedestrian crossing of watercourse	No impact to fish and fish habitat Use of existing trails and pedestrian crossing of watercourse



Evaluation Criteria	Baseline with C1 This scenario only includes the preferred complete street C1 alignment. Future developments in the study area cannot proceed without this new complete street.	Alternative D1 Multi-Use Trail Alternative D1 with Complete Street C1 - Parallel to Highland Creek via CP underpass	Alternative D2 Multi-Use Trail Alternative D2 with Complete Street C1 - Via Complete Street underpass
Impacts to vegetation	No impacts to vegetation	 Minimizes impacts to trees within the TRCA's regulated area and the Cities Ravine and Natural Feature Protection Limit (RNFP) through use of existing driveway at 4061 Sheppard E, connection to an existing trail, and utilizing the existing crossing of West Highland Creek Proposed Multi-Use Trail route passes through an open canopy section of naturalized areas (i.e. Collingwood Park, and area south of existing Park) and minimizes impacts to existing trees Potential to result in minor vegetation removal and tree root impact in CUW 	 Minimizes impacts to trees within the TRCA's regulated area and the Cities Ravine and Natural Feature Protection Limit (RNFP) through use of existing driveway at 4061 Sheppard E and Complete Street, connection to an existing trail, and utilizing the existing crossing of West Highland Creek Proposed Multi-Use Trail route passes through an open canopy section of naturalized areas (i.e. Collingwood Park, and area south of existing Park) and minimizes impacts to existing trees, except where trail connects to the Complete Street
Impacts to species of concern (vegetation and wildlife)	No significant species or habitat impacted	No significant species or habitat impacted	No significant species or habitat impacted
Fluvial Geomorphology	No impacts on fluvial geomorphology	No impacts given existing crossing over the creek will be utilized	No impacts given existing crossing over the creek will be utilized
Natural Environment Summary:	ption which ranks the highest since it does not involve		

Notwithstanding the 'Do Nothing' option which ranks the highest since it does not involve any new trail construction, Alternative D2 is preferred over Alternative D1 for the following reasons:

- Lower impacts to wildlife and wildlife habitat.
- Lower impacts to vegetation.



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CUTURAL HERITAGE			
Impact to identified potential cultural heritage resources	No impacts to cultural heritage resources	No impacts to cultural heritage resources	No impacts to cultural heritage resources
Impact to archaeological resources	No impacts to archaeological resources are required	 Property inspection determined the area to be predominantly disturbed by modern construction activities A number of areas exhibit archaeological potential (e.g. proximity to water sources, historic roadways) and will require Stage 2 Archaeological Assessment Since the alignment option comes into proximity with the West Highland Creek for a much smaller portion of the trail than Alignment option 1, this option has the least archaeological potential 	 Property inspection determined the area to be predominantly disturbed by modern construction activities A number of areas exhibit archaeological potential (e.g. proximity to water sources, historic roadways) and will require Stage 2 Archaeological Assessment
Cultural Heritage Summary:			
reasons: • No impacts to potential culturations and the second s	option which ranks the highest since it does not involval heritage resources a 2 archaeology assessment to be completed.	e additional impacts with the Complete Street option,	Alternatives D1 and D2 rank equally for the following

Both options will require Stage 2 archaeology assessment to be completed.



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OVERALL SUMMARY			
OVERALL EVALUATION			
CONCLUSION	also network resiliency for active transportation -	independent of the complete street. This provides flex - particularly to and from Agincourt GO Station. e trail as opposed to D2, where a pedestrian and cyclis	
LEGEND	Rating:		
	Least Benefits / Most Impacts	Most Benefits/	

Least Impacts

Most Impacts

