

Appendix A – Summary of Rate-supported Operating Budget Decision Packages

Form #	STATUS	FTE	Initiative Name	Area Responsible	Category	Revised Score	Operating Cost	Revenue / Recovery /	Net Impact on Rates
SW 1	Recommend		Stormwater Master Plan Detailed Review/Update	Engineering - Stormwater	Mandatory	27	120,000	120,000	0
SW 3	Recommend		Stormwater CCTV Inspection Program	Engineering - Stormwater	Service Level Change	16	120,000		120,000
W&WW 1	Recommend		AMI Project - Sensus Analytics	Water & WW	Service Level Change	10	44,460		44,460
Total		0.0					284,460	120,000	164,460

**2021 BUDGET
Operating Decision Package Form**

Total Points

Decision Package Item #

Project / Initiative Name

Commission:

Business Unit Number:

Division:

Business Unit Name:

Classification (select one): Growth

Service Level Change

Maintenance/Replacement

Mandatory/Legislative

Section 1 Description

Summary Please provide a brief summary of what the proposed budget item is...

In 2015 the Town initiated a Comprehensive Stormwater Management Master Plan; the Plan was approved by Council in June 2017. It is best practice to conduct a detailed formal review and update of Master Plans that were completed using a Municipal Class Environmental Assessment Approach every five years, or when there are major changes. The Master Plan addresses the:

- Existing conditions of the stormwater infrastructure
 - includes existing development, watershed and stream inventory and condition, aquatic and terrestrial ecology, water quality and quantity
- Effectiveness of the existing system - climate change lens
- Future conditions from future development
- Improvement and retrofit opportunities
- Recommended approach to stormwater management
 - including legislative requirements and funding opportunities

Classification Please provide an explanation for the classification (i.e. Growth, Service Level Change, Mandatory/Legislative) **QUOTE BILL NO. OR AGREEMENT SUPPORT FOR MANDATORY**

The Lake Simcoe Protection Plan (LSPP) is a legislated plan under the Lake Simcoe Protection Act, 2008, S.O. 2008, Chapter 23. The LSPP contains policies and objectives designed to reduce the phosphorus and other pollutant content in Lake Simcoe and its tributaries, and to protect and restore the ecological health of Lake Simcoe and its entire watershed.

One of the requirements of the LSPP is the development and implementation of a Master Plan to cover the management of stormwater for both existing and planned development in each municipality within the Lake Simcoe watershed. Very specific direction is provided in the LSPP on what needs to be included in the municipal Master Plans. **Master Plans are seen as key vehicles for meeting the vision and objectives of the legislation under the Lake Simcoe Protection Act.**

The Town initiated a Comprehensive Stormwater Master Plan (Master Plan) in 2015, and received final Council approval of the plan in June 2017. Because the Master Plan is prepared using a Class Environmental Assessment approach, it is best practice to conduct a detailed formal review and/or update every five years when there are:

- major changes to original assumptions
- major changes to components of the Master Plan
- significant new environmental effects
- major changes in proposed timing of projects within the Master Plan

Since the Town's Comprehensive Stormwater Master Plan was approved in 2017, the Tertiary Plan has been adopted, a greater focus has been placed on the future effects of Climate Change and flood risk within Newmarket, the Climate Change Resilience Assessment - Flood Vulnerabilities has been completed, and the Lake Simcoe Region Conservation Authority will complete the Holland River Watershed Stormwater Optimization Study. With these changes, it is necessary to conduct a detailed review and update of the Town's existing Master Plan.

Priority If this item addresses a priority, please explain how it does so...

This budget item will address one of Council's strategic priorities under Environmental Stewardship wherein the Engineering Services will continue to implement programs that make Newmarket a leader in the implementation of low impact design (LID) as part of the proposed Stormwater Master Plan Detailed Review/Update

Desired Service Level If this item maintains or moves toward a desired service level, please explain how it does so...

This item moves towards a desired service level in terms of proposed stormwater infrastructure to accommodate future development including stormwater management and drainage patterns, as well as, to ensure our existing system and processes are meeting our needs and legislated requirements. It will also take into account existing studies, like the Climate Change Risk Analysis - Flood Vulnerabilities, to ensure projects are prioritized to protect crucial Town infrastructure from the future effects of Climate Change.

