## Appendix C – Rate- Supported Operating Budget Decision Packages

| DP# | Status | Decision Package Name | Category | FTE | Operating Cost | Revenue / Recovery / Offset | Rate Net Impact |
|---|---|---|---|---|---|---|---|
| 20 | Recommend | Water Wastewater Lead Hand | Enhance / Growth | 1 | **$ 99,643** | - | 99,643 |
| 21 | Recommend | Water Wastewater Operator | Enhance / Growth | 1 | **$ 85,572** | - | 85,572 |
| 23 | Recommend | Stormwater CCTV Program Implementation | Replacements, Rehabilitation and/or Maintenance | 0 | **$ 50,000** | - | 50,000 |
| **Total Operating - Recommended** | | | | **2** | **$ 235,215** | **$ -** | **$ 235,215** |

**2022 BUDGET**
**Operating Decision Package Form**

| | | | | | |
|---|---|---|---|---|---|
| **Project / Initiative Name** | **Water Wastewater Lead Hand** | | | | |
| **Net Costs** | **$ 99,643** | **Resources Requirements** | **New Resources** | **Decision Package #** | |
| **Commission/Area:** | **Development and Infrastructure Services Commission** | | | **Division/ Departments:** | **Public Works- Water/Wastewater** |
| **Legislative Requirement (select one):** | **Yes** | **Quote Legislation:** | Safe Drinking Water Act, 2002 | | |

## Section 1 : Project Scope

### 1.1 - Project Classification and Overview

**Provide comprehensive overview of the project request**

**Classification (select one):** Replacements, Rehabilitation and/or Maintenance

This request is to recruit One (1) Water & Wastewater (W &WW) Lead Hand to maintain the Towns infrastructure, including the water distribution, wastewater collection and Stormwater linear infrastructure and all associated appurtenances. The estimated total replacement costs of the W & WW assets is $427 million. The systems are currently maintained by a workforce of 11 W & WW Licensed Operators and 2 Lead Hands. Due to growth in infrastructure the Water & Wastewater business unit is required to operate and maintain, an additional Lead Hand is needed to oversee the continued maintenance and to ensure the inspection of these critical systems is supported, and regulatory compliance is maintained.

### 1.2 - Project Alignment and Justification

**Outline justification for need of project request**

**Corporate Alignment & Opportunity (select one):** Commission or Departmental Business Plan

ONLY SELECT FROM PICK LIST IF COUNCIL PRIORITY SELECTED IN CORPORATE ALIGNMENT & OPPORTUNITY SECTION ABOVE

The W & WW unit is responsible for operating and maintaining all of the Towns water, wastewater and Stormwater infrastructure. This infrastructure includes, 318 kms of watermain, 2,358 municipally owner fire hydrants, 26,407 metered water services, 7 Sewage Pumping Stations, and related infrastructure. The water, wastewater and Stormwater systems in Newmarket are deemed to be the highest valve asset to replace in the Town's Asset Inventory. Additionally the Town is responsible for adhering to strict Water Quality Legislation requiring a water quality sampling program, watermain flushing and water quality monitoring to be carried out on an ongoing basis. Currently the Town W&WW unit is operating with two Lead Hands responsible for a number of daily activities and staff. The addition of one (1) Lead Hand will allow for better span of control, oversight, planning and scheduling of proactive work programs and provide coverage, ensuring regulatory compliance.

### 1.3 - Levels of Service

**Outline the desired outcome and/or benefits**

**Levels of Service & Infrastructure Impact (select one):** Secures Existing Service Levels & Addresses Infrastructure Gap

The addition of a Lead Hand will provide the ability to plan and schedule proactive maintenance programs, forecast maintenance and repair works, provide oversight to growing staff complement ensuring all work is carried out according to policy, regulation and in a safe and health method, meeting all Health & Safety requirements.

### 1.4 - Community Impact

**Outline Community Impact (if applicable)**

**Community Impact (select one):** Minor Impact - Local Benefit

Failure to adequately operate and maintain water and wastewater systems can have serious impacts on health, regulatory requirements, customer service and public and private property.

### 1.5 - Risk

**Outline the risks associated with the project both positive and negative**

**Risk Category (select highest risk area):** Operational

**Timelines for Potential Risk Impacts** Within 1 year

Failure to maintain the Towns Water and Wastewater infrastructure may have regulatory and public health impacts. The Statutory Standard of Care is Section 19 of the Safe Drinking Water Act (SDWA) of 2002 which expressly extends legal responsibility to people with decision-making authority over municipal drinking water systems. It requires that they exercise the level of care, diligence and skill with regard to a municipal drinking water system that a reasonably prudent person would be expected to exercise in a similar situation. It is also expected that they exercise this due diligence honestly, competently and with integrity.

