

Service Business Plan



Service Name	Surface Water Drainage	Service Type	Public
Service Owner Name	Cary Clark	Budget Year	2017
Service Owner Title	Manager of Development and Stormwater Engineering		

Service Description

A public service to manage surface water drainage.

Current State

Customers & Their Expectations

This service is delivered to:

Residents, property owners, businesses, developers, builders/constructors, Planning & Building, Roads & Parks Maintenance and Council.

Expectations include:

- Flood and erosion protection for properties and structures
- Clean and safe creeks
- Protection of natural habitat, including trees
- Accessibility to trail systems along creeks, with well-maintained and attractive amenities
- Safety and risk avoidance related to flooding
- Delivery of approvals and permits in a timely and cost-effective manner
- Well-maintained storm water management ponds
- Well-maintained surface water drainage systems, including culverts and storm inlet grates
- Help addressing storm drainage concerns and complaints
- Inventory information and assessment of infrastructure condition
- Replacement of damaged infrastructure
- Good storm water quality
- Professionalism, expertise, innovation and education.

Existing Service Delivery	<p>The existing surface water drainage systems include:</p> <ul style="list-style-type: none"> • 11 main creeks within the urban boundary, totalling 83 kms • 1350 rural area culverts (16,000 m) • 900 urban area culverts (13,000 m) • 15,600 catchbasins • 21 storm water management ponds owned by the City • 12 City-owned oil and grit separator manholes. <p>This service is delivered in coordination with the Design & Construction and Asset Management sections of the Capital Works Department, Roads & Parks Maintenance (RPM), Halton Region, Conservation Halton, Niagara Escarpment Commission, Ministry of Environment & Climate Change, Ministry of Natural Resources and Department of Fisheries & Oceans.</p> <p>The service provides:</p> <ul style="list-style-type: none"> • Planning, design, construction, permits and inspection of surface water drainage systems • Assistance to residents and property owners in addressing concerns/complaints regarding drainage issues • Maintenance of creeks, road allowance drainage, catchbasins, storm inlet structures and oil and grit separator manholes • Site alteration review, permits, inspection and enforcement • In partnership with the Asset Management Service, collecting inventory information and assessing infrastructure condition for data management • Infrastructure renewal of storm sewers through road reconstruction projects, accomplished as a customer of Roads and Structures – Design and Construction for design of roads and storm sewers.
Existing Customer Engagement Tools / Methods	In person, telephone, 311, email, mail, City website, social media, newspapers, radio, television, media releases, public open houses, committee and Council reports.
Is this Service Provincially Legislated?	No N/A
For this Service are there Approved Service Standards?	Yes Conservation Authorities Act, Ontario Regulation 162/06, Department of Fisheries and Oceans Act, Canadian Environmental Protection Act Drainage By-law 56 2007, Site Alteration By-law 64-2014
Sub-Services	
Surface Water Drainage Project Management – creeks, ditches, storm water management ponds, culverts	Oversee design, tendering, project management, contract administration and construction inspection of creek erosion rehabilitation projects, storm water management pond cleanouts, minor drainage improvements and culvert replacements.

Maintenance of Surface Water Drainage Systems	Inspect and maintain creeks clear of debris and blockages. Addressing drainage issues on City-owned road allowances and open spaces. Repairs are undertaken by RPM crews or where necessary by outside contractors.
Resident Drainage Customer Service	According to By-law 56-2007, address concerns/complaints from residents regarding storm water drainage. Inspect and assess issues. Make recommendations for actions where the City has responsibility.
Storm Water Management Design Review (for new development applications)	Provide storm water management design review services for new development applications. This is done in coordination with the Community Design and Development Review service.
Site Alteration Permitting and Administration	According to By-law 64-2014, provide site assessments, review of applications, issuance of permits, inspections and enforcement.

Recent Continuous Improvement Initiatives

On August 4, 2014 the City of Burlington experienced a major rain storm that caused extensive flooding. Council approved the addition of \$20M to the Storm Water Capital Budget over the next 10 years for infrastructure upgrades to mitigate flood risks. The design and construction of flood mitigation projects to reduce the risk of flooding in various neighbourhoods across the city has proceeded in 2016.

The service level of the "Maintenance of Surface Water Drainage Systems" has been enhanced. Additional funding was used to purchase new equipment and increase creek maintenance operations.

The Creek Condition and Assessment Survey report of urban creeks was completed in early 2016. This provided updated creek erosion, infrastructure and debris details. This data is being used to prioritize future creek improvement projects.