Business Case If this item provides a financial return, please explain how it does so...

This item does not provide for a financial return, however, it will quantify future storm water projects; essential for future budgeting and rate changes.

Risk Mitigation

This project ensures the direction provided by the Master Plan is based on current information and provides for best engineering practices and standards for future stormwater works and improvements. It will also ensure alterations to the existing system needed to mitigate the negative impacts of climate change are planned for, and cost estimates are realized in future changes to the Stormwater Rate.

Section 2 Collaboration and Consultation

Please identify relevant business areas for this item. An area is relevant if collaboration or consultation is required. Identify by checking all boxes that apply below...

Customer Services	<input type="checkbox"/>	Building	<input type="checkbox"/>	Engineering	<input type="checkbox"/>	HR	<input type="checkbox"/>	IT	<input type="checkbox"/>
Legislative Services	<input type="checkbox"/>	Planning	<input type="checkbox"/>	Operations	<input checked="" type="checkbox"/>	Legal	<input type="checkbox"/>	Finance	<input checked="" type="checkbox"/>
Recreation & Culture	<input type="checkbox"/>	Procurement	<input checked="" type="checkbox"/>	Parks	<input type="checkbox"/>	Communications	<input type="checkbox"/>	Facilities	<input type="checkbox"/>
								Other	<input type="checkbox"/>

Please discuss item with relevant areas and include their comments below...	
Department	Comments
Finance	This program requires the processing of approximately 12-24 payments over the length of the project.
Procurement	This program requires the prompt tendering, award and execution of Consultant contract, in accordance with the Town's Bylaw and Trade Agreements.
Operations	This project will require information and input from Operations regarding existing infrastructure and information from an operational context.

Section 3 Financials

Details of Expenditures, Savings and Revenue									
Operating Costs		2021	2022	2023	2024	2025	2026	Ongoing Cost past 2026?	Ongoing Cost
Account #	Description								
45005.4404	Consulting Services	120,000	20,000				150,000	No	-
45005.4922	Transfer to reserve fund		30,000	30,000	30,000	30,000	30,000	Yes	30,000
Account #	New Hire Request								
	FTE								
	PTE								
	CONTRACT								
	BENEFITS - FTE	-	-	-	-	-	-		
	BENEFITS - PTE	-	-	-	-	-	-		
Operating Costs		120,000	50,000	30,000	30,000	30,000	180,000		30,000
Cost Recoveries		2021	2022	2023	2024	2025	2026	Ongoing Cost Recovery past 2026?	Ongoing Cost Recovery
Account #	Description								
45005.7556	From DC Funds	120,000	50,000	30,000	30,000	30,000	30,000	Yes	30,000
45005.7542	Transfer from reserve fund						150,000		
Cost Recoveries		120,000	50,000	30,000	30,000	30,000	180,000		30,000
Total Net Cost		-	-	-	-	-	-		-
Total Cost	470,000	Total Cost Recoveries		470,000	Total Net Cost		-	Cost Recovery	100%

Section 4 Evaluation

+9 Council Priority Council Approved Strategic Plan +4 SLT Priority +2 Documented Recommendation +6		+3 Moves Toward/Maintains Desired Service Level Desired Service Level (All or nothing)		+5 Ongoing Net Operational Cost Efficiencies / Net New Revenue <i>Automatically calculated once you fill out Section 3 Financials</i> Business Case (Scale)	
Priority (Pick one)	Points	Desired Service Level (All or nothing)	Points	Business Case (Scale)	Points
	6		3		3

Risk Reduction / Mandatory or Legal Requirement					
Input <u>Current risk</u> , which is the risk before implementation of the budget item and <u>Post-Implementation risk</u> , which is the risk after the implementation of the budget item. *If this item is a mandatory or legal requirement, the item is guaranteed a minimum score of 15 in this category					
Current Risk			Post-Implementation Risk		
Consequence	Likelihood		Consequence	Likelihood	Points
4	3		4	2	15

