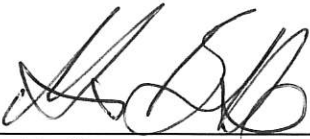


# **TOWN OF RICHMOND HILL**

## **2018 Draft Budget**

### **ENVIRONMENT & INFRASTRUCTURE SERVICES DEPARTMENT**

2018 Draft Budget Submitted and Reviewed by:



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Italo Brutto  
Commissioner of Environment & Infrastructure Services



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David Dexter  
Director, Financial Services & Treasurer



# **TOWN OF RICHMOND HILL**

## **2018 Draft Budget**

### **ENVIRONMENT & INFRASTRUCTURE SERVICES**

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# **TOWN OF RICHMOND HILL**

## **2018 Draft Budget**

### **ENVIRONMENT & INFRASTRUCTURE SERVICES – DEPARTMENTAL SUMMARY**

#### **OVERVIEW**

The Environment & Infrastructure services department is focused on long-term asset management planning, the delivery of major capital projects related to linear assets, parks and facilities, as well as environment services. These functions include long-term strategic planning for the Town's infrastructure and green assets together with delivery of the Town's capital projects and supporting programs.

The delivery of these services is organized into three Divisions:

- Asset Management Planning and Environment Services (long term planning for the sustainable management of the Town's built infrastructure, as well as policies, projects, and programs to protect green assets through the management of energy, waste, water resources and the natural environment)
- Design and Construction (includes road, watermain, sanitary and storm sewer construction, SWM ponds, parks, trails and open space works, capital forecasting and maintaining Engineering records)
- Facility Design, Construction and Maintenance Services (includes new building construction, renovation and maintenance)

The 2018 Operating Budget as compared to the three year operating outlook previously reported includes the following deviations:

- Postponed 'Salt Alternatives Study for Lake Wilcox Watershed' in favour of a grant-funded opportunity to advance 'Climate Change Vulnerability Assessment of Stormwater Infrastructure'
- Postponed the staffing request for a Sustainability Coordinator to assist with the upcoming update to the Environment Strategy in consideration of other budget pressures
- Service enhancement of \$12,300 to support materials and casual wages for delivery of new community gardens consistent with SREIS.17.012

#### **The 2017 ACCOMPLISHMENTS for the Environment Services & Infrastructure Department are as follows:**

##### **Design and Construction**

- Gormley Culvert Replacement
- Hidden Springs Park Revitalization
- Grace Lawrence Park Revitalization
- Castlerock Watermain replacement
- Trench St. Watermain replacement
- Kersey Crescent Watermain replacement
- Laverock Watermain replacement
- Miscellaneous Sidewalk and Street lighting projects
- Trans Richmond Trail

##### **Facility Design, Construction and Maintenance Services**

- Oak Ridges Library construction ongoing
- Awarded Tender and commenced construction of Ed Sackfield Arena Twinning
- Completed Phase II of 225 East Beaver Creek Accommodation Plan construction
- Completed mechanical life cycle equipment replacement for 225 EBC, Richvale Community Centre, Fire Station 82 & 83 and Central Library
- Completed design of Energy Efficient Lighting for Bayview Hill Community Centre, Elgin West Community Centre, Centennial Pool, Richmond Hill Centre for Performing Arts
- Completed the Rouge Woods Community Centre Indoor Bocce Repurposing design
- Completed roofing projects for McConaghy Centre, Fire Stations 82 & 85, Bayview Hill CC, Crosby Tennis Facility

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES – DEPARTMENTAL SUMMARY

#### OVERVIEW - Continued

- Completed DDO Buildings Conditional Assessment
- Complete Design for the Elvis Stojko Arena Board and ice pad replacement
- Completed exterior building envelope lifecycle repairs for Centennial Pool
- Completed Operations Centre design for mechanical / electrical system equipment life cycle replacement
- Launched mobile tablets to facility maintenance supervisors and field staff to assist in the efficient and efficient management of day to day maintenance work orders.

#### Asset Management Planning and Environment Services

##### Asset Management Planning:

- The Asset Management Planning and Environment Services Division was established thereby creating a clear organizational home for the Asset Management (AM) planning function
- Improved existing asset management processes; specifically, amended and better aligned foundational Town asset data to support AM functions
- Improved tools and resources by providing input to development of key IT systems supporting asset management

##### Energy:

- Installation of LED lights and smart control system on street network substantially complete
- Prioritized and recommended energy conservation projects based on Detailed Energy Audits for top 13 energy consuming Town Facilities; developed business cases to design and implement top projects

##### Waste:

- Brought forward new waste collection contract resulting in cost savings of \$572,000/yr. or 10.6% annually
- Planning underway to support new waste collection service levels (e.g., recycling at super mailboxes) targeting 2019 contract start

##### Water Resources:

- Provided water resource support to design of Elgin Mills Greenway project
- Initiated environmental assessment for rehabilitation of Mill Pond Park
- Initiated Lake Wilcox Management Plan project

##### Natural Environment:

- Brought forward Community Garden Policy; discussions with pilot groups underway
- Urban Forest Management Plan Initiated
- Beaver Woodland Restoration Project Initiated
- DDO Phase 1 Restoration Planning and Implementation Initiated

##### Environment Strategy and Sustainability:

- Work ongoing with Clean Air Council of the GTHA and York Region Climate Change Working Group to develop mitigation and adaptation measures; corporate climate change risk scan underway
- Data collection underway for Environmental Scorecard
- Further developed environmental education and outreach programs and tools

# **TOWN OF RICHMOND HILL**

## **2018 Draft Budget**

### **ENVIRONMENT & INFRASTRUCTURE SERVICES – DEPARTMENTAL SUMMARY**

#### **OVERVIEW - Continued**

#### **The 2018 PRIORITIES for the Environment Services & Infrastructure Department are as follows:**

##### **Design and Construction**

- MaCachen St. Road reconstruction
- Ceder Avenue Watermain replacement
- Elmwood Avenue Watermain replacement
- Palmer Avenue Watermain replacement
- Various trails, sidewalks and illumination projects
- Lake Wilcox Boardwalk
- Bradstock Park Revitalization
- Westview Parkette Revitalization

##### **Facility Design, Construction and Maintenance Services**

- Completion of construction of Oak Ridges Library
- Completion of construction of Ed Sackfield Arena Twinning
- Completion design of Operation Centre Phase II Master Plan
- Construction of Operations Centre exterior mechanical/electrical system equipment life cycle replacement
- Complete construction of Rouge Woods Bocce Court repurposing
- Complete construction of Elvis Stojko Arena Board & Ice Slab replacement
- Complete design of Phase 1 Energy Conservation project
- Complete design of Heritage Centre renovation
- Complete design/Engineering and commence construction for DDO building envelope, equipment and systems life cycle replacement
- Complete construction for Tom Graham Arena facility lifecycle equipment replacement
- Complete construction for Elgin Barrow Arena West pad refrigeration header piping replacement
- Complete roofing designs for Operations Centre, Richvale Community Centre, Bond Lake Arena and Lois Hancey Aquatic Centre

##### **Asset Management Planning and Environment Services**

###### **Asset Management Planning:**

- Further develop a governance model for Asset Management Planning function within the Town
- Devise a workplan to comply with the upcoming Provincial regulations including the development of an Asset Management Policy

###### **Energy:**

- Completion of the LED conversion project for arterial roads, parks and parking lots
- Assist Facilities Division to implement top priority energy conservation projects and lead energy pilot projects

###### **Waste:**

- Monitor progress of Waste Free Ontario Act; represent Richmond Hill's interests in the development of supporting plans and regulations
- Continue implementation of new service levels in preparation for new waste collection contract (spring 2019)

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES – DEPARTMENTAL SUMMARY

#### OVERVIEW

Water Resources:

- Provide water resource support to Elgin Mills Greenway project construction
- Continue Environmental assessment for rehabilitation of Mill Pond Park
- Continue Lake Wilcox Management Plan project

Natural Environment:

- Continue Urban Forest Management Plan
- Continue Beaver Woodland Restoration Project
- Continue DDO Phase 1 Restoration Plan Implementation

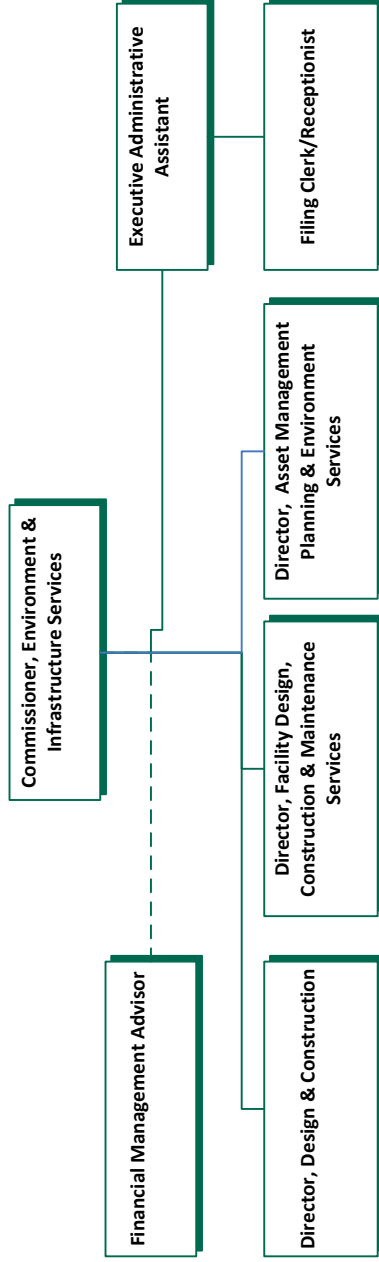
#### Full-Time Complement

	<b>2017 <u>Approved</u></b>	<b>2018 <u>Draft Budget</u></b>
<b>Administration</b>	3	3
<b>Design &amp; Construction</b>		
- Design	16	16
- Construction	12	12
- Parks Design	9	9
<b>Facility Design, Construction and Maintenance Services</b>		
- Administration	5	5
- Facility Operations	9	9
- Facility Systems & Technical Systems	9	9
<b>Asset Management Planning and Environment Services</b>		
- Administration	2	2
- Energy & Waste	4	4
- Water Resources	4	4
- Natural Environment	4	4
- Asset Management Planning	3	3
Sub-total	80	80
 <b>New Full Time Staffing Requests</b>		
<b>Total</b>	<b>80</b>	<b>80</b>





