



Report to: Development Services Committee

Meeting Date: July 16, 2024

SUBJECT: Tri-party Legal Agreement Authorization between the City of Markham, Regional Municipality of York, and the City of Richmond Hill for the Highway 404 Mid-Block Crossing - North of 16th Avenue Project (Ward 2)

PREPARED BY: Alberto Lim, Capital Works Engineer, Ext. 2860
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RECOMMENDATION:

- 1) That the report entitled “Tri-party Legal Agreement Authorization between the City of Markham, Regional Municipality of York, and the City of Richmond Hill for the Highway 404 Mid-Block Crossing – North of 16th Avenue Project (Ward 2)”, be received;
- 2) That the Mayor and City Clerk be authorized to execute an agreement with the Regional Municipality of York (the Region) and the City of Richmond Hill (Richmond Hill) to govern the design, property acquisition, project management, construction, operation, road surface maintenance, long-term maintenance and replacement of the Highway 404 Mid-Block Crossing, between 16th Avenue and Major Mackenzie Drive, and cost-sharing with respect to same, provided that the form of such agreement is satisfactory to the Commissioner of Development Services and the City Solicitor;
- 3) That after the Highway 404 Mid-Block Crossing project is complete, the Mayor and Clerk be authorized to execute any documents and agreements required to acquire lands from the Region for nominal consideration, provided the form of such documents and agreements are satisfactory to the Commissioner of Development Services and the City Solicitor; and,
- 4) That staff be authorized and directed to do all things necessary to give effect to this resolution.

PURPOSE:

The purpose of this report is to provide a project update on the Highway 404 Mid-Block Crossing project (Project), and to obtain Council authorization to enter into an agreement with the Region and Richmond Hill to govern the design, property acquisition, project management, construction, operation, road surface maintenance, long-term maintenance, and replacement of the Project.

BACKGROUND:

In 2012, the City of Markham (Markham) Council endorsed a study prepared for the Region, Markham, and Richmond Hill that confirmed the need for east-west collector road crossings over Highway 404 to support future growth. The Mid-Block Crossings identified are located at the following locations:

- North of Highway 7
- North of 16th Avenue
- North of Major Mackenzie Drive
- North of Elgin Mills Road

These new crossings over Highway 404 are identified in Markham's and the Region's Official Plans. The proposed Mid-Block Crossings will be owned and maintained by the respective local municipalities. The crossings serve to connect communities and street networks across Highway 404 and allow local trips to be redirected from the regional east-west arterial roads to the new crossings. The first of the crossings (north of Highway 7) was constructed and opened to the public in 2018 (Norman Bethune Avenue).

To further enhance traffic operations, the study identifies a second Mid-Block Crossing between 16th Avenue and Major Mackenzie Drive. This location will connect Orlando Avenue/Vogell Road in Richmond Hill and Cachet Woods Drive/Markland Street in Markham.

The scope of work for this project includes the following major components:

- Widening, extending, and connecting Orlando Avenue in Richmond Hill and Markland Street in Markham, providing a new four-lane road over Highway 404 and the Rouge River.
- Extending Cachet Woods Court in Markham to connect to the newly constructed road crossing.
- Constructing a bridge over Highway 404 and a bridge over the Rouge River.
- Constructing sidewalks, multi-use pathways and landscaping enhancements.
- Installing two (2) low impact development features to improve storm water quality.
- Planting thousands of native trees and plants, stabilizing and naturalizing the Rouge River.

The Municipal Class Environmental Assessment (EA) study and detailed design for the Project were led by the Region and the detailed design was completed in May 2023. The Region awarded the construction contract in August 2023. Construction is currently underway and scheduled to be completed by November 2026.

See **Attachment A** for the location plan of Highway 404 Mid-Block Crossing.

See **Attachment B** for the proposed schedule of construction works for the Project.

Agreements:

York Region and the Ministry of Transportation Agreement An agreement between the Region and the Ministry of Transportation (MTO) is being finalized for the construction of a grade-separated structure over Highway 404. This Agreement governs the long-term maintenance and replacement of the grade separated structure. Markham, the Region, and Richmond Hill all share equally the costs of the Region's compliance with its obligations in this Agreement.