Evaluation Components				
Priority	Desired Service Level	Business Case	Risk Reduction / Mandatory or Legal Requirement	Total Points
6	3	3	15	27

Prepared By:	Reviewed By:	Commissioner:
Craig Schritt	Rachel Prudhomme	Peter Noehammer

**2021 BUDGET
Operating Decision Package Form**

Total Points

Decision Package Item #

Project / Initiative Name

Commission:

Business Unit Number:

Division:

Business Unit Name:

Classification (select one): Growth

Service Level Change Yes

Maintenance/Replacement

Mandatory/Legislative

Section 1 Description

Summary Please provide a brief summary of what the proposed budget item is...

CCTV inspections are the foundation of modern, risk-based management of sewer networks. The City owns 284 kilometers of stormwater sewers that convey rainwater during storm events but they are not currently inspected at an adequate level due to current funding. As the system ages, defects will increase and failures could happen such as cracking, flooding, or collapse. The only way to detect failures before they occur is through the proposed CCTV program. These defects cannot be identified through regular operations because the pipes are underground. To manage a system of the Town's size, a regular inspection program needs to be created so that the risk in the system can be managed. Without such a program, the risk of failure and the service disruption to residents is unknown. CCTV is a standard practice in all municipalities and utilities that own sewer networks. It is a standard practice to first establish baseline conditions in the entire system, at which point tactical monitoring can use risk and economics to schedule inspections or repairs. In some cases, follow up inspections may not be required for many years. This program is a minimum cost based on the Town's stormwater network size.

Contracted services will conduct inspections by feeding a camera through the sewer, and coding the defects using an international protocol (NASSCO PACP). The data point produced by the inspection is a 5 point condition rating, with 1 being very good and 5 being imminent failure. The outputs of these inspections offer significant benefit to the Town. The data that is produced will be analyzed to optimize repair methods and timing, integrate repairs with other assets (e.g. roads), and prioritize the work of staff and contractors. The risk in the system will be quantified and managed proactively. Failures such as sewer back-ups, flooding, and sink holes will be avoided through early detection. The data can also be aggregated to model system level deterioration, which greatly enhances the ability to forecast future replacement costs. The Town cannot conduct programs such as road resurfacing, road replacement, sewer replacement, sewer lining, &I reduction, debris removal, or point repairs without CCTV inspections.

Classification Please provide an explanation for the classification (i.e. Growth, Service Level Change, Mandatory/Legislative) **QUOTE BILL NO. OR AGREEMENT SUPPORT FOR MANDATORY**

Historically, CCTV inspections have focused on the Town's wastewater system because it is older than stormwater, has a higher likelihood of failure (due to the impacts of wastewater chemistry), and was rated support. Storm sewers were only inspected as needed or to align with other project, despite being a sewer network the same size as wastewater.

This proposal is a Service Level Change because it shifts the Town's approach to storm sewer inspections from reactive to programmed. The service level change brings stormwater into alignment with wastewater. Stormwater and wastewater infrastructure systems are the same quantity (200km +). However, the storm sewers themselves are on average twice the diameter of a wastewater sewer, meaning a stormwater failure during a rain event could have a larger impact. This is a pertinent change to service levels given that the storm sewer network is beginning to age, and will improve service levels by avoiding or mitigating potentially catastrophic failures. On average, storm sewers are 6 years younger than wastewater sewers.

The proposed change enhances the Level of Service to inspecting 20% of the system per year, completing the baseline after 5 years (100%). After 5 years, the Level of Service may be reduced to 10% per year, due to the practice of placing sewers under risk management protocols driven by data, economics, and industry standards.

Priority If this item addresses a priority, please explain how it does so...

This program is required to achieve the Town's Goal #1 of Fiscal Sustainability. Current estimates suggest that a 284 kilometer network is worth approximately \$1.45 million per kilometer, or \$411 million in total replacement cost. This program maintains the Town's fiscal sustainability by ensuring that the system is kept in a good state of repair, is maintained to a level that its full value is realized, and that services can continue to be delivered sustainably. Maintaining the underground sewers also adds benefit to the surrounding assets such as roads - by using tactical programs like CCTV, trenchless repairs are more prevalent and cuts into the road surface are avoided. An annual cost of \$170K greatly improves the Town's ability to deliver on the Council Priority as it applies to a \$400 Million + sewer network.