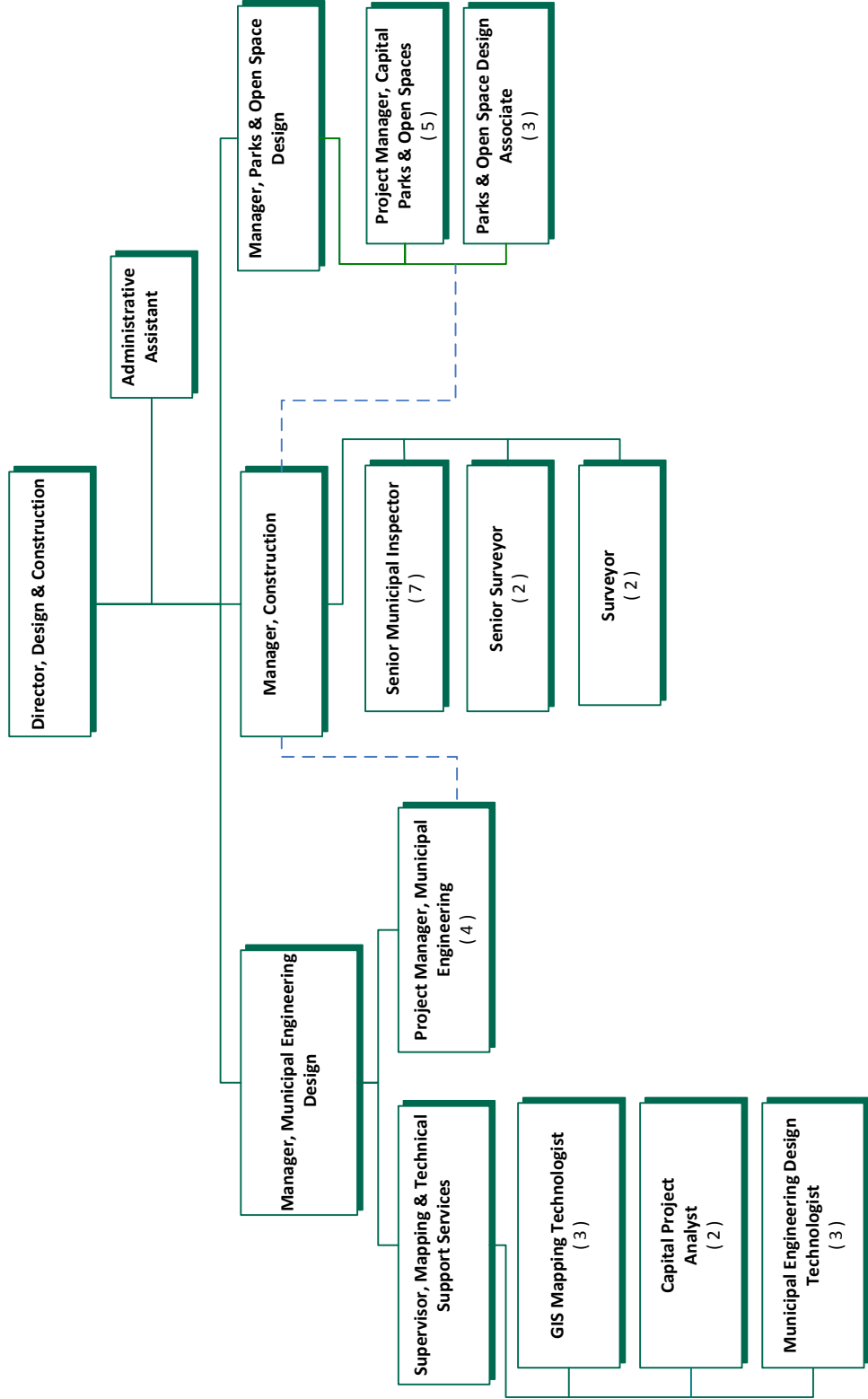
**TOWN OF RICHMOND HILL**  
Environment & Infrastructure Services  
Organizational Chart



Total Approved Staff Complement
80 Full time



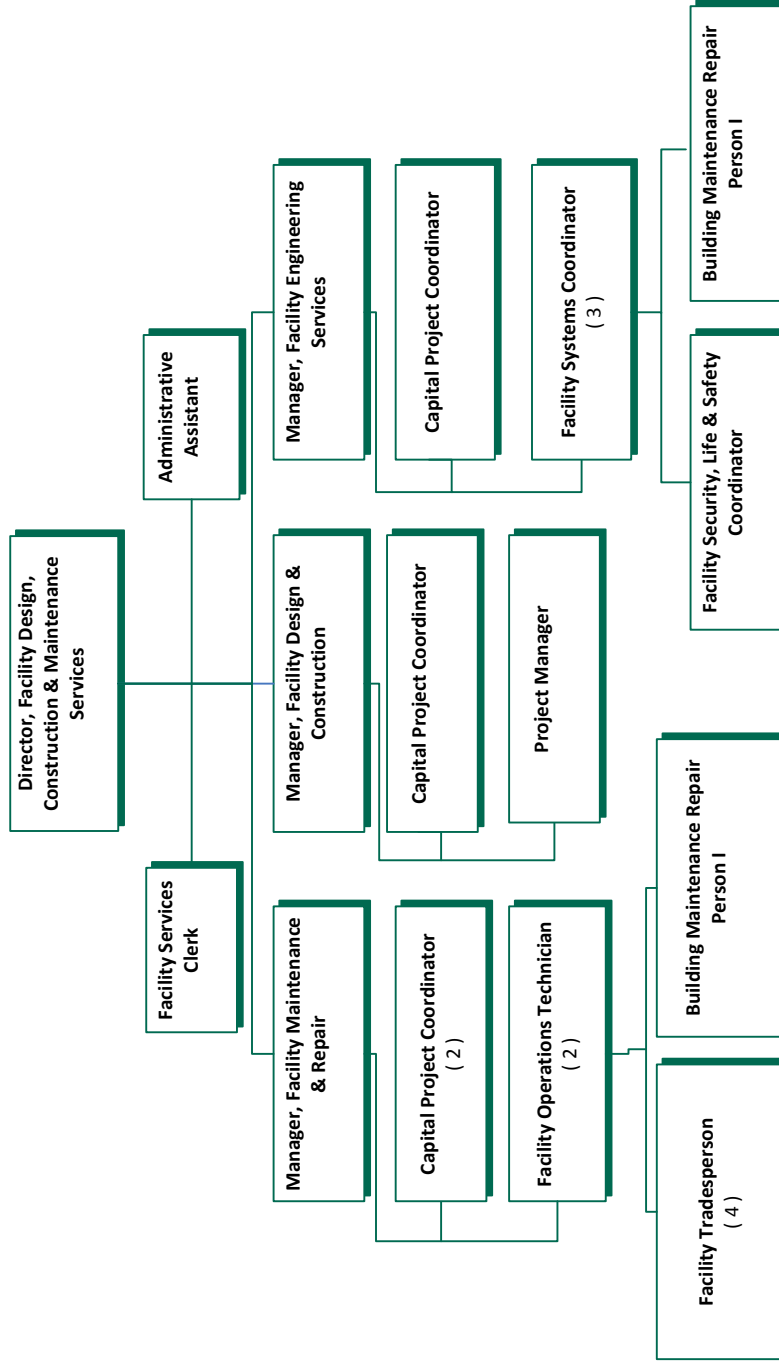
**TOWN OF RICHMOND HILL**  
 Environment & Infrastructure Services – Design & Construction Services  
 Organizational Chart



Total Approved Staff Complement
37 Full time



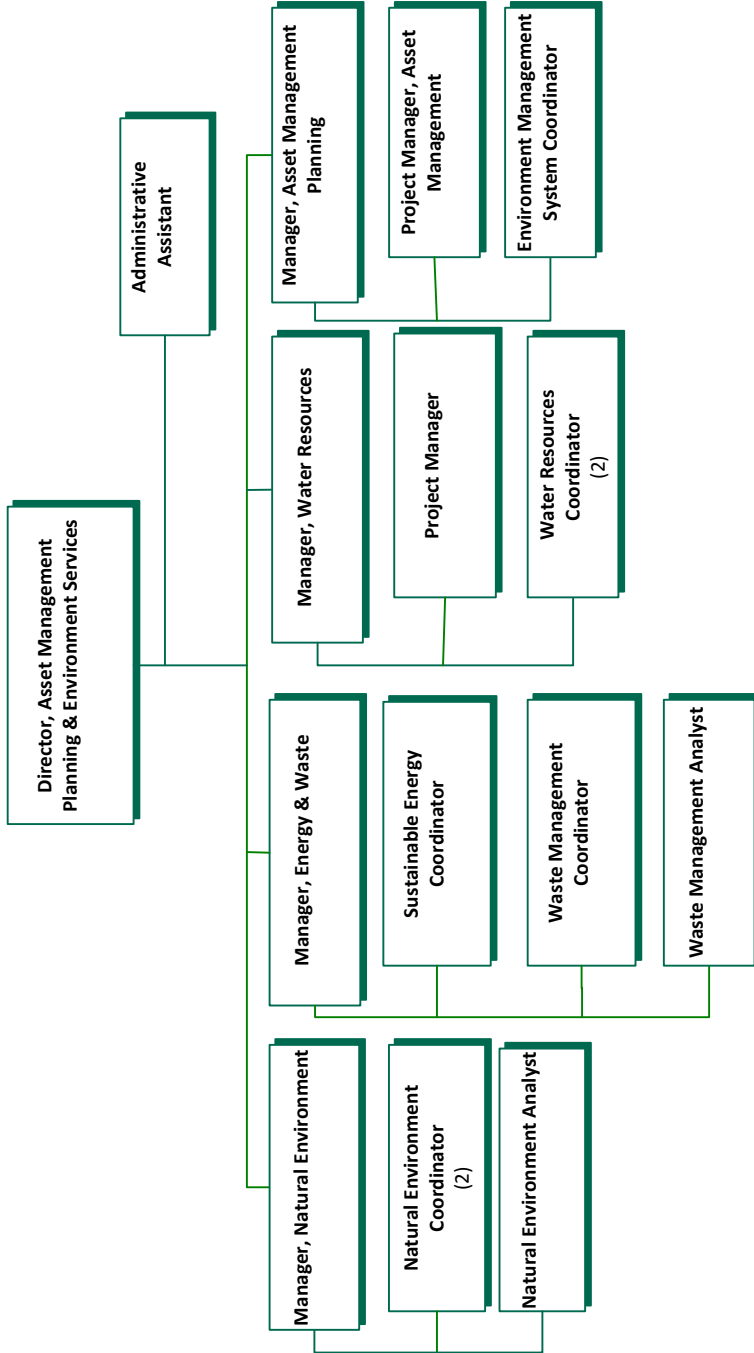
**TOWN OF RICHMOND HILL**  
 Environment & Infrastructure Services – Facility Design, Construction & Maintenance Services  
 Organizational Chart



Total Approved Staff Complement
23 Full time



**TOWN OF RICHMOND HILL**  
Environment & Infrastructure Services – Asset Management Planning &  
Environment Services  
Organizational Chart