Tri-Party Agreement

Markham, the Region, and Richmond Hill will need to enter into an agreement governing the design, property acquisition, project management, construction, operation, cost sharing, long-term maintenance, and replacement of the Project (the "**Tri-Party Agreement**"). The Region has agreed to lead the Project for both design and construction and Markham and Richmond Hill have agreed to share the costs of the Project.

The core principles of the Tri-Party Agreement are:

▪ Tri-Party Cost of the Works:

Markham, the Region, and Richmond Hill will equally share the "Tri-Party Cost of the Works" related to the Highway 404 crossing between Vogell Road in Richmond Hill and Cachet Woods in Markham. The Tri-Party cost of the works includes detailed design, costs to acquire lands from third parties, road construction, structural, and electrical works, and costs to cover all other components required to implement the Highway 404 crossing per MTO's standards.

▪ Municipal Cost of the Works:

The "Municipal Cost of the Works" includes works within the respective municipality's rights-of-way connecting to the Highway 404 crossing such as road illumination, railing, lighting, sign illumination, sidewalks, boulevard aprons to separate roads from sidewalks or multi-use paths, and streetscaping features. For Richmond Hill, the Municipal Cost of the Works includes the cost of constructing the new roads and appurtenances between Leslie Street and Vogell Road. For Markham, the Municipal Cost of the Works includes the costs of constructing the new roads and appurtenances between Cachet Woods and Woodbine Avenue including the reconstruction of Markland Street. The Tri-Party Agreement states that Richmond Hill and Markham will independently bear the "Municipal Cost of the Works" within their respective municipalities.

▪ Project Management and Administration:

The Region is leading the construction phase of the Project; therefore, Richmond Hill and Markham have agreed to pay 6% for their respective share of the construction contract cost to the Region to cover tendering, construction, project management and contract administration.

▪ Long-Term Maintenance and Replacement:

In accordance with the terms of the MTO agreement, MTO will accept the long-term maintenance of the grade separated structure over Highway 404, except for the maintenance and repairs to the road surfaces of the Highway 404 grade separated structure.

▪ **Road Surface Rehabilitation and Maintenance:**

The costs, liabilities and obligations related to the ongoing summer and winter maintenance and repairs of the road surface of the Highway 404 crossing structure will be borne by Markham and Richmond Hill equally on alternating years basis.

The terms and requirements of this agreement between Markham and Richmond Hill will be included as a separate schedule in the Tri-Party Agreement. The basis of the maintenance schedule arrangement is to alternate responsibilities with Richmond Hill every year beginning on October 1st of the year of commissioning.

During the one-year, each party would perform maintenance and road surface rehabilitation/repair activities on the Mid-Block Crossing between Vogell Road in Richmond Hill and Cachet Woods in Markham.

Winter Maintenance will be performed at the sole cost of the municipality with responsibility during their respective term. The costs of any required road surface rehabilitation and repairs will be shared proportionally by Markham and Richmond Hill irrespective of the term. The municipality with the responsibility to perform the works will invoice the other municipality for its share of the cost for the road surface maintenance works plus an administrative charge of four per cent (4%) for the design, inspection, and contract administration of said works.

Richmond Hill will undertake road surface and winter maintenance beginning from the date of the final acceptance of the Project. Richmond Hill's maintenance responsibility will continue until September 30th of next year, upon which Markham will take over.

▪ **Ownership and Jurisdiction:**

Markham and Richmond Hill will have title to and jurisdiction over the portion of Highway 404 crossing that is located on Markham lands and the Richmond Hill lands, respectively. By the MTO agreement, the MTO will have title to and jurisdiction over the part of the Highway 404 crossing that is located on the province's lands, i.e., the Highway 404 Mid-Block Crossing structure.

See Attachment C for the Jurisdiction plan of the Project.

OPTIONS/ DISCUSSION:

Previous Approvals:

Staff have previously reported to Council and obtained approval for the following:

- In October 2019, staff received authorization from Council to issue a purchase order to the Region for Markham's share of the cost for the EA study and the detailed design of the Project.
- In November 2020, staff received authorization from Council to issue a purchase order to the Region for Markham's share of the cost of property acquisition required for the Project.
- In June 2022, staff received authorization from Council to issue a purchase order to the Region for Markham's share of the cost of utility relocation works for the Project.
- In May 2024, staff issued a memorandum to the CAO and received approval for authorization to issue a purchase order to the Region for Markham's share of the cost of construction for the Project.