Creek improvements were completed on Rambo Creek at Cavendish Drive. These works included channel improvements and the replacement of the Cavendish Drive culvert.

Emerging Opportunities and Anticipated Risks

Emerging Opportunities	<ul style="list-style-type: none"> - We have the ability to address additional storm water infrastructure needs. - New approaches to climate change modelling. - Storm water user fee approach to capital funding is being examined. - Improved communication with residents through public engagement, updates on City website and social media. <p>The "Rural Culvert Condition Rating" performance measure has been deleted from the 2017 Business Plan. The updating of performance measure metrics required the need for a survey of all 1357 culverts on an annual basis in order to revise the overall condition rating each year. This would require a significant level of staff resources, which was deemed impractical. Although this performance measure has been removed from the Business Plan, the Capital Budget "Rural Area Culvert Replacement" program and RPM's rural culvert replacement program remains in place with an average of 21 culverts being replaced on an annual basis.</p>
Anticipated Risks	<ul style="list-style-type: none"> • Increasing flood risks to the City and private property owners due to climate change. • Recently modified approval process for creek rehabilitation projects, could result in longer approval times for these projects. • Aging storm water infrastructure increases the need for funding of repairs and replacements. <p>Further consideration of a feasibility review related to a potential Storm Water User Fee has been deferred until the next term of Council.</p>

Service Objectives

Target Completion

Assess the potential effects of climate change on surface water drainage systems and update the stormwater drainage design criteria to reflect changing weather patterns.	Dec 2017
Undertake a stormwater quality study of for the downtown area for storm sewers discharging into Lake Ontario. Recommendations will include suggested locations for the installation of stormwater quality devices.	Dec 2017
Initiate construction of Phase 1 of the Tuck Creek Culvert Upgrade and Channelization project in 2017. This is the first of the major stormwater enhancement projects recommended in the Aug 4, 2014 Flood Study.	Jun 2018
Initiate construction of Phase 1 of the Roseland Creek Erosion Control project (Guelph Line to Upper Middle Rd) in 2017.	Jun 2018
Complete design and construction of East Rambo Creek flood mitigation project.	Jun 2018

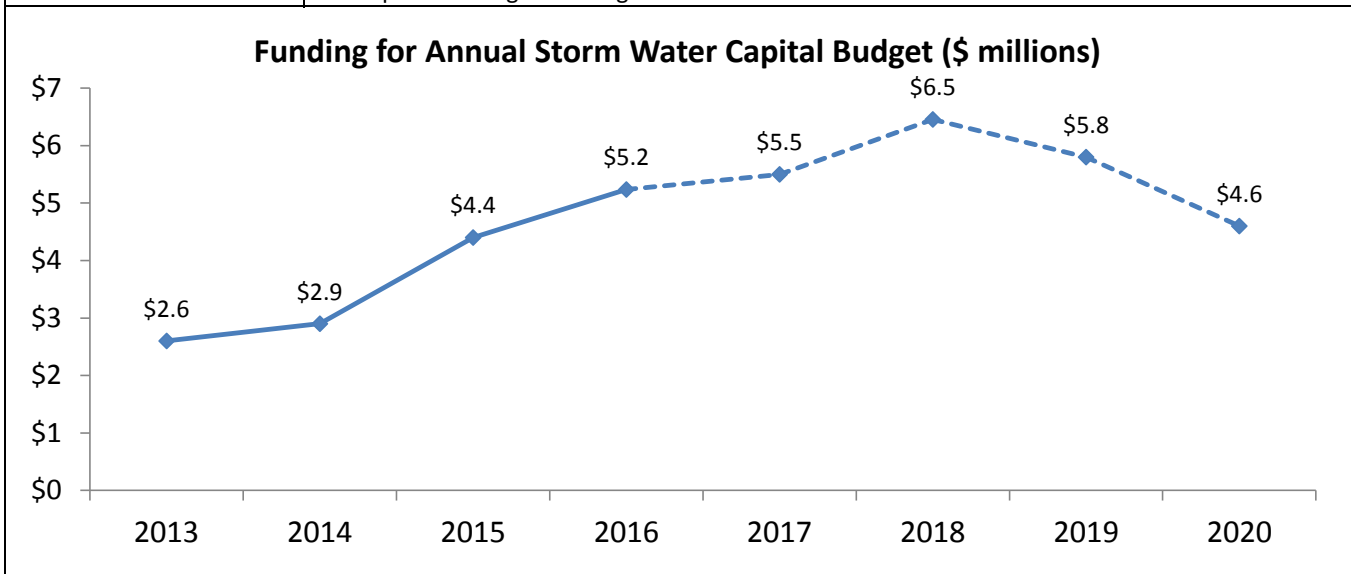
MEASURING SUCCESS

How much did we do?