A CCTV program is needed to complete the Council directive of an updated Asset Management Plan with strategies for funding and levels of service. Without condition data, these Plans rely on high level assumptions not adequate for the important decisions posed by asset management plans. CCTV will also greatly improve the ability to plan multi year capital and operating budgets. Once condition is observed sewers deteriorate in a fairly uniform manner, allowing maintenance to be programmed with a high level of certainty. National standards for defect coding, deterioration modelling, and risk management using economics mean that once condition is obtained, the year of capital and operating costs can be planned for each sewer segment with a high degree of certainty. Without CCTV, budgeting cannot be intelligent or on a large time scale because programs will be reactive to failures as they occur and without prior knowledge.

Desired Service Level If this item maintains or moves toward a desired service level, please explain how it does so...

This item moves the Town into a desired service level where sewers are inspected at the recommended frequency and the information is used to maintain reliability, improve planning and budget, and optimize the use of limited funds through risk management and trenchless repairs. As previously explain, the proposed service level for stormwater is fully aligned with the current wastewater sewer network, which is of a similar size and replacement value.

Business Case If this item provides a financial return, please explain how it does so...

CCTV inspection costs approximately \$3.00 per meter when contracted. Conversely, the replacement cost of a sewer is \$1450 per meter, meaning CCTV is equivalent to 0.2% of the replacement value of a sewer. The value that is extracted from a very cheap CCTV inspection is considerable when the replacement cost is compared, especially in terms of risk management. This is before the premium cost of failure is applied. Studies examined by staff (e.g. City of Guelph Linear Assets Risk Management Framework) suggest that replacing a failed stormwater asset in a reactive manner can cost 25% to 30% more than replacing it under planned and controlled environments, due to mobilization and escalated cost. In a \$411M system, this would translate to an extra \$100M in potential risk exposure, if every sewer were in a failed state (which they are not). Inspecting the entire system over 5 years will cost approximately \$850K (\$170K) per year, meaning that the cost of an inspection is also less than 1% of the premium cost that would be realized by managing the entire system reactively over time. After 5 years, exposure of the entire system will be established because of the condition ratings produced by CCTV.

Risk Mitigation

As explained throughout this proposal, the purpose of CCTV is to detect and avoid risk in an expansive underground sewer network. CCTV inspections with proper condition data will significantly improve the Town's understanding of risk exposure, and will provide the tools and techniques to manage it at a tactical level through repairs as well holistically over the long term through proper steps to ensure financial sustainability. CCTV is the cornerstone of avoiding risk in stormwater sewers.

Section 2 Collaboration and Consultation

Please identify relevant business areas for this item. An area is relevant if collaboration or consultation is required. Identify by checking all boxes that apply below....

Customer Services	<input type="checkbox"/>	Building	<input type="checkbox"/>	Engineering	<input checked="" type="checkbox"/>	HR	<input type="checkbox"/>	IT	<input checked="" type="checkbox"/>
Legislative Services	<input type="checkbox"/>	Planning	<input type="checkbox"/>	Operations	<input checked="" type="checkbox"/>	Legal	<input type="checkbox"/>	Finance	<input checked="" type="checkbox"/>

Recreation & Culture	Procurement	x	Parks	Communications	Facilities	Other	Asset Management
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Please discuss item with relevant areas and include their comments below...	
Department	Comments
Asset Management	This proposal is being led by the Asset Management Office, who made the recommendation during the update of the Stormwater Financial Plan. The CCTV program aligns with the AM Office's objectives for asset management, data analysis, deterioration modeling, optimization, risk management, and preventive maintenance of the stormwater system. The AM Office is not equipped to lead the program, but is leading the proposal as advocates for Town infrastructure.
Public Works	The Public Works Department oversees the current wastewater CCTV program, and is responsible for the storm sewer network as defined by the stormwater Memorandum of Understanding. Public Works will run the CCTV program, but will require support from Engineering and Asset Management.
GIS / IT	CCTV produces large amounts of data. The existing CCTV app will be used to record inspections, and GIS, AM, Engineering, and PWS will continue to work to improve practices for data management through continuous improvement.
Engineering	Engineering plays a role in CCTV inspections, in particular the rehabilitation decision making and capital improvement planning. It is expected Engineering will provide support to the program.