Total Approved Staff Complement
17 Full time

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES – DEPARTMENTAL SUMMARY

#### OVERVIEW – Continued

#### 2018 Departmental Budget Highlights

	Actuals as of <u>31-Dec-16</u>	Preliminary 30-Nov-17 <u>Actuals</u>	2017 Approved <u>Budget</u>	2018 Draft <u>Budget</u>	Variance (Favourable) <u>Unfavourable</u>	%
<b>Expenditures</b>						
Personnel - Full-Time	\$8,139,222	\$7,354,379	\$9,048,850	\$9,865,400	\$816,550	
Personnel - Casual	222,757	326,984	384,400	384,300	(100)	
Contract / Services	1,006,751	715,263	1,356,600	1,379,600	23,000	
Materials / Supplies	10,089,609	8,532,275	10,755,750	10,817,200	61,450	
Other Expenditures	167,701	75,332	165,000	316,100	151,100	
Transfers to Other Funds	374,300	345,400	376,800	379,800	3,000	
<b>Total Expenditures</b>	<b>20,000,341</b>	<b>17,349,633</b>	<b>22,087,400</b>	<b>23,142,400</b>	<b>1,055,000</b>	<b>4.8%</b>
<b>Revenues</b>						
User Fees	(7,115)	(6,318)	(3,600)	(3,600)	-	
Grants / Donations	-	(20,000)	(39,000)	(248,500)	(209,500)	
Reserves and Reserve Funds	(1,226,670)	(1,268,234)	(1,560,100)	(1,865,100)	(305,000)	
Other internal Sources	(293,700)	(281,600)	(333,600)	(363,500)	(29,900)	
Other Revenues	(992,099)	(665,338)	(850,600)	(759,200)	91,400	
<b>Total Revenues</b>	<b>(2,519,584)</b>	<b>(2,241,489)</b>	<b>(2,786,900)</b>	<b>(3,239,900)</b>	<b>(453,000)</b>	<b>-16.3%</b>
<b>Net Budget</b>	<b>\$17,480,757</b>	<b>\$15,108,143</b>	<b>\$19,300,500</b>	<b>\$19,902,500</b>	<b>\$602,000</b>	<b>3.1%</b>

#### 2018 Departmental Budget Highlights

	2017 Approved <u>Budget</u>	<u>Base</u>	<u>Legislated</u>	<u>Annualization</u>	<u>New / Growth Staff &amp; Programs</u>	2018 Draft <u>Budget</u>
<b>Expenditures</b>						
Personnel - Full-Time	\$9,048,850	\$114,750	\$ -	\$280,000	\$421,800	\$9,865,400
Personnel - Casual	384,400	(54,100)	-	(9,000)	63,000	384,300
Contract / Services	1,356,600	(1,900)	-	39,000	(14,100)	1,379,600
Materials / Supplies	10,755,750	(93,850)	-	153,800	1,500	10,817,200
Other Expenditures	165,000	6,600	-	(30,500)	175,000	316,100
Transfers to Other Funds	376,800	3,000	-	-	-	379,800
<b>Total Expenditures</b>	<b>22,087,400</b>	<b>(25,500)</b>	<b>-</b>	<b>433,300</b>	<b>647,200</b>	<b>23,142,400</b>
<b>Revenues</b>						
User Fees	(3,600)	-	-	-	-	(3,600)
Grants / Donations	(39,000)	-	-	(39,000)	(170,500)	(248,500)
Reserves and Reserve Funds	(1,560,100)	78,300	-	81,100	(464,400)	(1,865,100)
Other internal Sources	(333,600)	(18,300)	-	(11,600)	-	(363,500)
Other Revenues	(850,600)	91,400	-	-	-	(759,200)
<b>Total Revenues</b>	<b>(2,786,900)</b>	<b>151,400</b>	<b>-</b>	<b>30,500</b>	<b>(634,900)</b>	<b>(3,239,900)</b>
<b>Net Levy Requirements</b>	<b>\$19,300,500</b>	<b>\$125,900</b>	<b>\$ -</b>	<b>\$463,800</b>	<b>\$12,300</b>	<b>\$19,902,500</b>

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES – DEPARTMENTAL SUMMARY

#### OVERVIEW – Continued

#### 2018 Departmental Budget Summary - By Division

	Actuals as of <u>31-Dec-16</u>	Preliminary 30-Nov-17 <u>Actuals</u>	2017 Approved <u>Budget</u>	2018 Draft <u>Budget</u>	Variance (Favourable) <u>Unfavourable</u>	%
<b>Administration</b>	\$328,159	\$440,808	\$521,100	\$531,200	\$10,100	
<b>Design &amp; Construction</b>						
- Design	1,361,082	1,237,149	1,475,600	1,478,800	3,200	
- Construction	734,865	693,074	842,200	846,500	4,300	
- Parks Design	913,988	836,055	999,300	1,026,100	26,800	
	<u>3,009,934</u>	<u>2,766,278</u>	<u>3,317,100</u>	<u>3,351,400</u>	<u>34,300</u>	
<b>Facility Design, Construction and Maintenance Services</b>						
- Administration	2,308,224	1,681,623	2,189,200	2,353,300	164,100	
- Facilities	9,754,402	8,550,608	10,703,100	10,872,700	169,600	
	<u>12,062,626</u>	<u>10,232,231</u>	<u>12,892,300</u>	<u>13,226,000</u>	<u>333,700</u>	
<b>Asset Management Planning and Environment Services</b>						
- Administration	262,824	239,557	300,300	301,300	1,000	
- Energy & Waste	687,112	414,122	579,300	703,000	123,700	
- Water Resources	488,815	428,420	542,800	555,800	13,000	
- Natural Environment	641,287	549,674	811,150	841,900	30,750	
- Asset Mgmt Planning	-	37,053	336,450	391,900	55,450	
	<u>2,080,038</u>	<u>1,668,826</u>	<u>2,570,000</u>	<u>2,793,900</u>	<u>223,900</u>	
<b>Total Budget</b>	<u><u>\$17,480,757</u></u>	<u><u>\$15,108,143</u></u>	<u><u>\$19,300,500</u></u>	<u><u>\$19,902,500</u></u>	<u><u>\$602,000</u></u>	3.1%

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES – DEPARTMENTAL SUMMARY

#### OVERVIEW – Continued

#### 2018 Departmental Budget Highlights

	Actuals as of <u>31-Dec-16</u>	Preliminary 30-Nov-17 <u>Actuals</u>	2017 Approved <u>Budget</u>	2018 Draft <u>Budget</u>	Variance (Favourable) <u>Unfavourable</u>	%
<b><u>Expenditures</u></b>						
<b>Administration</b>	\$328,159	\$440,808	\$521,100	\$531,200	\$10,100	
<b>Design &amp; Construction</b>						
- Design	1,816,260	1,611,272	1,949,100	2,111,200	162,100	
- Construction	1,291,356	1,136,995	1,331,100	1,335,400	4,300	
- Parks Design	1,113,967	1,060,055	1,223,300	1,250,100	26,800	
	<u>4,221,582</u>	<u>3,808,322</u>	<u>4,503,500</u>	<u>4,696,700</u>	<u>193,200</u>	
<b>Facility Design, Construction and Maintenance Services</b>						
- Administration	3,023,374	2,464,741	3,115,400	3,400,100	284,700	
- Facilities	10,281,463	8,765,313	11,016,600	11,096,800	80,200	
	<u>13,304,837</u>	<u>11,230,054</u>	<u>14,132,000</u>	<u>14,496,900</u>	<u>364,900</u>	
<b>Asset Management Planning and Environment Services</b>						
- Administration	262,824	239,557	300,300	301,300	1,000	
- Energy & Waste	689,203	434,122	619,200	781,000	161,800	
- Water Resources	525,115	455,920	572,800	938,500	365,700	
- Natural Environment	668,621	593,268	905,050	920,800	15,750	
- Asset Mgmt. Planning	-	147,581	533,450	476,000	(57,450)	
	<u>2,145,764</u>	<u>1,870,448</u>	<u>2,930,800</u>	<u>3,417,600</u>	<u>486,800</u>	
<b>Total Expenditures</b>	<b><u>20,000,341</u></b>	<b><u>17,349,633</u></b>	<b><u>22,087,400</u></b>	<b><u>23,142,400</u></b>	<b><u>1,055,000</u></b>	<b>4.8%</b>
<b><u>Revenues</u></b>						
<b>Design &amp; Construction</b>						
- Design	(455,178)	(374,123)	(473,500)	(632,400)	(158,900)	
- Construction	(556,491)	(443,921)	(488,900)	(488,900)	-	
- Parks Design	(199,979)	(224,000)	(224,000)	(224,000)	-	
	<u>(1,211,648)</u>	<u>(1,042,044)</u>	<u>(1,186,400)</u>	<u>(1,345,300)</u>	<u>(158,900)</u>	
<b>Facility Design, Construction and Maintenance Services</b>						
- Administration	(715,150)	(783,118)	(926,200)	(1,046,800)	(120,600)	
- Facilities	(527,061)	(214,705)	(313,500)	(224,100)	89,400	
	<u>(1,242,211)</u>	<u>(997,823)</u>	<u>(1,239,700)</u>	<u>(1,270,900)</u>	<u>(31,200)</u>	
<b>Asset Management Planning and Environment Services</b>						
- Energy & Waste	(2,091)	(20,000)	(39,900)	(78,000)	(38,100)	
- Water Resources	(36,300)	(27,500)	(30,000)	(382,700)	(352,700)	
- Natural Environment	(27,334)	(43,594)	(93,900)	(78,900)	15,000	
- Asset Mgmt. Planning	-	(110,528)	(197,000)	(84,100)	112,900	
	<u>(65,725)</u>	<u>(201,622)</u>	<u>(360,800)</u>	<u>(623,700)</u>	<u>(262,900)</u>	
<b>Total Revenues</b>	<b><u>(2,519,584)</u></b>	<b><u>(2,241,489)</u></b>	<b><u>(2,786,900)</u></b>	<b><u>(3,239,900)</u></b>	<b><u>(453,000)</u></b>	<b>-16.3%</b>
<b>Total Budget</b>	<b><u>\$17,480,757</u></b>	<b><u>\$15,108,143</u></b>	<b><u>\$19,300,500</u></b>	<b><u>\$19,902,500</u></b>	<b><u>\$602,000</u></b>	<b>3.1%</b>

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES – DEPARTMENTAL SUMMARY

#### OVERVIEW – Continued

#### Budget Variance Explanation

<b>Department: Environment &amp; Infrastructure Services</b>					
Budget Change Explanations	2017 Budget	2018 Budget	Incremental Change	% Change over Prior Year	Variance Explanation
<b>Prior Year's Net Budget</b>			<b>\$ 19,300,500</b>		
<b>Expenditures</b>					
Personnel - Full time (OT)	8,846,350	8,961,100	114,750		Increase as a result of step level increases coupled with increased personnel benefits
Personnel - Casual	278,000	223,900	(54,100)		Decrease due mainly to the completion of a casual contract
	9,124,350	9,185,000	60,650		
<b><u>Materials / Supplies</u></b>					
<b><u>Administration - General</u></b>	77,100	79,300	2,200		Due to increased conference (\$1,300) coupled with an increase in external training (\$900) for prior year approved positions.
<b><u>Design &amp; Construction</u></b>					
Parks	23,200	31,200	8,000		Customized Civil 3D training for Parks staff.
<b><u>Facility Design, Construction &amp; Maintenance Services</u></b>					
Administration	363,300	372,900	9,600		Increased Regulatory Compliance (\$8,000)
<b><u>Facility Design, Construction &amp; Maintenance Services</u></b>					
Facilities Maintenance - Other	4,378,900	4,287,700	(91,200)		Decrease as a result of realigning the division budget.
Utilities - Hydro, heating & water	5,694,000	5,669,600	(24,400)		Decrease in utilities to reflect actuals'.
<b><u>Asset Management Planning &amp; Environment Services</u></b>	94,750	96,700	1,950		Increase as a result of realigning the division budget
<b><u>Contracts / Services</u></b>					
Design & Construction	50,000	45,000	(5,000)		Decrease as a result of realigning the division budget
<b><u>Facility Design, Construction &amp; Maintenance Services</u></b>					
Security Contracts - Facilities	440,700	435,300	(5,400)		Decrease as a result of realigning the division budget
Insurance Premiums	94,900	97,700	2,800		Corporate increase.
<b><u>Asset Management Planning &amp; Environment Services</u></b>	601,100	606,800	5,700		Increase as a result of realigning the division budget
<b><u>Transfers to Other Funds</u></b>					
<b><u>Facility Design, Construction &amp; Maintenance Services</u></b>					
Wages Shared	76,800	79,800	3,000		Increase as a result of increased personnel costs.
<b><u>Other Expenditures</u></b>					
<b><u>Asset Management Planning &amp; Environment Services</u></b>					
Water Resources - Minor Capital	1,500	4,000	2,500		Increase as a result of realigning the division budget.
Natural Environment - Minor Capital	2,500	2,600	100		Increase as a result of realigning the division budget.
Asset Management Planning - Minor Capital	-	4,000	4,000		Increase as a result of realigning the division budget.
<b>Total Expenditures</b>			<b>(25,500)</b>	<b>(0.1%)</b>	



# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES – DEPARTMENTAL SUMMARY

#### OVERVIEW – Continued

#### Budget Variance Explanation - continued

<b>Revenues</b>				
<b><u>Reserves and Reserve Funds</u></b>				
<b><u>Asset Management Planning &amp; Environment Services</u></b>				
<u>Water Resources</u>				
Transfer from Lake Wilcox Remediation	(5,000)	(4,000)	1,000	The decrease is due to lower draws on the Lake Wilcox Remediation Reserve Fund. This reduces reliance on the reserve to fund operating activities as the balance nears depletion.
<u>Natural Environment</u>				
Transfer from the Ecological Legacy Reserve	(70,000)	(55,000)	15,000	Decrease due to fewer treatment trees in the annual EAB pesticide treatment program.
<u>Asset Management Planning</u>				
Transfer from Federal Gas Tax Reserve Fund	(107,800)	(45,500)	62,300	Funding source for a casual contract position transferred from Strategic Initiatives now completed and as a result is no longer a requirement.
<b><u>Other Internal Sources</u></b>				
<b><u>Design &amp; Construction</u></b>				
Recovery from Water Fund	(306,600)	(324,900)	(18,300)	Increase in revenue as a result of the Water Rate Study.
<b><u>Other Revenues</u></b>				
<b><u>Facility Design, Construction &amp; Maintenance Services - Administration</u></b>				
EBC (21) Management Fee & Recovery	(366,800)	(364,800)	2,000	Minor increase in operating costs chargeable back to the tenants.
<b><u>Facility Design, Construction &amp; Maintenance Services - Facility</u></b>				
EBC (21) CAM Cost; Building Rental Fee (26) & Utility Recovery (37)	(313,500)	(224,100)	89,400	Decrease as a result of tenant vacating the premises, which was taken over by the Town.
<b>Total Revenue</b>			<b>151,400</b>	<b>0.8%</b>
<b>Base Budget</b>			<b>125,900</b>	<b>0.7%</b>

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES – DEPARTMENTAL SUMMARY

#### OVERVIEW – Continued

#### Budget Variance Explanation – continued

<b>Annualization</b>				
<b><u>Facility Design &amp; Maintenance Services - Administration</u></b>				
Facility Systems Coordinator	48,300	103,300	55,000	Annualization costs of the Facility Systems Coordinator approved in the 2017 budget process.
Capital Project Coordinator	52,100	110,600	58,500	Annualization costs of the Capital Project Coordinator approved in the 2017 budget process.
<b><u>Facility Design &amp; Maintenance Services - Facilities</u></b>				
Ed Sackfield Arena & Fitness Centre	-	73,800	73,800	Increase as a result of a new fitness Centre and the addition of an ice pad. The facility will increase from 47,600 sq. ft. to 108,000 sq. ft.
Oak Ridges Moraine Library	-	121,500	121,500	Increase as a result of moving from a 6,300 Sq. ft. rental facility to a 19,000 Sq. ft. facility.
DDO Admin & Observatory Building	25,000	25,100	100	Minor increase in water.
<b><u>Asset Management Planning &amp; Environment Services</u></b>				
<b><u>Energy and Waste</u></b>				
Energy Waste Manager	77,100	164,400	87,300	Annualization of the Energy and Waste Manager approved in the 2017 budget process.
Powerstream Energy Coordinator	48,900	97,400		Annualization of the Powerstream Energy Coordinator approved in the 2017 budget process. The position is funded 80% to a maximum of \$80,000 per year by Powerstream through their SaveOnEnergy incentive program.
Grant Funding @80%	(39,000)	(78,000)		
Tax rate Stabilization Reserve Fund - Fund Minor Capital	(900)	-	10,400	
<b><u>Asset Management Planning</u></b>				
Project Manager	36,200	105,100	68,900	Annualization of the Project Manager approved in the 2017 budget process.
Casual Contract Extension	62,300	-	(62,300)	Decrease in casual salaries resulting from the completion of the contract extension.
Funding Sources	(89,200)	(38,600)	50,600	Decrease in Reserve funding mainly due to the completion on the casual contract extension.
<b>Total Annualization</b>			<b>463,800</b>	<b>2.4%</b>
<b>Growth</b>				
<b><u>Water Resources</u></b>				
Casual Salary for Climate Vulnerability Assessment	-	38,100		Pending approval of Water Analyst contract to support Climate Vulnerability Assessment. The position and project are proposed to be 80% grant funded through FCM, with remainder funded from Water Quality Protection Reserve
Climate Vulnerability Assessment	-	175,000		
Water Quality Protection Reserve Fund @20%	-	(42,600)		
Grant Funding @80%	-	(170,500)	-	
Project Manager (3 FTE's)	-	421,800	421,800	3 Project Managers endorsed by Council SRCFS.17.041 through the Capital Budget process
Trsf to capital	-	(421,800)	(421,800)	3 Project Managers to be fully funded by capital SRCFS.17.041
<b><u>Asset Management Planning &amp; Environment Services</u></b>				
Natural Environment - Casual Staffing	-	12,300	12,300	Increase is to support program delivery related to the new Community Garden Policy, approved by Council 2017 (SREIS.17.012).
<b>Total Growth</b>			<b>12,300</b>	<b>0.0%</b>
<b>Incremental Increase</b>			<b>602,000</b>	<b>3.1%</b>
<b>Net Budget</b>			<b>19,902,500</b>	

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES DEPARTMENT

#### GENERAL ADMINISTRATION

#### Program Description

The general administration of the Department includes the planning and co-ordination of all engineering and infrastructure related activities of the three divisions:

- Design and Construction (Parks Design & Construction inclusive)
- Facility Design, Construction and Maintenance Services
- Asset Management Planning and Environment Services

In addition, day to day office management activities for Environment Infrastructure Services located at 225 East Beaver Creek such as reception, supplies & support staff co-ordination fall within the responsibility of this area.

The scope of the work includes:

- a) Initiating and developing programs to improve services to the public.
- b) Ensure legislated obligations are satisfactorily addressed.
- c) Assess benchmarks and performance standards to encourage a culture of continuous improvement.
- d) Ensuring that adequate funding and resources are available to complete approved programs.
- e) Providing professional advice to the other Departments, Committees and Council.
- f) Co-ordination of timely responses to public enquires.

#### General Administration Divisional Summary

#### 2018 Budget Highlights

	<u>Actuals as of 31-Dec-16</u>	<u>Preliminary 30-Nov-17 Actuals</u>	<u>2017 Approved Budget</u>	<u>2018 Draft Budget</u>	<u>Variance (Favourable) Unfavourable</u>	%
<b>Expenditures</b>						
Personnel - Full-Time	\$281,891	\$395,089	\$442,600	\$450,500	\$7,900	
Contract / Services	-	-	1,400	1,400	-	
Materials / Supplies	46,268	45,719	77,100	79,300	2,200	
<b>Net Budget</b>	<b>\$328,159</b>	<b>\$440,808</b>	<b>\$521,100</b>	<b>\$531,200</b>	<b>\$10,100</b>	1.9%

	<u>2017 Approved Budget</u>	<u>Base</u>	<u>Legislated</u>	<u>Annualization</u>	<u>New / Growth Staff &amp; Programs</u>	<u>2018 Draft Budget</u>
<b>Expenditures</b>						
Personnel - Full-Time	\$442,600	\$7,900	\$ -	\$ -	\$ -	\$450,500
Contract / Services	1,400	-	-	-	-	1,400
Materials / Supplies	77,100	2,200	-	-	-	79,300
<b>Net Budget</b>	<b>\$521,100</b>	<b>\$10,100</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$531,200</b>

#### Base Expenditures

- Base expenditures increased by \$10,100 mainly due to increased COLA and personnel benefits.

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES DEPARTMENT

#### DESIGN AND CONSTRUCTION DIVISION

##### Program Description

This division is composed of a Design, Parks and Construction programs.

The Design program includes the planning, management and provision of services related to the design of capital projects, record keeping of all municipal infrastructure as well as, dispensing of technical advice and the development and maintenance of a data base of infrastructure and property.

The Construction program provides construction management, survey and municipal inspection services for the Town. It also provides construction management of all capital works projects including contracts and tender documents and construction administration.

The Parks program includes planning, management and provision of services related to the design of park and trails capital projects as well as the record keeping of all park related infrastructure. This section also provides advice to the Town with regards to "facility fit" analysis and the development and maintenance of parks design and construction standards.