Performance Measurement	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Projection	2017 Forecast	2018 Forecast	2019 Forecast
Length of creek erosion control repairs completed (km) (existing 83km of urban creek)	0.64	1.10	0.62	0.39	0.07	3.30	0.82	0.89
Number of storm water management ponds cleaned out (existing 21 ponds)	2	1	-	1	1	3	2	2
Number of rural culverts replaced by Roads and Parks Maintenance and Development & Environmental Engineering (1350 rural culverts = 16,000m)	21	21	21	18	21	21	21	21

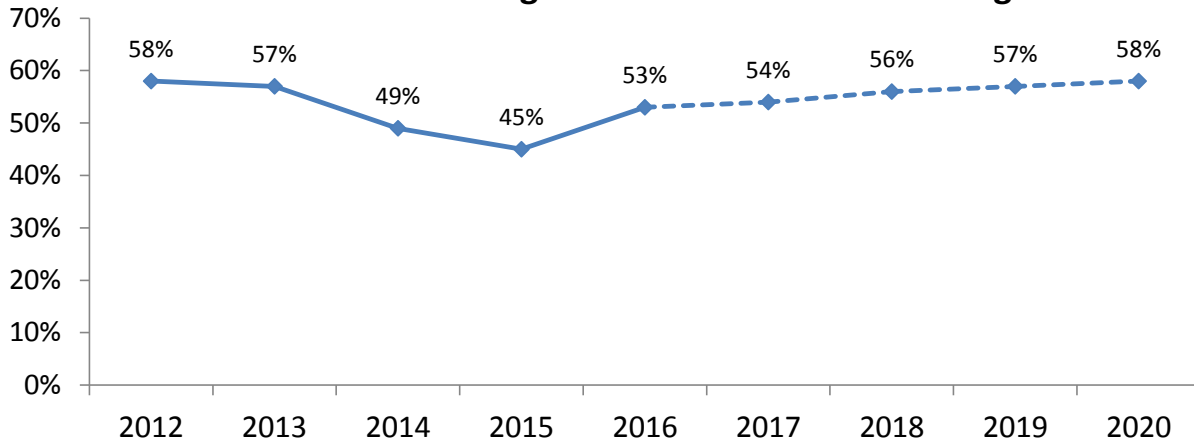
How well did we do it?

Performance Measurement	Funding for Annual Storm Water Capital Budget (\$ millions)
Story behind the data	The dollar values indicate actual and forecasted values, which include tax-supported funding and Development Charges funding.



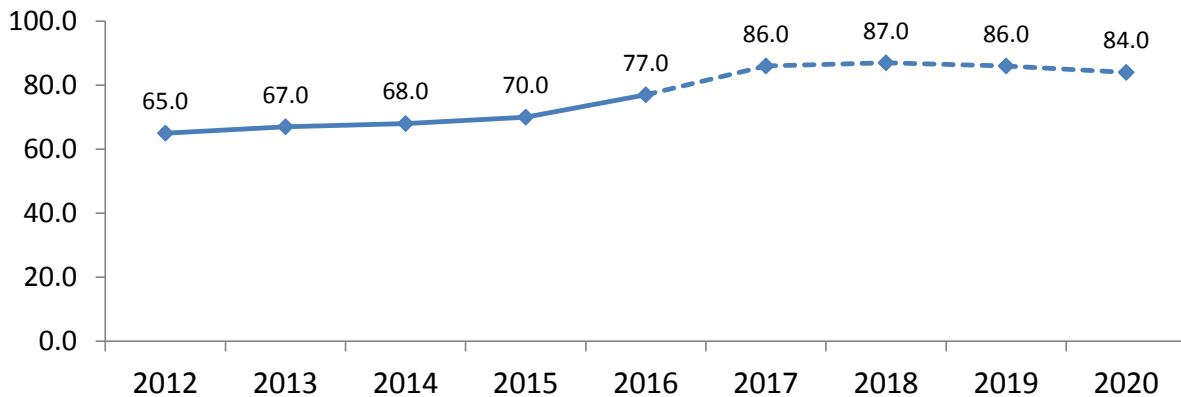
Performance Measurement	Storm Water Management Pond Condition Rating
Story behind the data	Storm Water Management Ponds owned by the City are dredged out as part of an existing maintenance program. This involves removing accumulated mud at the bottom of the ponds. The purpose of this program is to maintain a good level of service that allows the ponds to operate as designed to control storm water quantity and quality. On average, one SWM pond per year has been dredged out. In future years, the target will be 2 SWM ponds per year. With recent development in north Burlington, the City has assumed ownership of several new SWM ponds. This has added to the inventory of ponds and increases the funding requirements for future SWM pond dredging. Funding will need to increase to meet future needs.