FINANCIAL CONSIDERATIONS

Council previously approved project accounts 23099, 22030, 19035 and 18048 to fund the total amount of \$67,092,345.80 for Markham's share of the Project. The breakdown of the project budgets is shown in Table 1:

Table 1: Markham Approved Budgets (Incl. of HST Impact)

Project Account	Budget
Construction (Account No. 23099)	\$ 53,552,100.00
Utility relocation cost (Account No. 22030)	\$ 947,542.00
Property Acquisition (Account No. 19035)	\$ 11,984,300.00
EA and Design (Account No. 18048)	\$ 608,403.80*
Total Project Cost (Markham's Share):	\$ 67,092,345.80

*The total approved budget for the EA and Design was \$1,366,900.00 which included EA & Design for three Mid-Block Crossing locations.

A breakdown of Markham's share of the total project cost is detailed in Table 2 below.

Table 2: Markham's Share of Total Project Cost

Items	Amount	Notes
Construction Costs:		
Advanced Tree Clearing (Markham Share)	\$ 72,066.38	(a)
Centre Pier (MTO) (Markham Share)	\$ 566,666.67	(b)
Construction Contractor's Bid (Markham Share)	\$34,172,687.98	(c)

Sub-Total (Construction)		\$34,811,421.03	
Contingency:		\$ 5,028,195.86	(d)
Total Construction Costs (Markham Share)		\$39,839,616.89	
Other Costs in Markham's Jurisdiction:			
Property Acquisition		\$ 8,038,750.89	
Utility Relocation		\$ 862,179.04	
Contract Administration and Site Inspection		\$ 3,055,005.00	
Material Testing		\$ 675,834.17	
Total Other Costs		\$12,631,769.10	
Total Construction Costs + Other Costs (Markham Share)		\$52,471,385.99	
Other Costs in the Tri- Party Section of the Work	\$25,526,777.65	\$ 8,508,925.88	(e)
Sub-Total		\$60,980,311.87	
YR Admin Fees (6%)		\$ 3,658,818.71	
Markham's Share of Project Cost (Excl. of HST)		\$64,639,130.58	
1.76% HST Impact		\$ 1,137,648.70	
Sub-Total		\$65,776,779.28	
Markham Internal Fee (2%)		\$ 1,315,566.53	
Total Project Cost for Markham (Incl. HST)		\$67,092,345.80	

Notes:

- (a) The full cost of the tree-clearing (\$216,199.13) carried out by the Region is cost-shared equally between the three municipalities.
- (b) The full cost of the centre pier (\$1,700,000.00) constructed by MTO is cost-shared equally between the three municipalities.
- (c) The amount of \$34,172,687.98 is the contractor's bid for the tender items that are 100% costs by the City of Markham.
- (d) Contingency amount requested by the Region at approximately 12.6% of the total construction cost including contingency (\$5,028,195.86 / \$39,839,616.89).
- (e) Tri-Party cost of \$25,526,777.65 to be equally shared by all three municipalities. This cost includes the EA Study, detailed design, property acquisition, contract administration and material testing.

OPERATIONS AND MAINTENANCE COSTS FOR MUNICIPAL INFRASTRUCTURES:

Operations and Engineering Departments:

The Operations Department estimates that the annual cost of the operations and maintenance of the Project situated in Markham's jurisdiction (Markland Street & Cachet Woods Courts) is **\$79,888.74** starting in 2025. This cost is comprised of \$69,178.74 for roads, \$6,000.00 for traffic signals, and \$4,710.00 for streetlights.

Environmental Services Department:

The Environmental Services Department estimates that the annual cost of the operations and maintenance of the Project situated in the City's jurisdiction is **\$8,000.00** starting in 2025. This cost is comprised of \$4,000.00 for each of the two (2) low-impact development facilities.

Funding to address these ongoing operations and maintenance requirements will be incorporated as part of the annual budget process.