Section 3 Financials

Details of Expenditures, Savings and Revenue								Ongoing Cost past 2026?	Ongoing Cost
Operating Costs	2021	2022	2023	2024	2025	2026			
Account #	Description								
45004.4278.06	CCTV Program	120,000	170,000	170,000	170,000	170,000	85,000	Yes	85,000
Account #	New Hire Request								
	FTE								
	PTE								
	CONTRACT								
	BENEFITS - FTE	-	-	-	-	-	-		
	BENEFITS - PTE	-	-	-	-	-	-		
Operating Costs		120,000	170,000	170,000	170,000	170,000	85,000		85,000
Cost Recoveries	2021	2022	2023	2024	2025	2026		Ongoing Cost Recovery past 2026?	Ongoing Cost Recovery
Cost Recoveries									
Total Net Cost	120,000	170,000	170,000	170,000	170,000	85,000			
Total Cost	970,000								
Total Cost Recoveries	-								
Total Net Cost	970,000								
Cost Recovery									0%

Section 4 Evaluation

+9 Council Priority +6 Council Approved Strategic Plan +4 SLT Priority +2 Documented Recommendation		+3 Moves Toward/Maintains Desired Service Level		+5 Ongoing Net Operational Cost Efficiencies / Net New Revenue <i>Automatically calculated once you fill out Section 3 Financials</i>	
Priority (Pick one)	Points	Desired Service Level (All or nothing)	Points	Business Case (Scale)	Points
	4		3		0
Risk Reduction / Mandatory or Legal Requirement					
Input Current risk, which is the risk before implementation of the budget item and Post-Implementation risk, which is the risk after the implementation of the budget item. *If this item is a mandatory or legal requirement, the item is guaranteed a minimum score of 15 in this category					
Current Risk			Post-Implementation Risk		
Consequence	Likelihood		Consequence	Likelihood	Points
3	5		3	2	9
Evaluation Components					Total Points
Priority	Desired Service Level	Business Case	Risk Reduction / Mandatory or Legal Requirement		
4	3	0	9		16

Prepared By:	Reviewed By:	Commissioner:
Lisa Ellis	Peter Noehammer	Peter Noehammer

**2021 BUDGET
Operating Decision Package Form**

Total Points

Decision Package Item #

Project / Initiative Name

Commission:

Business Unit Number:

Division:

Business Unit Name:

Classification (select one): Growth

Service Level Change Yes

Maintenance/Replacement

Mandatory/Legislative

Section 1 Description

Summary Please provide a brief summary of what the proposed budget item is...

The Sensus infrastructure was selected for the water meter replacement/retrofit program. The project includes the replacement/retrofit of 27,000 meters in the Town of Newmarket service area. This request is specifically for the Sensus Analytics platform for the AMI Data Analyst position. This new software will allow the Data Analyst to manage alarms more effectively and in real time.

Classification Please provide an explanation for the classification (i.e. Growth, Service Level Change, Mandatory/Legislative) **QUOTE BILL NO. OR AGREEMENT SUPPORT FOR MANDATORY**

The Sensus Analytics platform will help improve the meter service levels by effectively managing alarms to minimize meter down time. I will also assist with troubleshooting meters which may result in less meter maintenance/replacements.

Priority If this item addresses a priority, please explain how it does so...

Ensure ongoing continuous improvement and a service level analysis for consideration. Utilize both internal and external resources to complete an assessment of the Town's overall financial health to support effective and efficient long-term planning. AMI project is a strategic project approved by Council.

Desired Service Level If this item maintains or moves toward a desired service level, please explain how it does so...

The Sensus Analytics platform will help Town staff move toward a desired service level by automating various alarm processes and allow real time alarm management. This licence will assist the AMI Data Analyst/Backflow Prevention positions in providing efficient, cost effective customer service to residents/ICI, while also effectively managing meter alarms.