#### Design and Construction Divisional Summary

##### 2018 Budget Highlights

	<u>Actuals as of 31-Dec-16</u>	<u>Preliminary 30-Nov-17 Actuals</u>	<u>2017 Approved Budget</u>	<u>2018 Draft Budget</u>	<u>Variance (Favourable) Unfavourable</u>	<u>%</u>
<b>Expenditures</b>						
Personnel - Full-Time	\$4,134,377	\$3,756,483	\$4,360,300	\$4,550,500	\$190,200	
Personnel - Casual	15,276	10,681	12,600	12,600	-	
Contract / Services	18,023	5,599	50,000	45,000	(5,000)	
Materials / Supplies	53,906	35,559	80,600	88,600	8,000	
<b>Total Expenditures</b>	<b>4,221,582</b>	<b>3,808,322</b>	<b>4,503,500</b>	<b>4,696,700</b>	<b>193,200</b>	<b>4.3%</b>
<b>Revenues</b>						
User Fees	(7,115)	(6,318)	(3,600)	(3,600)	-	
Reserves and Reserve Funds	(774,770)	(683,321)	(729,800)	(870,400)	(140,600)	
Other internal Sources	(293,700)	(281,600)	(306,600)	(324,900)	(18,300)	
Other Revenues	(136,063)	(70,805)	(146,400)	(146,400)	-	
<b>Total Revenues</b>	<b>(1,211,648)</b>	<b>(1,042,044)</b>	<b>(1,186,400)</b>	<b>(1,345,300)</b>	<b>(158,900)</b>	<b>-13.4%</b>
<b>Net Budget</b>	<b>\$3,009,934</b>	<b>\$2,766,278</b>	<b>\$3,317,100</b>	<b>\$3,351,400</b>	<b>\$34,300</b>	<b>1.0%</b>

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES DEPARTMENT

#### DESIGN AND CONSTRUCTION DIVISION

#### Design and Construction Divisional Summary - Continued

	2017 Approved Budget	Base	Legislated	Annualization	New / Growth Staff & Programs	2018 Draft Budget
<b>Expenditures</b>						
Personnel - Full-Time	\$4,360,300	\$49,600	\$ -	\$ -	\$140,600	\$4,550,500
Personnel - Casual	12,600	-	-	-	-	12,600
Contract / Services	50,000	(5,000)	-	-	-	45,000
Materials / Supplies	80,600	8,000	-	-	-	88,600
<b>Total Expenditures</b>	<b>4,503,500</b>	<b>52,600</b>	<b>-</b>	<b>-</b>	<b>140,600</b>	<b>4,696,700</b>
<b>Revenues</b>						
User Fees	(3,600)	-	-	-	-	(3,600)
Reserves and Reserve Funds	(729,800)	-	-	-	(140,600)	(870,400)
Other internal Sources	(306,600)	(18,300)	-	-	-	(324,900)
Other Revenues	(146,400)	-	-	-	-	(146,400)
<b>Total Revenues</b>	<b>(1,186,400)</b>	<b>(18,300)</b>	<b>-</b>	<b>-</b>	<b>(140,600)</b>	<b>(1,345,300)</b>
<b>Net Budget</b>	<b>\$3,317,100</b>	<b>\$34,300</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$ -</b>	<b>\$3,351,400</b>

#### Design and Construction by Programs

#### 2018 Budget Highlights

#### Design

	Actuals as of 31-Dec-16	Preliminary 30-Nov-17 Actuals	2017 Approved Budget	2018 Draft Budget	Variance (Favourable) Unfavourable	%
<b>Expenditures</b>						
Personnel - Full-Time	\$1,791,424	\$1,584,363	\$1,896,600	\$2,058,700	\$162,100	
Personnel - Casual	15,276	10,681	12,600	12,600	-	
Contract / Services	-	5,599	20,000	20,000	-	
Materials / Supplies	9,560	10,629	19,900	19,900	-	
<b>Total Expenditures</b>	<b>1,816,260</b>	<b>1,611,272</b>	<b>1,949,100</b>	<b>2,111,200</b>	<b>162,100</b>	<b>8.3%</b>
<b>Revenues</b>						
User Fees	(7,115)	(6,318)	(3,600)	(3,600)	-	
Reserves and Reserve Funds	(69,600)	(63,800)	(69,600)	(210,200)	(140,600)	
Other internal Sources	(242,400)	(233,200)	(253,900)	(272,200)	(18,300)	
Other Revenues	(136,063)	(70,805)	(146,400)	(146,400)	-	
<b>Total Revenues</b>	<b>(455,178)</b>	<b>(374,123)</b>	<b>(473,500)</b>	<b>(632,400)</b>	<b>(158,900)</b>	<b>-33.6%</b>
<b>Net Budget</b>	<b>\$1,361,082</b>	<b>\$1,237,149</b>	<b>\$1,475,600</b>	<b>\$1,478,800</b>	<b>\$3,200</b>	<b>0.2%</b>

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES DEPARTMENT

#### Design and Construction by Programs

##### Construction

	Actuals as of 31-Dec-16	Preliminary 30-Nov-17 Actuals	2017 Approved Budget	2018 Draft Budget	Variance (Favourable) Unfavourable	%
<b>Expenditures</b>						
Personnel - Full-Time	\$1,264,994	\$1,118,906	\$1,293,600	\$1,297,900	\$4,300	
Materials / Supplies	26,362	18,089	37,500	37,500	-	
<b>Total Expenditures</b>	<b>1,291,356</b>	<b>1,136,995</b>	<b>1,331,100</b>	<b>1,335,400</b>	<b>4,300</b>	<b>0.3%</b>
<b>Revenues</b>						
Reserves and Reserve Funds	(505,191)	(395,521)	(436,200)	(436,200)	-	
Other internal Sources	(51,300)	(48,400)	(52,700)	(52,700)	-	
<b>Total Revenues</b>	<b>(556,491)</b>	<b>(443,921)</b>	<b>(488,900)</b>	<b>(488,900)</b>	<b>-</b>	<b>0.0%</b>
<b>Net Budget</b>	<b>\$734,865</b>	<b>\$693,074</b>	<b>\$842,200</b>	<b>\$846,500</b>	<b>\$4,300</b>	<b>0.5%</b>

##### Parks Design

	Actuals as of 31-Dec-16	Preliminary 30-Nov-17 Actuals	2017 Approved Budget	2018 Draft Budget	Variance (Favourable) Unfavourable	%
<b>Expenditures</b>						
Personnel - Full-Time	\$1,077,959	\$1,053,214	\$1,170,100	\$1,193,900	\$23,800	
Contract / Services	18,023	-	30,000	25,000	(5,000)	
Materials / Supplies	17,985	6,841	23,200	31,200	8,000	
<b>Total Expenditures</b>	<b>1,113,967</b>	<b>1,060,055</b>	<b>1,223,300</b>	<b>1,250,100</b>	<b>26,800</b>	<b>2.2%</b>
<b>Revenues</b>						
Reserves and Reserve Funds	(199,979)	(224,000)	(224,000)	(224,000)	-	
<b>Total Revenues</b>	<b>(199,979)</b>	<b>(224,000)</b>	<b>(224,000)</b>	<b>(224,000)</b>	<b>-</b>	<b>0.0%</b>
<b>Net Budget</b>	<b>\$913,988</b>	<b>\$836,055</b>	<b>\$999,300</b>	<b>\$1,026,100</b>	<b>\$26,800</b>	<b>2.7%</b>

##### Base Expenditures

- Summary base expenditures increased by \$52,600 mainly due to step level increases, COLA adjustments and increased benefits coupled with required training in customized Civil 3D training requirement for Parks staffing.

##### Base Revenues

- Summary base revenues increased by \$18,300 as a result of the Water Rate Study.

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES DEPARTMENT

#### FACILITY DESIGN, CONSTRUCTION AND MAINTENANCE SERVICES DIVISION

##### Program Description

The Facility Design, Construction and Maintenance Services Division provides the planning and administration of all programs required to maintain and operate 60 Town facilities. This division is responsible for building maintenance, security, utilities and life safety for all Town facilities. This division also develops strategies and establishes programs to ensure Town facilities are maintained to industry standards. This division plays a leadership role in the area of energy conservation and greenhouse gas emissions reduction by implementing recommendations in the Town's Energy Conservation and Demand Management Plan (CDM). This division also provides project management services for design and construction of major renovations and new facilities for all Town departments.

##### 2018 Budget Highlights

#### Facility Design, Construction and Maintenance Services Divisional Summary

	<u>Actuals as of 31-Dec-16</u>	<u>Preliminary 30-Nov-17 Actuals</u>	<u>2017 Approved Budget</u>	<u>2018 Draft Budget</u>	<u>Variance (Favourable) Unfavourable</u>	%
<b>Expenditures</b>						
Personnel - Full-Time	\$2,228,288	\$1,989,743	\$2,406,700	\$2,700,400	\$293,700	
Personnel - Casual	931	8,679	-	-	-	
Contract / Services	638,190	433,909	704,100	740,500	36,400	
Materials / Supplies	9,908,508	8,385,828	10,500,400	10,550,200	49,800	
Other Expenditures	154,619	66,495	144,000	126,000	(18,000)	
Transfers to Other Funds	374,300	345,400	376,800	379,800	3,000	
<b>Total Expenditures</b>	<b>13,304,837</b>	<b>11,230,054</b>	<b>14,132,000</b>	<b>14,496,900</b>	<b>364,900</b>	<b>2.6%</b>
<b>Revenues</b>						
Reserves and Reserve Funds	(415,600)	(446,885)	(559,400)	(682,000)	(122,600)	
Other Revenues	(826,611)	(550,938)	(680,300)	(588,900)	91,400	
<b>Total Revenues</b>	<b>(1,242,211)</b>	<b>(997,823)</b>	<b>(1,239,700)</b>	<b>(1,270,900)</b>	<b>(31,200)</b>	<b>-2.5%</b>
<b>Net Budget</b>	<b>\$12,062,626</b>	<b>\$10,232,231</b>	<b>\$12,892,300</b>	<b>\$13,226,000</b>	<b>\$333,700</b>	<b>2.6%</b>

	<u>2017 Approved Budget</u>	<u>Base</u>	<u>Legislated</u>	<u>Annualization</u>	<u>New / Growth Staff &amp; Programs</u>	<u>2018 Draft Budget</u>
<b>Expenditures</b>						
Personnel - Full-Time	\$2,406,700	\$39,000	\$ -	\$114,100	\$140,600	\$2,700,400
Contract / Services	704,100	(2,600)	-	39,000	-	740,500
Materials / Supplies	10,500,400	(106,000)	-	155,800	-	10,550,200
Other Expenditures	144,000	-	-	(18,000)	-	126,000
Transfers to Other Funds	376,800	3,000	-	-	-	379,800
<b>Total Expenditures</b>	<b>14,132,000</b>	<b>(66,600)</b>	<b>-</b>	<b>290,900</b>	<b>140,600</b>	<b>14,496,900</b>
<b>Revenues</b>						
Reserves and Reserve Funds	(559,400)	-	-	18,000	(140,600)	(682,000)
Other Revenues	(680,300)	91,400	-	-	-	(588,900)
<b>Total Revenues</b>	<b>(1,239,700)</b>	<b>91,400</b>	<b>-</b>	<b>18,000</b>	<b>(140,600)</b>	<b>(1,270,900)</b>
<b>Net Budget</b>	<b>\$12,892,300</b>	<b>\$24,800</b>	<b>\$ -</b>	<b>\$308,900</b>	<b>\$ -</b>	<b>\$13,226,000</b>