## Section 2 : Financials

**Details of Incremental Expenditures, Savings and Revenue**

| **Operating Costs** | | **2022** | **2023** | **2024** | **2025** | **2026** | **2027** |
|---|---|---|---|---|---|---|---|
| Account # | Description | | | | | | |
| | | 5,000 | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Account # | New Hire Requests In $ | | | | | | |
| | **FTE 1** | 73,940 | 73,940 | 73,940 | 73,940 | 73,940 | 73,940 |
| | **PTE** | | | | | | |
| | **CONTRACT** | | | | | | |
| | **BENEFITS - FTE** | 20,703 | 20,703 | 20,703 | 20,703 | 20,703 | 20,703 |
| | **BENEFITS - PTE** | - | - | - | - | - | - |
| **Total Operating Costs** | | **99,643** | **94,643** | **94,643** | **94,643** | **94,643** | **94,643** |
| **Cost Recoveries** | | **2022** | **2023** | **2024** | **2025** | **2026** | **2027** |
| Account # | Description | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| **Total Cost Recoveries** | | - | - | - | - | - | - |
| **Total Net Cost** | | **99,643** | **94,643** | **94,643** | **94,643** | **94,643** | **94,643** |

## Section 3 : Sign-off

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Collaboration** | | **Consulted With** | | | | | | |

| **Prepared By:** | **Reviewed By:** | **Commissioner:** |
|---|---|---|
| **Rob Gillis, Manager Water & Wastewater** | **Mark Agnoletto** | **Peter Noehammer** |

**2022 BUDGET**
**Operating Decision Package Form**

| | | | | | |
|---|---|---|---|---|---|
| **Project / Initiative Name** | **Water Wastewater Operator** | | | | |
| **Net Costs** | **$ 85,572** | **Resources Requirements** | **New Resources** | **Decision Package #** | |
| **Commission/Area:** | **Development and Infrastructure Services Commission** | | | **Division/ Departments:** | **Public Works- Water/Wastewater** |
| **Legislative Requirement (select one):** | **No** | **Quote Legislation:** | Safe Drinking Water Act 2002 | | |

## Section 1 : Project Scope

### 1.1 - Project Classification and Overview

**Provide comprehensive overview of the project request**

**Classification (select one):** Enhance / Growth

This request is to recruit One (1) Water & Wastewater (W &WW) Operator to maintain the Towns infrastructure, including the water distribution, wastewater collection and stormwater linear infrastructure and all associated appurtances. The estimated total replacement costs of the W & WW assets is $427 million. The systems are currently maintained by a workforce of 11 W & WW Licensed Operators and 2 Lead Hands. Due to growth in infrastructure the Water & Wastewater business unit is required to operate and maintain, an additional Operator is needed to ensure continued maintenance and the inspection of these critical systems is supported, and regulatory compliance is maintained.

### 1.2 - Project Alignment and Justification

**Outline justification for need of project request**

**Corporate Alignment & Opportunity (select one):** Departmental Plan with Added Opportunity

ONLY SELECT FROM PICK LIST IF COUNCIL PRIORITY SELECTED IN CORPORATE ALIGNMENT & OPPORTUNITY SECTION ABOVE

Ongoing growth has resulted in the assumption of 4 large housing developments in the past 5 years. The effect of this development has resulted in the transfer of 6,838 meters of Watermain, 6,800 meters of Sanitary sewer, 7,390 meters of Storm sewer and all related infrastructure, ie. fire hydrant, valves, maintenance holes,stormwater treatment facilities, etc. The continued operation and maintenance of this infrastructure requires the addition of a Water&Wastewater Operator to ensure ongoing maintenance and legislative requirements mandated through Ministry of Environment, Conservation and Parks (MECP) Certificate of Approvals are maintained.

### 1.3 - Levels of Service

**Outline the desired outcome and/or benefits**

**Levels of Service & Infrastructure Impact (select one):** Secures Existing Service Levels & Addresses Infrastructure Gap

The addition of a Water&Wastewater Operator will ensure the Town maintains the exisiting infrstructure in a state of good repair, maximizing the life cycle of the assets, minimizing disruption to customers and maintaining regulatory compliance.

### 1.4 - Community Impact

**Outline Community Impact (if applicable)**

**Community Impact (select one):** Significant Impact - Town Wide

Failure to adequatley operate and maintain water and wastewater systems can have serious impacts to health, regulatory requirements, customer service and public and private property.

### 1.5 - Risk

**Outline the risks associated with the project both positive and negative**

**Risk Category (select highest risk area):** Health and Safety

**Timelines for Potential Risk Impacts** Within 3 months

Failure to maintain the Towns Water and Wastewater infrastructure may have regulatory and public health impacts. The Statutory Standard of Care is Section 19 of the Safe Drinking Water Act (SDWA) of 2002 which expressly extends legal responsibility to people with decision-making authority over municipal drinking water systems. It requires that they exercise the level of care, diligence and skill with regard to a municipal drinking water system that a reasonably prudent person would be expected to exercise in a similar situation. It is also expected that they exercise this due diligence honestly, competently and with integrity.