Business Case If this item provides a financial return, please explain how it does so...

Costs are 100% recovered from Water and Wastewater Rate revenue and will be included in the Water operating budget. The Sensus Analytics platform creates efficiencies for staff by automating alarm processes where possible. It also allows for real-time alarm data versus the Sensus RNI and Savage MDM which captures day old data. This will allow for a better customer experience.

Risk Mitigation

This platform will allow for quicker alarm response and more efficient alarm management than using the Sensus RNI alone.

Section 2 Collaboration and Consultation

Please identify relevant business areas for this item. An area is relevant if collaboration or consultation is required. Identify by checking all boxes that apply below....

Customer Services	<input type="checkbox"/>	Building	<input type="checkbox"/>	Engineering	<input type="checkbox"/>	HR	<input type="checkbox"/>	IT	<input checked="" type="checkbox"/>
Legislative Services	<input type="checkbox"/>	Planning	<input type="checkbox"/>	Operations	<input checked="" type="checkbox"/>	Legal	<input type="checkbox"/>	Finance	<input type="checkbox"/>
Recreation & Culture	<input type="checkbox"/>	Procurement	<input type="checkbox"/>	Parks	<input type="checkbox"/>	Communications	<input type="checkbox"/>	Facilities	<input type="checkbox"/>
								Other	<input type="checkbox"/>

Please discuss item with relevant areas and include their comments below...

Department	Comments
Operations	There will be training from Sensus required for the Data Analyst on the platform to allow for alarm management
IT	There may be some IT set ups required to get the Sensus Analytics platform functional

Section 3 Financials

Details of Expenditures, Savings and Revenue

Operating Costs		2021	2022	2023	2024	2025	2026	Ongoing Cost past 2026?	Ongoing Cost
Account #	Description								
42421.4482	Analytics Annual Fee	21,060	43,740	45,360	46,980	48,600	50,220	Yes	50,220
	Analytics Set Up Fee	18,000							
	Sensus Analytics Integration Fee	5,400							
Account # New Hire Request									
	FTE								
	PTE								
	CONTRACT								
	BENEFITS - FTE	-	-	-	-	-	-		
	BENEFITS - PTE	-	-	-	-	-	-		

Operating Costs		44,460	43,740	45,360	46,980	48,600	50,220		50,220
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Cost Recoveries		2021	2022	2023	2024	2025	2026	Ongoing Cost Recovery past 2026?	Ongoing Cost Recovery
Account #	Description								

Cost Recoveries		-	-	-	-	-	-		-
Total Net Cost		44,460	43,740	45,360	46,980	48,600	50,220		-

Total Cost	<input type="text" value="329,580"/>	Total Cost Recoveries	<input type="text" value="-"/>	Total Net Cost	<input type="text" value="329,580"/>	Cost Recovery	<input type="text" value="0%"/>
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Section 4 Evaluation

+9 Council Priority +6 Council Approved Strategic Plan +4 SLT Priority +2 Documented Recommendation	
Priority (Pick one)	Points
	6

+3 Moves Toward/Maintains Desired Service Level	
Desired Service Level (All or nothing)	Points
	0

+5 Ongoing Net Operational Cost Efficiencies / Net New Revenue <i>Automatically calculated once you fill out Section 3 Financials</i>	
Business Case (Scale)	Points
	0

Risk Reduction / Mandatory or Legal Requirement

Input **Current risk**, which is the risk before implementation of the budget item and **Post-Implementation risk**, which is the risk after the implementation of the budget item.
 *If this item is a mandatory or legal requirement, the item is guaranteed a minimum score of 15 in this category

Current Risk		Post-Implementation Risk		Points
Consequence	Likelihood	Consequence	Likelihood	
2	5	2	3	4

Priority	Desired Service Level	Business Case	Risk Reduction / Mandatory or Legal Requirement	Total Points
6	0	0	4	10

Prepared By:	Reviewed By:	Commissioner:
Brett Bloxam	Mark Agnoletto	Peter Noehammer