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES DEPARTMENT

#### FACILITY DESIGN, CONSTRUCTION AND MAINTENANCE SERVICES DIVISION

#### Facility Design, Construction and Maintenance Services by Programs

#### 2018 Budget Highlights

#### Administration

	Actuals as of 31-Dec-16	Preliminary 30-Nov-17 Actuals	2017 Approved Budget	2018 Draft Budget	Variance (Favourable) Unfavourable	%
<b>Expenditures</b>						
Personnel - Full-Time	\$2,228,288	\$1,989,743	\$2,406,700	\$2,700,400	\$293,700	
Personnel - Casual	931	8,679	-	-	-	
Contract / Services	143,292	89,459	160,200	160,200	-	
Materials / Supplies	496,243	310,365	404,500	413,500	9,000	
Other Expenditures	154,619	66,495	144,000	126,000	(18,000)	
<b>Total Expenditures</b>	<b>3,023,374</b>	<b>2,464,741</b>	<b>3,115,400</b>	<b>3,400,100</b>	<b>284,700</b>	<b>9.1%</b>
<b>Revenues</b>						
Reserves and Reserve Funds	(415,600)	(446,885)	(559,400)	(682,000)	(122,600)	
Other Revenues	(299,550)	(336,233)	(366,800)	(364,800)	2,000	
<b>Total Revenues</b>	<b>(715,150)</b>	<b>(783,118)</b>	<b>(926,200)</b>	<b>(1,046,800)</b>	<b>(120,600)</b>	<b>-13.0%</b>
<b>Net Budget</b>	<b>\$2,308,224</b>	<b>\$1,681,623</b>	<b>\$2,189,200</b>	<b>\$2,353,300</b>	<b>\$164,100</b>	<b>7.5%</b>

#### Facility Design, Construction and Maintenance Services - Facilities

	Actuals as of 31-Dec-16	Preliminary 30-Nov-17 Actuals	2017 Approved Budget	2018 Draft Budget	Variance (Favourable) Unfavourable	%
<b>Facility by Type</b>						
Town Administration	\$2,464,814	\$2,321,097	\$2,868,600	\$2,910,500	\$41,900	
Recreation	3,618,165	3,134,679	3,729,400	3,794,700	65,300	
Arenas	1,615,640	1,418,801	1,807,600	1,837,000	29,400	
Fire Stations	315,876	281,844	385,400	369,100	(16,300)	
Libraries	1,083,647	853,112	1,188,500	1,247,000	58,500	
Heritage	640,326	526,974	706,100	699,500	(6,600)	
Other	15,933	14,101	17,500	14,900	(2,600)	
<b>Net Expenditures</b>	<b>\$9,754,402</b>	<b>\$8,550,608</b>	<b>\$10,703,100</b>	<b>\$10,872,700</b>	<b>\$169,600</b>	<b>1.6%</b>
<b>Expenditure by Category</b>						
Contract / Services	\$494,898	\$344,450	\$543,900	\$580,300	\$36,400	
Materials /Supplies						
- Utilities	5,443,883	4,496,011	5,707,000	5,779,700	72,700	
- Other	3,968,382	3,579,452	4,388,900	4,357,000	(31,900)	
Transfers to Other Funds	374,300	345,400	376,800	379,800	3,000	
<b>Total Expenditure</b>	<b>10,281,463</b>	<b>8,765,313</b>	<b>11,016,600</b>	<b>11,096,800</b>	<b>80,200</b>	<b>0.7%</b>
<b>Revenues</b>						
Other Revenues	(527,061)	(214,705)	(313,500)	(224,100)	89,400	
<b>Net Budget</b>	<b>\$9,754,402</b>	<b>\$8,550,608</b>	<b>\$10,703,100</b>	<b>\$10,872,700</b>	<b>\$169,600</b>	<b>1.6%</b>



# **TOWN OF RICHMOND HILL**

## **2018 Draft Budget**

### **ENVIRONMENT & INFRASTRUCTURE SERVICES DEPARTMENT**

#### **FACILITY DESIGN, CONSTRUCTION AND MAINTENANCE SERVICES DIVISION - Continued**

##### **Base Expenditures**

Summary base expenditures decreased by \$66,600 mainly due to:

- increased personnel costs (\$39,000) as a result of COLA and increased benefits
- decrease in hydro (\$86,600) as a result of realigning the divisional budget
- decrease in heating fuel (\$16,700) due to the realignment of the divisional budget
- increase in janitorial costs (\$93,400) as a result of a new contract
- decrease in HVAC costs (\$41,900) due to the realignment of the divisional budget
- decrease in building rent (\$75,500) as a result of moving from the Oak Ridges Moraine Library, a 6,300 sq. ft. rental facility to a 19,000 sq. ft. facility
- increase in water (\$78,900) as a result of a 9% push down from the Region of York couple with minor adjustments to reflect actual's
- decrease in electrical costs (\$21,700) due to the realignment of the divisional budget
- decrease in property taxes (\$25,200) as a result of a tenant vacating the premises of 225 EBC.

##### **Base Revenues**

Summary base revenues decreased by \$91,400 mainly due to:

- Decrease in Common Area Maintenance (CAM) costs recoverable (\$89,400) as a result of a tenant vacating 225 EBC premises which was taken over by the Town

##### **Annualization**

Annualization increased by \$308,900 mainly due to:

- The annualization of the Facility Systems Coordinator (\$55,000) and the Capital Project Coordinator (\$58,500) approved in the 2017 budget process.
- For the partial year operating costs of the Ed Sackfield Arena Twinning Project (\$73,800).
- For the partial year of the Oak Ridges Library Project (\$121,500).

##### **New / Growth Staff & Programs**

New / Growth Staff & Programs reflects a net zero balance due to:

- The approval of a Project Manager through the 2018 Capital Budget Process. The position will be fully funded by capital (i.e. Staff Report SRCFS.17.041)

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES DEPARTMENT

#### ASSET MANAGEMENT PLANNING AND ENVIRONMENT SERVICES DIVISION

##### Program Description

The Asset Management and Environment Services Division carries out long term planning for the sustainable management of the Town's built infrastructure as well as delivering policies, projects and programs to protect Richmond Hill's green assets. The Energy/Waste section delivers capital projects and programs to reduce energy use and greenhouse gas emissions, as well as guiding the Town's waste management policy and collection programs. The Water Resources section monitors our stormwater network and addresses flood control and water quality through capital projects to rehabilitate stormwater management facilities and valleylands. The Natural Environment section oversees management of the Town's urban forest, community gardens and the Community Stewardship Program. Finally, the new Asset Management Planning section is responsible for the long-term management and replacement of the Town's infrastructure assets, as well as leading the Town's ISO14001 Environmental Management System.

##### Asset Management Planning and Environment Services Summary

##### 2018 Budget Highlights

	Actuals as of <u>31-Dec-16</u>	Preliminary 30-Nov-17 <u>Actuals</u>	2017 Approved <u>Budget</u>	2018 Draft <u>Budget</u>	Variance (Favourable) <u>Unfavourable</u>	%
<b>Expenditures</b>						
Personnel - Full-Time	\$1,494,667	\$1,213,064	\$1,839,250	\$2,164,000	\$324,750	
Personnel - Casual	206,550	307,624	371,800	371,700	(100)	
Contract / Services	350,538	275,755	601,100	592,700	(8,400)	
Materials / Supplies	80,927	65,168	97,650	99,100	1,450	
Other Expenditures	13,082	8,837	21,000	190,100	169,100	
<b>Total Expenditures</b>	<b>2,145,764</b>	<b>1,870,448</b>	<b>2,930,800</b>	<b>3,417,600</b>	<b>486,800</b>	<b>16.6%</b>
<b>Revenues</b>						
Grants / Donations	-	(20,000)	(39,000)	(248,500)	(209,500)	
Reserves and Reserve Funds	(36,300)	(138,028)	(270,900)	(312,700)	(41,800)	
Other internal Sources	-	-	(27,000)	(38,600)	(11,600)	
Other Revenues	(29,425)	(43,594)	(23,900)	(23,900)	-	
<b>Total Revenues</b>	<b>(65,725)</b>	<b>(201,622)</b>	<b>(360,800)</b>	<b>(623,700)</b>	<b>(262,900)</b>	<b>-72.9%</b>
<b>Net Budget</b>	<b>\$2,080,038</b>	<b>\$1,668,826</b>	<b>\$2,570,000</b>	<b>\$2,793,900</b>	<b>\$223,900</b>	<b>8.7%</b>

	2017 Approved <u>Budget</u>	<u>Base</u>	<u>Legislated</u>	<u>Annualization</u>	<u>New / Growth Staff &amp; Programs</u>	2018 Draft <u>Budget</u>
<b>Expenditures</b>						
Personnel - Full-Time	\$1,839,250	\$18,250	\$ -	\$165,900	\$140,600	\$2,164,000
Personnel - Casual	371,800	(54,100)	-	(9,000)	63,000	371,700
Contract / Services	601,100	5,700	-	-	(14,100)	592,700
Materials / Supplies	97,650	1,950	-	(2,000)	1,500	99,100
Other Expenditures	21,000	6,600	-	(12,500)	175,000	190,100
<b>Total Expenditures</b>	<b>2,930,800</b>	<b>(21,600)</b>	<b>-</b>	<b>142,400</b>	<b>366,000</b>	<b>3,417,600</b>
<b>Revenues</b>						
Grants / Donations	(39,000)	-	-	(39,000)	(170,500)	(248,500)
Reserves and Reserve Funds	(270,900)	78,300	-	63,100	(183,200)	(312,700)
Other internal Sources	(27,000)	-	-	(11,600)	-	(38,600)
Other Revenues	(23,900)	-	-	-	-	(23,900)
<b>Total Revenues</b>	<b>(360,800)</b>	<b>78,300</b>	<b>-</b>	<b>12,500</b>	<b>(353,700)</b>	<b>(623,700)</b>
<b>Net Budget</b>	<b>\$2,570,000</b>	<b>\$56,700</b>	<b>\$ -</b>	<b>\$154,900</b>	<b>\$12,300</b>	<b>\$2,793,900</b>

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES DEPARTMENT

#### ASSET MANAGEMENT PLANNING AND ENVIRONMENT SERVICES DIVISION - Continued

#### Asset Management Planning and Environment Services by Programs

#### 2018 Budget Highlights

#### Administration

	Actuals as of <u>31-Dec-16</u>	Preliminary 30-Nov-17 <u>Actuals</u>	2017 Approved <u>Budget</u>	2018 Draft <u>Budget</u>	Variance (Favourable) <u>Unfavourable</u>	%
<b>Expenditures</b>						
Personnel - Full-Time	\$259,641	\$237,640	\$294,700	\$295,700	\$1,000	
Contract / Services	142	-	500	500	-	
Materials / Supplies	3,042	1,917	5,100	5,100	-	
<b>Net Budget</b>	<b><u>\$262,824</u></b>	<b><u>\$239,557</u></b>	<b><u>\$300,300</u></b>	<b><u>\$301,300</u></b>	<b><u>\$1,000</u></b>	<b>0.3%</b>

#### Energy and Waste

	Actuals as of <u>31-Dec-16</u>	Preliminary 30-Nov-17 <u>Actuals</u>	2017 Approved <u>Budget</u>	2018 Draft <u>Budget</u>	Variance (Favourable) <u>Unfavourable</u>	%
<b>Expenditures</b>						
Personnel - Full-Time	\$488,766	\$337,626	\$384,950	\$477,900	\$92,950	
Personnel - Casual	95,992	79,039	135,400	194,400	59,000	
Contract / Services	71,212	10,283	73,700	89,400	15,700	
Materials / Supplies	25,964	3,301	16,150	14,800	(1,350)	
Other Expenditures	7,270	3,873	9,000	4,500	(4,500)	
<b>Total Expenditures</b>	<b><u>689,203</u></b>	<b><u>434,122</u></b>	<b><u>619,200</u></b>	<b><u>781,000</u></b>	<b><u>161,800</u></b>	<b>26.1%</b>
<b>Revenues</b>						
Grants / Donations	-	(20,000)	(39,000)	(78,000)	(39,000)	
Reserves and Reserve Funds	-	-	(900)	-	900	
Other Revenues	(2,091)	-	-	-	-	
<b>Total Revenues</b>	<b><u>(2,091)</u></b>	<b><u>(20,000)</u></b>	<b><u>(39,900)</u></b>	<b><u>(78,000)</u></b>	<b><u>(38,100)</u></b>	<b>-95.5%</b>
<b>Net Budget</b>	<b><u>\$687,112</u></b>	<b><u>\$414,122</u></b>	<b><u>\$579,300</u></b>	<b><u>\$703,000</u></b>	<b><u>\$123,700</u></b>	<b>21.4%</b>