Life Cycle Impact:

As part of the Lifecycle Replacement and Capital Reserve study update, the future replacement costs of project assets will be incorporated. Current estimates are as follows:

- Traffic Signals - \$180,000.00
- Roads, Sidewalks, MUPs (Markland Street & Cachet Woods Courts) - \$1,177,410.00

Future life cycle costs for streetlights will be updated upon completion of the project to reflect the inventory increase.

See Attachment D for details of estimated operations and maintenance, and asset replacement costs.

ALIGNMENT WITH STRATEGIC PRIORITIES:

The proposed work is required to continue accommodating the development and growth in the City of Markham. The proposed work also includes multi-use pathways that will provide opportunities for active transportation with connectivity between residential areas. This is a strategy to eliminate gaps in the transportation network and aligns with the City's Strategic Plan goals of "Safe, Sustainable & Complete Community" and "Stewardship of Money & Resources".

BUSINESS UNITS CONSULTED AND AFFECTED:

Operations, Environmental Services, Finance and Legal Departments have been consulted on this report and their comments have been incorporated.

RECOMMENDED BY:

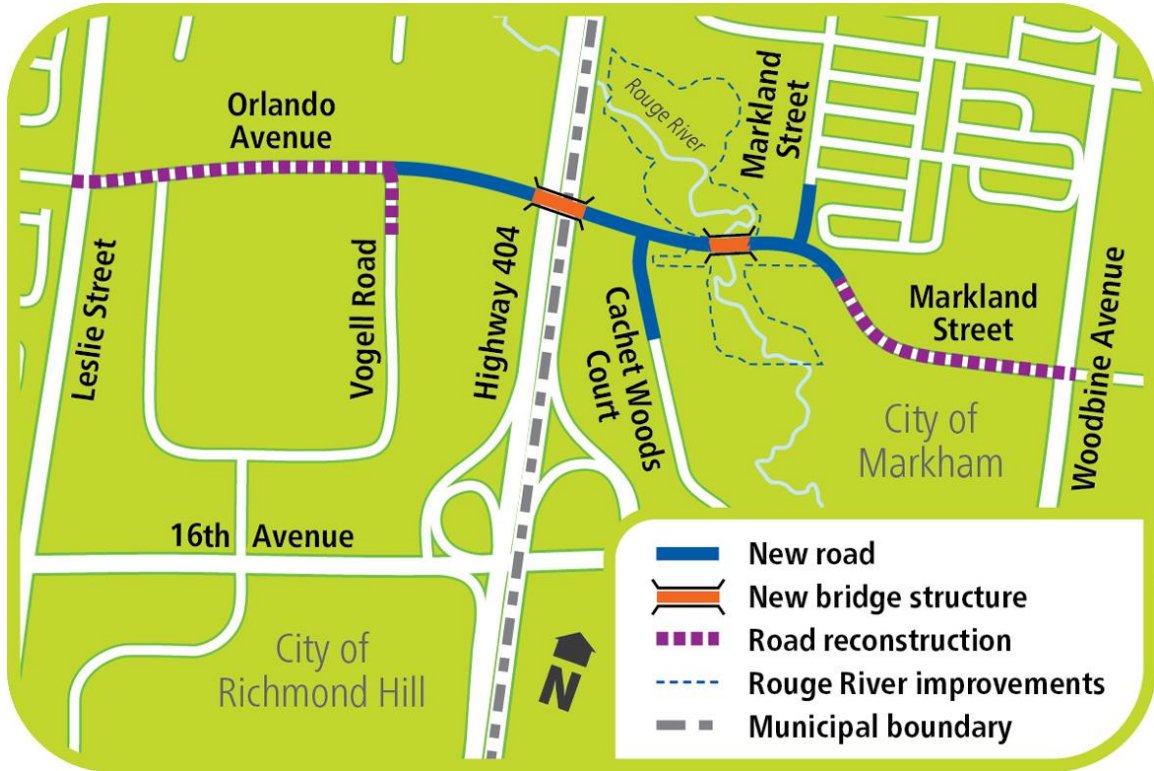
Frank Clarizio
Director of Engineering

Arvin Prasad
Commissioner of Development Services

ATTACHMENTS:

- Attachment A: Location Plan – Mid-Block Crossing North of 16th Avenue
- Attachment B: Proposed Schedule of Construction Works – Mid-Block Crossing North of 16th Avenue
- Attachment C: Jurisdiction Plan – Mid-Block Crossing North of 16th Avenue
- Attachment D: Operation and Maintenance Annual and Life Cycle Costs

Attachment A: Location Plan – Mid-Block Crossing North of 16th Avenue

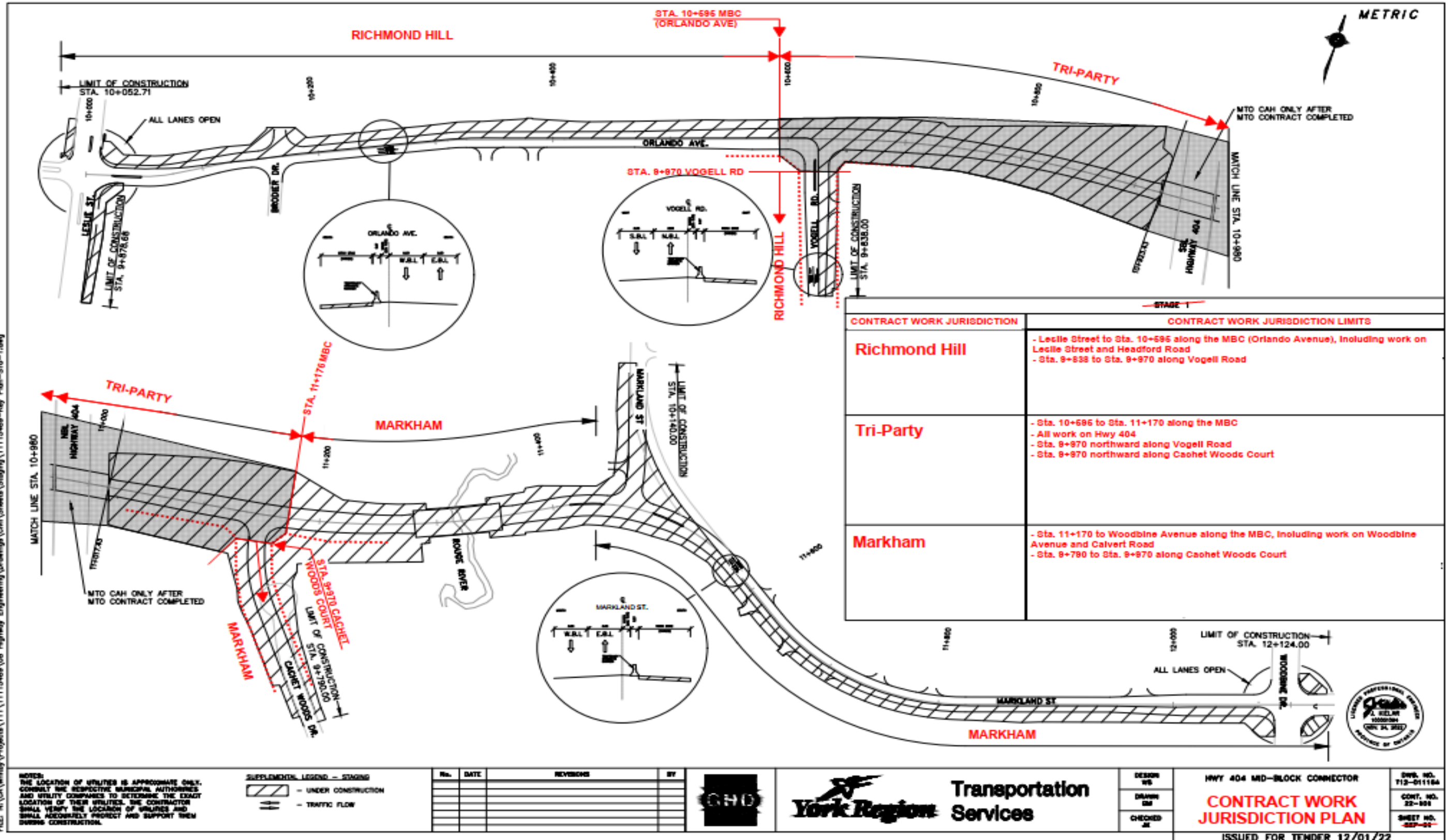


Attachment B: Proposed Schedule of Construction Works – Mid-Block Crossing North of 16th Avenue