## Section 2 : Financials

**Details of Incremental Expenditures, Savings and Revenue**

| **Operating Costs** | | **2022** | **2023** | **2024** | **2025** | **2026** | **2027** |
|---|---|---|---|---|---|---|---|
| Account # | Description | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Account # | New Hire Requests In $ | | | | | | |
| | **FTE** | 66,853 | 66,853 | 66,853 | 66,853 | 66,853 | 66,853 |
| | **PTE** | | | | | | |
| | **CONTRACT** | | | | | | |
| | **BENEFITS - FTE** | 18,719 | 18,719 | 18,719 | 18,719 | 18,719 | 18,719 |
| | **BENEFITS - PTE** | - | - | - | - | - | - |
| **Total Operating Costs** | | **85,572** | **85,572** | **85,572** | **85,572** | **85,572** | **85,572** |
| **Cost Recoveries** | | **2022** | **2023** | **2024** | **2025** | **2026** | **2027** |
| Account # | Description | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| **Total Cost Recoveries** | | - | - | - | - | - | - |
| **Total Net Cost** | | **85,572** | **85,572** | **85,572** | **85,572** | **85,572** | **85,572** |

## Section 3 : Sign-off

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Collaboration** | | **Consulted With** | | | | | | |

| **Prepared By:** | **Reviewed By:** | **Commissioner:** |
|---|---|---|
| **Rob Gillis, Manager Water & Wastewater** | **Mark Agnoletto** | **Peter Noehammer** |

**2022 BUDGET**
**Operating Decision Package Form**

| | | | | | |
|---|---|---|---|---|---|
| **Project / Initiative Name** | **Stormwater CCTV Program Implementation** | | | | |
| **Net Costs** | **$ 50,000** | **Resources Requirements** | **No New Resources** | **Decision Package #** | |
| **Commission/Area:** | **Development and Infrastructure Services Commission** | | | **Division/ Departments:** | **Engineering Services** |
| **Legislative Requirement (select one):** | **No** | **Quote Legislation:** | | | |

## Section 1 : Project Scope

### 1.1 - Project Classification and Overview

**Provide comprehensive overview of the project request**

**Classification (select one):** Replacements, Rehabilitation and/or Maintenance

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&I reduction, debris removal, or point repairs without CCTV inspections.

### 1.2 - Project Alignment and Justification

**Outline justification for need of project request**

**Corporate Alignment & Opportunity (select one):** Approved Strategic Plan

ONLY SELECT FROM PICK LIST IF COUNCIL PRIORITY SELECTED IN CORPORATE ALIGNMENT & OPPORTUNITY SECTION ABOVE

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.

### 1.3 - Levels of Service

**Outline the desired outcome and/or benefits**

**Levels of Service & Infrastructure Impact (select one):** Secures Existing Service Levels & Addresses Infrastructure Gap

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.

### 1.4 - Community Impact

**Outline Community Impact (if applicable)**

**Community Impact (select one):** Minor Impact - Local Benefit

### 1.5 - Risk

**Outline the risks associated with the project both positive and negative**

**Risk Category (select highest risk area):** Operational

**Timelines for Potential Risk Impacts** Within 3 years

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.

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.

The risks associated with undertaking the program are added levels of staff time to manage the contract and the data, as well as increased demand for maintenance funds as repairs or defects are uncovered. However, the alternative to this is to wait for failures to occur or are detected opportunistically, and then to respond reactively which may disrupt other services. In addition, courts are increasingly finding Municipalities liable for the impacts of flooding. By improving our due diligence activities as outlined above the Town will in a better position to reduce our risk associated with this type of litigation.

## Section 2 : Financials

**Details of Incremental Expenditures, Savings and Revenue**

| **Operating Costs** | | **2022** | **2023** | **2024** | **2025** | **2026** | **2027** |
|---|---|---|---|---|---|---|---|
| Account # | Description | | | | | | |
| 45004.4278.06 | CCTV Program | 50,000 | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| Account # | New Hire Requests In $ | | | | | | |
| | **FTE** | | | | | | |
| | **PTE** | | | | | | |
| | **CONTRACT** | | | | | | |
| | **BENEFITS - FTE** | | | | | | |
| | **BENEFITS - PTE** | | | | | | |
| **Total Operating Costs** | | **50,000** | **-** | **-** | **-** | **-** | **-** |
| **Cost Recoveries** | | **2022** | **2023** | **2024** | **2025** | **2026** | **2027** |
| Account # | Description | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| **Total Cost Recoveries** | | **-** | **-** | **-** | **-** | **-** | **-** |
| **Total Net Cost** | | **50,000** | **-** | **-** | **-** | **-** | **-** |

## Section 3 : Sign-off

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Collaboration** | | **Consulted With** | | | | | |

| **Prepared By:** | **Reviewed By:** | **Commissioner:** |
|---|---|---|
| | | |