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES DEPARTMENT

#### ASSET MANAGEMENT PLANNING AND ENVIRONMENT SERVICES DIVISION - Continued

#### Asset Management Planning and Environment Services by Programs

##### Water Resources

	Actuals as of <u>31-Dec-16</u>	Preliminary 30-Nov-17 <u>Actuals</u>	2017 Approved <u>Budget</u>	2018 Draft <u>Budget</u>	Variance (Favourable) <u>Unfavourable</u>	%
<b>Expenditures</b>						
Personnel - Full-Time	\$317,719	\$293,143	\$366,200	\$512,000	\$145,800	
Personnel - Casual	51,121	47,533	43,100	83,700	40,600	
Contract / Services	134,106	105,045	138,100	139,600	1,500	
Materials / Supplies	20,044	10,163	23,900	24,200	300	
Other Expenditures	2,125	36	1,500	179,000	177,500	
<b>Total Expenditures</b>	<b>525,115</b>	<b>455,920</b>	<b>572,800</b>	<b>938,500</b>	<b>365,700</b>	<b>63.8%</b>
<b>Revenues</b>						
Grants / Donations	-	-	-	(170,500)	(170,500)	
Reserves and Reserve Funds	(36,300)	(27,500)	(30,000)	(212,200)	(182,200)	
<b>Total Revenues</b>	<b>(36,300)</b>	<b>(27,500)</b>	<b>(30,000)</b>	<b>(382,700)</b>	<b>(352,700)</b>	
<b>Net Budget</b>	<b>\$488,815</b>	<b>\$428,420</b>	<b>\$542,800</b>	<b>\$555,800</b>	<b>\$13,000</b>	<b>2.4%</b>

##### Natural Environment

	Actuals as of <u>31-Dec-16</u>	Preliminary 30-Nov-17 <u>Actuals</u>	2017 Approved <u>Budget</u>	2018 Draft <u>Budget</u>	Variance (Favourable) <u>Unfavourable</u>	%
<b>Expenditures</b>						
Personnel - Full-Time	\$428,541	\$323,797	\$463,300	\$477,800	\$14,500	
Personnel - Casual	59,437	67,319	45,900	70,800	24,900	
Contract / Services	145,078	152,199	343,300	317,700	(25,600)	
Materials / Supplies	31,878	49,730	50,050	51,900	1,850	
Other Expenditures	3,687	223	2,500	2,600	100	
<b>Total Expenditures</b>	<b>668,621</b>	<b>593,268</b>	<b>905,050</b>	<b>920,800</b>	<b>15,750</b>	<b>1.7%</b>
<b>Revenues</b>						
Reserves and Reserve Funds	-	-	(70,000)	(55,000)	15,000	
Other Revenues	(27,334)	(43,594)	(23,900)	(23,900)	-	
<b>Total Revenues</b>	<b>(27,334)</b>	<b>(43,594)</b>	<b>(93,900)</b>	<b>(78,900)</b>	<b>15,000</b>	<b>16.0%</b>
<b>Net Budget</b>	<b>\$641,287</b>	<b>\$549,674</b>	<b>\$811,150</b>	<b>\$841,900</b>	<b>\$30,750</b>	<b>3.8%</b>

# TOWN OF RICHMOND HILL

## 2018 Draft Budget

### ENVIRONMENT & INFRASTRUCTURE SERVICES DEPARTMENT

#### ASSET MANAGEMENT PLANNING AND ENVIRONMENT SERVICES DIVISION – Continued

#### Asset Management Planning and Environment Services by Programs

##### Asset Management Planning

	Actuals as of <u>31-Dec-16</u>	Preliminary 30-Nov-17 <u>Actuals</u>	2017 Approved <u>Budget</u>	2018 Draft <u>Budget</u>	Variance (Favourable) <u>Unfavourable</u>	%
<b>Expenditures</b>						
Personnel - Full-Time	\$ -	\$20,858	\$330,100	\$400,600	\$70,500	
Personnel - Casual	-	113,733	147,400	22,800	(124,600)	
Contract / Services	-	8,228	45,500	45,500	-	
Materials / Supplies	-	57	2,450	3,100	650	
Other Expenditures	-	4,705	8,000	4,000	(4,000)	
<b>Total Expenditures</b>	<b>-</b>	<b>147,581</b>	<b>533,450</b>	<b>476,000</b>	<b>(57,450)</b>	<b>-10.8%</b>
<b>Revenues</b>						
Reserves and Reserve Funds	-	(110,528)	(170,000)	(45,500)	124,500	
Other internal Sources	-	-	(27,000)	(38,600)	(11,600)	
<b>Total Revenues</b>	<b>-</b>	<b>(110,528)</b>	<b>(197,000)</b>	<b>(84,100)</b>	<b>112,900</b>	<b>57.3%</b>
<b>Net Budget</b>	<b>\$ -</b>	<b>\$37,053</b>	<b>\$336,450</b>	<b>\$391,900</b>	<b>\$55,450</b>	<b>16.5%</b>

# **TOWN OF RICHMOND HILL**

## **2018 Draft Budget**

### **ENVIRONMENT & INFRASTRUCTURE SERVICES DEPARTMENT**

#### **ASSET MANAGEMENT PLANNING AND ENVIRONMENT SERVICES DIVISION – Continued**

##### **Base Expenditures**

- Summary base expenditures decreased by \$21,600 mainly due to the completion of a casual contract.

##### **Base Revenues**

- Summary base revenues decreased by \$78,300 mainly due the completion of a casual contract previously funded by the Federal Gas Tax Reserve Fund.

##### **Annualization**

Annualization increased by \$154,900 mainly due to:

##### **Energy and Waste**

- The annualization of the Energy and Waste Manager (\$87,300) approved in the 2017 budget process.

##### **Asset Management Planning**

- The annualization of the Project Manager (\$68,900) approved in the 2017 budget process.

##### **New / Growth Staff & Programs**

New / Growth Staff & Programs increased by \$12,300 mainly due to:

##### **Water Resources**

- Summary growth expenditures increased by \$366,000 mainly due to the Project Manager (\$140,600) approved through the 2018 Capital Budget Process coupled with the Climate Vulnerability Assessment (\$175,000).
- Summary growth revenues increased by \$353,700 as a result of the Project Manager being funded by capital coupled with the Climate Vulnerability Assessment being funded 80% by grant funding, with the balance being funded from the Water Quality Protection Reserve Fund.

##### **Natural Environment**

- Increase in casual wages (\$12,300) to support program delivery related to the new Community Garden Policy, approved by Council 2017 (SREIS.17.012).

# Business Case – New Staff Request

## Water Resources Analyst

### Overview

Richmond Hill owns and operates an extensive stormwater management infrastructure system. As evidenced in the recent past, it is expected that the weather will shift to more frequent and intense storms, both in summer and winter, which will put the Town's infrastructure under additional stress. It is important for the Town to understand our stormwater system vulnerabilities as we plan for future capital works. The Climate Change Vulnerability Assessment of Stormwater Infrastructure project (related business case), which is proposed by staff in this year's operating budget, will provide information that enables staff to adapt our stormwater system to the impacts of climate change at the right time and in the right way.

This business case provides rationale for the creation of a temporary (2-year) Water Resources Analyst position funded largely through a Federal grant program offered by the Federation of Canadian Municipalities (FCM). The position will report to the Manager of Water Resources in Asset Management Planning and Environment Services Division, and will carry out the proposed Climate Change Vulnerability Assessment of Stormwater Infrastructure project.

### Program Description

This business case is connected to the operating budget business case for the new initiative of Climate Change Vulnerability Assessment of Stormwater Infrastructure project. The project is proposed to begin in 2018 and will take two years to complete. To facilitate the project's progress, a Water Resources Analyst position is required on a two-year contract to carry out the project and oversee the coordination of other technical experts during the course of the work. This new position's primary responsibilities will be to:

1. Carry out the Climate Change Vulnerability Assessment of Stormwater Infrastructure project and ensure it progresses along the correct path, on time and within budget.
2. Coordinate and assist external consultants, agencies and technical experts (such as the Ontario Climate Consortium) used to complete the technical components of the project
3. Conduct research, gather data and conduct analysis required for the project as well as for the external consultants, agencies and technical experts
4. Assist with and ensure integration of other Town projects and programs having elements that will contribute to or take information from the Climate Change Vulnerability Assessment of Stormwater Infrastructure project
5. Provide support to the Water Resources Section, as well as to the Asset Management Planning & Environment Services Division, with other programs, projects and initiatives (value added).

### Strategic Alignment

This staff resource supports the Town's Strategic Plan goal of '*Wise Management of Resources*'. By gaining a better understanding of our stormwater system vulnerabilities, the Town can minimize costs by planning adaptation measures into future projects. This approach will prevent disruptions in service delivery and minimize costly emergency situations.

## Comparative Analysis

System-wide vulnerability assessment of stormwater management infrastructure is a growing area of interest for municipalities, as outlined below. In all cases, internal resources were used to coordinate various technical experts and complete the assessment owing to the complexity of the project and a need for continuity throughout.

Toronto - In 2010, the City of Toronto responded to increasing risks related to their infrastructure due to climate change by developing a climate change risk assessment tool. The main purpose of the tool was to identify vulnerabilities and avoid service disruptions and risk/cost. Two City divisions completed more detailed assessments of their operations and infrastructure using the risk assessment tool, and all other Toronto divisions are in the process of completing the same assessment.

Burlington - Due to the significant flood that occurred in the City of Burlington in 2014, a city-study was conducted to assess vulnerabilities in the stormwater management system and identify areas of high risk. The City is also conducting a 'mobility hub' study in areas where increased intensification is planned. The study is assessing the stormwater infrastructure within these areas to detect future risks to the City, with climate change impacts taken into account.

Markham – City of Markham has a long-term program that includes vulnerability assessment of stormwater management infrastructure as a primary component. Their flood control program has divided the city into areas which are studied individually to determine the flood control problems and possible solutions. The study of each area includes considering stormwater system vulnerability to determine where the highest risks are located and what can be done to lower those risks.

Vaughan - The City of Vaughan recently performed a vulnerability and risk assessment of their stormwater management system and the impacts of climate change. This generated useful data about possible risks and threats that can be used to guide infrastructure capital works. Lessons learned from this Vaughan project were used as the basis for **Richmond Hill's proposed project**.