Works by Year	Year	
	2023	2024
	<ul style="list-style-type: none"> - Site mob./fence& tree protection/ESC - Clearing and grubbing - Tripping/earth ex/borrow - Curb and s/w removals - Storm sewer works - Fabrication - concrete/steel girders 	<ul style="list-style-type: none"> -Highway 404 & Rouge River Bridge - Orlando/ Markland/ Vogell/Cachet -Temp/perm electrical - Embankment/approach to bridges -Mid-block and LID's -RSS and stone wall -Rouge plantings on OB -Watermain and sanitary -Base asphalt Orlando/ Markland

Works by Year	Year	
	2025	2026
	<ul style="list-style-type: none"> -Highway 404 and Rouge Bridge -Landscaping -Temp/perm electrical -Watermain 	<ul style="list-style-type: none"> -Highway 404 and Rouge Bridge -landscaping -activate perm electrical -fencing -surface course asphalt

Attachment C: Jurisdiction Plan – Mid-Block Crossing North of 16th Avenue



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Attachment D: Operation and Maintenance Annual and Life Cycle Costs

Table A: Annual Operating costs

The breakdown of future Operations and Environmental Services Management costs are as follows:

Department	Item	Mid-Block (\$'s)
Operations	Road Maintenance - Summer	\$18,349.90
	Road Maintenance - Winter	\$22,496.85
	Road Maintenance – Total (A)	\$40,846.75
	Sidewalk Maintenance – Summer	\$3,851.53
	Sidewalk Maintenance - Winter	\$2,698.34
	MUP Maintenance – Summer	\$12,808.58
	MUP Maintenance - Winter	\$8,973.54
	Sidewalk and MUP Maintenance – Total (B)	\$28,331.99
	Traffic Signals Maintenance – Total (C)	\$6,000.00
	Streetlighting (D)	\$4,710.00
	Total Operations Impact (E=A+B+C+D)	\$79,888.74
Environmental Services		
	Low-Impact Development Facilities (F)	\$8,000.00
	Total Operations Impact (G=F)	\$8,000.00
Total Operating and Maintenance Costs (H=D+G)		\$87,888.74

Note: Annual maintenance for the municipal streets (Markland Street and Cachet Woods) to commence in 2025.

The breakdown of future life cycle costs of the underground stormwater facilities costs are as follows:

Table B: Environmental Services - Life Cycle Costs for Underground Stormwater Facility

Program	Frequency (uninflated)	25 Years LC Impact (uninflated)
Condition Inspection	\$2,000/every 2 years	\$25k
Sediment Cleaning	\$6,000/ every 10 years	\$15k
Rehabilitation	At 15 Years: 5% - \$ 44,856.60	Calculate based on construction cost*
(% of	At 30 Years: 15% - \$ 134,569.80	
Replacement	At 50 Years: 30% - \$ 269,139.60	
Cost)	At 75 Years: 100% (Replacement) - \$897,132.00;	

* Construction cost based on tender price of **\$897,132.00**

Table C: Operations - Life Cycle Costs for Roads, Sidewalks and MUP's

ITEM	Frequency	LC Cost
Streetlighting	LED Luminaires (20 yrs), Poles (72 yrs)	*See Note (1) below
Traffic Signalization	(Signal Heads – 25 yrs, Controller – 20 yrs, Poles – 30 yrs, Pedestrian Station & Pre-emption – 10 Yrs, LED Indications – 7 yrs)	\$180,000
Roads	35 yrs	\$202,860
Sidewalk	40 yrs	\$54,750
MUP (3.0m wide)	40 yrs	\$744,600
MUP (2.4m wide)	40 yrs	\$175,000
Total – Roads, Sidewalk, MUP -		\$1,177,410

***Note (1): Future life cycle will be updated on completion of the project to reflect the inventory increase.**