Storm Water Management Pond Condition Rating



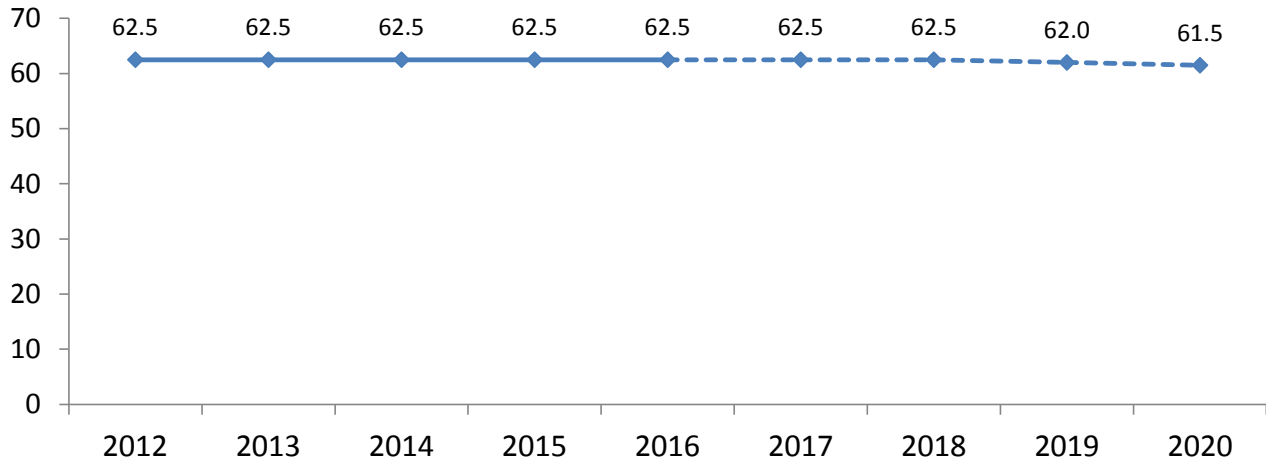
Performance Measurement	Oil and Grit Separator Manhole Condition Rating
Story behind the data	Burlington has 12 oil and grit separator manholes located throughout the City. Roads & Parks Maintenance (RPM) provides maintenance services for these units through an outside contractor. The accumulated sediments in these units must be removed to provide the designed level of oil and grit removal from storm water. RPM's current level of service includes cleaning two to three manholes per year. This frequency allows the condition rating to increase marginally over time, however when additional Oil and Grit Separator Manholes are added there will need to be additional funding to maintain or increase the current level of service. 4 Oil and Grit Separators were cleaned in 2016. This is consistent with the 4 year cycle.

Oil and Grit Separator Manhole Condition Rating



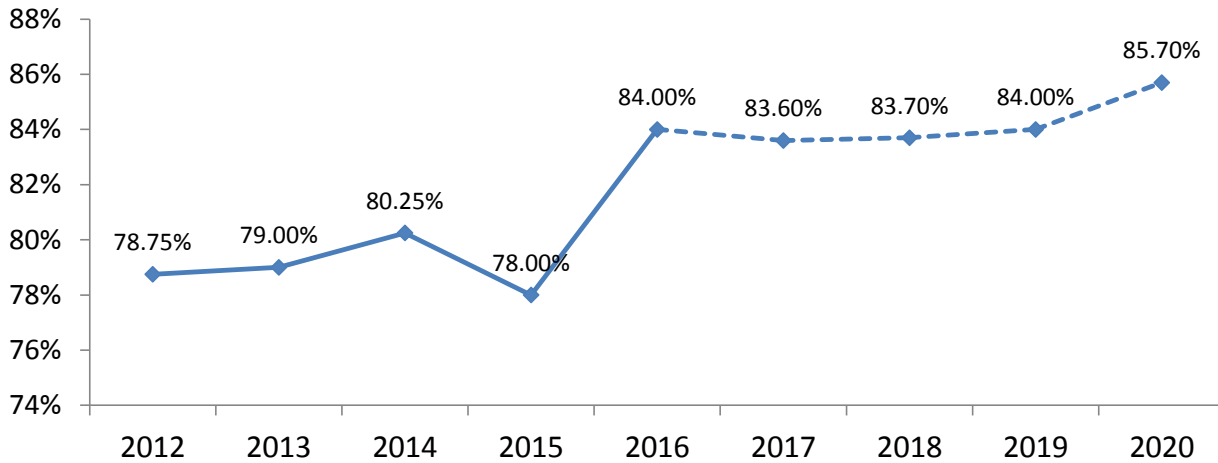
Performance Measurement	Catchbasin operational condition rating (average capacity of catchbasin to capture sediment)
Story behind the data	<p>There are currently 15,613 City-owned catchbasins and 649 owned by Halton region in our database.</p> <p>The current maintenance plan is a four-year cycle, which includes clearing out about 4000 catchbasins each year. This provides an effective level of service and an important component of the City's storm water quality program. A total of 3,849 COB catchbasins and 266 Region catchbasins were cleaned in 2016. This is consistent with the 25% target for the 4 year cycle.</p>
Where do we want to go?	As new development proceeds the number of catchbasins will increase. This will require an increase in funding to maintain the level of service.