## Analysis of Alternative Approaches

The alternative to hiring the new position is the “do nothing alternative”, which would postpone the Climate Change Vulnerability Assessment of Stormwater Infrastructure project indefinitely. This alternative represents a near-term cost savings (the Town-funded portion of the project and salary not covered by external grants). The disadvantage is growing exposure to infrastructure risks as a result of more frequent and intense storms. An understanding of the Town's infrastructure vulnerabilities is necessary to plan for proactive stormwater approaches and reduce the risk of unanticipated damage, cost and service interruptions. Advance planning will allow staff to address vulnerability recommendations through upcoming capital projects.

## Cost and Benefit Analysis

An additional staff resource is required to advance the Climate Change Vulnerability Assessment of Stormwater Infrastructure project. This staff member will carry out the project by completing portions of the work and coordinating with external technical experts. This two-year contract position, a Water Resources Analyst, is proposed to be substantially funded through the FCM's Municipalities for Climate Innovation Program fund (details below). The full year budget impact of this position is \$74,100 including benefits. Staff anticipate that the position will be 80% funded (\$59,280) by FCM's MCIP grant, with the balance funded from other sources. The cost to the Town in 2018 for this position is estimated at \$7,620 based on an expected start date of July 01, 2018; in 2019 the cost to the Town is estimated at \$14,820 for the entire year, and \$7,620 in 2020 based on a contract end date of July 01, 2020. **The hiring of this staff resource is contingent on the Town's success in receiving the FCM funding for the project (see connected business case) and the staff resource, and will only proceed if the grant application is approved.**



Funding for the staff resource will come from a combination of grants and reserve funds. The FCM's 'Municipalities for Climate Innovation Program' (MCIP) is designed to help municipalities prepare for and adapt to climate change. Grants are available through this program to supplement salaries for municipal staff to implement climate change programs and projects, such as infrastructure vulnerability assessments that this staff resource will carry out.

	<b>Current Year (2018) Impact</b>	<b>Full Year (2019) Impact</b>
Start Date	01-Jul-18	
End Date or Contract Terms	31-Dec-18	
Full Time or Contract	Contract	Contract
CUPE/Admin/SEA/FIRE	SEA - 35 hr	SEA - 35 hr
Grade	6	6
Step	1	1
Annual Salary	\$66,800	\$66,800
Annual Benefit	7,300	7,300
<b>Operating Costs</b>		
Salaries ( <b>Prorated Salary Based on Start Month</b> )	34,300	66,800
Benefits	3,800	7,300
<b>Total Operating Costs</b>	<b>\$38,100</b>	<b>\$74,100</b>
<b>Funding Source</b>		
Reserve Fund - Water Quality Protection	7,620	14,820
Grants	30,480	59,280
<b>Total Funding Sources</b>	<b>\$38,100</b>	<b>\$74,100</b>

Remaining project costs (ie, any gaps that exist between the salary costs and the outside funding received) would be funded from the Water Quality Protection Reserve, which was established to fund rehabilitation of stormwater management infrastructure and to ensure continued flood protection and erosion control within the Town.

## Conclusions and Recommendations

The Climate Change Vulnerability and Risk Assessment of Stormwater Infrastructure project will provide Town staff the information needed to adapt our stormwater system to the impacts of climate change. This will assist staff in addressing infrastructure vulnerabilities and risks proactively, minimizing unanticipated stormwater damage. Advance planning will allow staff to address high risk areas through future capital projects before events affecting our infrastructure or services occur, resulting in lower costs overall. For the study to proceed, an additional staff resource will be required to complete portions of the work and coordinate with an external consultant as well as other technical experts. The costs for this position would be largely funded with the outside grant programs offered by the Federation of Canadian Municipalities (FCM), along with supplementary funding from the Water Quality Protection Reserve. This position is contingent on receiving the FCM funding for the project, and will only proceed if the grant application is approved.

# **Business Case - New Initiative**

## **Climate Change Vulnerability Assessment of Stormwater Infrastructure**

### **Overview/Background**

Richmond Hill owns and operates an extensive stormwater management infrastructure system, including 525 km of storm sewers, 70+ stormwater management facilities, 90+ oil-grit separator units, 150 culverts, and 17,000 catchbasins.

Changing weather patterns due to climate change will have an impact on the Town's infrastructure, especially to the stormwater management assets. In general, it is expected that the weather will shift to more frequent and intense storms, both in summer and winter. It is important for the Town to understand our stormwater system vulnerabilities as we plan for future capital works.

### **Project Description**

This business case provides rationale for the Climate Change Vulnerability Assessment of Stormwater Infrastructure project, which will provide information necessary to manage the stormwater system and adapt to the impacts of climate change at the right time and in the right way. The study will focus on Town stormwater infrastructure such as stormwater management facilities, storm sewers, ditches, inlets and outlets, culverts and catchbasins (ie, both the grey and green system).

The City of Toronto has developed an assessment tool being used by several municipalities to complete climate change vulnerability and risk assessments of municipal stormwater infrastructure. Staff propose to follow a similar methodology for Richmond Hill's assessment. In general, the goal of the work is to identify vulnerable areas in the stormwater network and associated risks as storms become more frequent or severe, and provide recommendations to reduce these risks. The scope of work is as follows:

- Establish risk assessment criteria
- Identify sources, factors and causes of increased vulnerabilities and risk
- Evaluate the existing stormwater management systems and identify current vulnerabilities
- Identify a range of likely climate scenarios and apply them to the infrastructure system
- Establish the severity and likelihood of existing and future stormwater consequences (ie. determine risk)
- Identify vulnerable stormwater assets and locations in the Town
- Provide recommendations for next steps to reduce the risks identified

The study will provide information about stormwater management assets and areas of the Town that have higher vulnerabilities and risks, which will be used to plan and direct future capital works. The deliverables for this project will include a report outlining the areas and assets with higher vulnerabilities and risks, and a GIS-based database ready for use by Town staff to appropriately manage and improve the identified vulnerable areas.

## Stakeholders & Impacts

The results of this project will be beneficial to a number of Town divisions/departments, including Asset Management Planning & Environment Services, Development Engineering, Policy Planning, Design & Construction and Public Works/Operations. Staff from each of these divisions will be invited to form part of the internal working group that will review and guide the project to its conclusion.

## Staffing Requirements/Project Costs

This business case is connected to a second business case for the new hire of a Water Resources Analyst. This position will report to the Manager of Water Resources in Asset Management Planning and Environment Services Division, and will carry out the project. This temporary position will be largely grant-funded. Details regarding the new position are outlined in the business case for the Water Resources Analyst.

## Strategic Alignment

This project supports the Town's Strategic Plan goal of '*Wise Management of Resources*'. By gaining a better understanding of our stormwater system vulnerabilities, the Town can minimize costs by planning adaptation measures into future projects. This approach will prevent disruptions in service delivery and minimize costly emergency situations.

## Comparative Analysis

System-wide vulnerability assessment of stormwater management infrastructure is a growing area of interest for municipalities.

Toronto - In 2010, the City of Toronto responded to increasing risks related to their infrastructure due to climate change by developing a climate change risk assessment tool. The main purpose of the tool was to identify vulnerabilities and avoid service disruptions and risk/cost. Two City divisions completed more detailed assessments of their operations and infrastructure using the risk assessment tool, and all other Toronto divisions are in the process of completing the same assessment.

Burlington - Due to the significant flood that occurred in the City of Burlington in 2014, a city-study was conducted to assess vulnerabilities in the stormwater management system and identify areas of high risk. The City is also conducting a 'mobility hub' study in areas where increased intensification is planned. The study is assessing the stormwater infrastructure within these areas to detect future risks to the City, with climate change impacts taken into account.

Markham – City of Markham has a long-term program that includes vulnerability assessment of stormwater management infrastructure as a primary component. Their flood control program has divided the city into areas which are studied individually to determine the flood control problems and possible solutions. The study of each area includes considering stormwater system vulnerability to determine where the highest risks are located and what can be done to lower those risks.

Vaughan - The City of Vaughan recently performed a vulnerability and risk assessment of their stormwater management system and the impacts of climate change. This generated useful data about possible risks and threats that can be used to guide infrastructure capital works. Lessons learned from this Vaughan project were used as the basis for Richmond Hill's proposed project.

## Analysis of Alternative Approaches

The alternative to this project is the “do nothing alternative”, which would represent a near-term cost savings (the cost of the project). The disadvantage is growing exposure to greater risks as weather patterns shift to more frequent and intense storms. Without an understanding of infrastructure vulnerabilities and risks, the Town would need to respond to stormwater damage in a reactive way and continue to construct missed opportunity infrastructure projects using existing standards as opposed to mitigating risks and vulnerable areas. This approach typically results in higher costs and service interruptions. Advance planning will allow staff to address vulnerability recommendations through upcoming capital projects before events affecting our infrastructure or services occur.

## Cost and Benefit Analysis

The estimated cost for the Climate Change Vulnerability Assessment of Stormwater Infrastructure project is \$175,000, which is in keeping with the recent Vaughan study. The funding will be used to secure an external consultant to perform the stormwater system technical analysis and GIS mapping. Funding will also be used to engage Ontario Climate Consortium<sup>1</sup> (OCC) to support specialized analysis of climate change model scenarios for the project. Although there is a cost for the OCC services, these services will be provided at a far lower cost than would be provided by an external consultant for this component of the project.

Staff anticipate that this study will be substantially funded using a grant from FCM’s Climate Change Adaption Plans fund. The grant is designed to help municipalities prepare for and adapt to climate change. Projects such as this are specifically mentioned as candidates for funding. Once approved, the Town will have two years to complete the project. If successful, this grant will fund 80% of the project cost (\$140,000). **This project is contingent on the Town’s success in receiving the FCM funding for the project, and will only proceed if the grant application is approved.**

The remaining project cost of \$35,000 would be funded from reserve funds. It has been confirmed by the Manager of Grants and Strategic Initiatives that this project is 100% eligible for Gas Tax funding. An alternative approach is to draw funding from the Water Quality Protection Reserve, which was established to fund rehabilitation of stormwater management infrastructure and to ensure continued flood protection and erosion control within the Town.

## Conclusions and Recommendations

The Climate Change Vulnerability and Risk Assessment of Stormwater Infrastructure project will provide Town staff the information needed to adapt our stormwater system to the impacts of climate change. This will assist staff in addressing infrastructure vulnerabilities and risks proactively, minimizing unanticipated stormwater damage. Advance planning will allow staff to address high risk areas through future capital projects before events affecting our infrastructure or services occur, resulting in lower costs overall. The costs for this project would be largely funded with the outside grant programs offered by the Federation of Canadian Municipalities (FCM), along with supplementary funding from either the Federal Gas Tax or Water Quality Protection Reserve. This project is contingent on receiving the FCM funding for the project, and will only proceed if the grant application is approved.

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<sup>1</sup> The Ontario Climate Consortium (OCC) is a body of scientists, researchers and practitioners from across Ontario with a focus on addressing climate change issues. Toronto and Region Conservation Authority (TRCA) provides secretarial services and coordination for the Consortium in partnership with York University, McMaster University and Western University. The OCC will provide climate modeling to assist with projects such as this.