Catchbasin Operational Condition Rating



Performance Measurement	Annual creek condition index (weighted average of % of kms of creeks in good condition)
Story behind the data	<p>The "Annual Creek Condition Index" provides an overall indicator that reflects the conditions of our creeks.</p> <p>The original creek condition inventory and erosion assessment was undertaken 2009. It covered 83 km of urban area creeks on City-owned property or within easements. This study resulted in prioritizing the creek locations to be rehabilitated as part of our storm water capital works program. In Q4-2015, the second comprehensive Creek Condition Survey was completed. Updated condition ratings have been projected for 2016-2020.</p>
Where do we want to go?	<p>The 2015 study established how the creek erosion control capital works program and the August 2014 flood affected the overall condition of our creeks. This study included the surveying of an additional 10 km of urban creeks, bringing the total surveyed length to 93 km.</p> <p>Note: There is a significant increase in the Condition Index between 2015 and 2016. The main reason for the increase in the index is the inclusion of the additional 10 km of creeks, which are generally in good condition. It should be noted that the impact of the Aug 4, 2014 storm resulted in approximately 7,000 m of creek bank erosion. Following the Aug 4, 2014 storm, our capital program has added the initiative to enhance the creek conveyance capacities along with the previous erosion control rehabilitation works. We are continuing to progress with both initiatives to gradually improve the overall Creek Condition Index.</p>

Annual Creek Condition Index



SERVICE RESOURCE SUMMARY

SURFACE WATER DRAINAGE

Service Description

A public service to manage surface water drainage

Service Owner Name

Cary Clark

	2015	2016		2017 Proposed				
	Actual	Budget	Year End Projections	Base Budget	% Change vs. 2016 Budget	Business Cases	Total Budget	% Change vs. 2016 Budget
Human Resources	\$ 902,240	\$ 1,042,393	\$ 1,043,043	\$ 1,052,863	1.0%	\$ -	\$ 1,052,863	1.0%
Operating/Minor Capital Equip.	\$ 53,668	\$ 37,260	\$ 38,274	\$ 33,375	-10.4%	\$ -	\$ 33,375	-10.4%
Purchased Services	\$ 719,172	\$ 808,350	\$ 821,631	\$ 810,600	0.3%	\$ -	\$ 810,600	0.3%
Corp. Expenditures/Provisions	\$ -	\$ -	\$ -	\$ -	n/a	\$ -	\$ -	n/a
Internal Charges & Settlements	\$ 66,240	\$ 72,053	\$ 57,548	\$ 72,672	0.9%	\$ -	\$ 72,672	0.9%
TOTAL EXPENDITURES	\$ 1,741,320	\$ 1,960,056	\$ 1,960,496	\$ 1,969,510	0.5%	\$ -	\$ 1,969,510	0.5%
Controllable Revenues	\$ (11,288)	\$ (21,000)	\$ (21,000)	\$ (32,500)	54.8%	\$ -	\$ (32,500)	54.8%
General Revenues & Recoveries	\$ (315,157)	\$ (291,000)	\$ (291,050)	\$ (295,610)	1.6%	\$ -	\$ (295,610)	1.6%
TOTAL REVENUES	\$ (326,445)	\$ (312,000)	\$ (312,050)	\$ (328,110)	5.2%	\$ -	\$ (328,110)	5.2%
NET OPERATING BUDGET	\$ 1,414,875	\$ 1,648,056	\$ 1,648,446	\$ 1,641,400	-0.4%	\$ -	\$ 1,641,400	-0.4%