2024 BUDGET
Town of Cobourg

PUBLIC WORKS: ENVIRONMENTAL SERVICES

2024 BUDGET
Town of Cobourg

New Staff

Operating Budget - New Staff Hire

Position Title:	Environmental Technician II	**Reports to:**	Manager, Environmental Services
Division:	Public Works Division	**Department:**	Environmental Services
Start Date:	Q3 2024	**Position Type:**	Full-Time

Justification Category

☐ Council Request ☐ Organizational Review ☒ New Impacts ☐ Other

Please explain in detail:
The department used to have two (2) Environmental Technician II's. However, when one of them left the Town, they were not replaced. Instead, all of the duties were incorporated into a single Environmental Technician I position. The current incumbent has performed all of these duties extremely well, however, this position has expanded to include several new tasks such as beach sampling, hazardous waste disposal, industrial abatement and coordination of environmental spill cleanups which is far more than what should be expected of one full time employee. This position is also critical to operations within the Environmental Services department and redundancy/succession planning should be re-implemented.

Budget Implications

Salary Scale:	$27.58 – $34.49/hr				
Grade:	6B	**Level:**	80%	**Union:**	Union
			Total Salary ($):		2024 ~$40,000 (inc. benefits)

Benefits Required for Position:
Supplemental cost of benefits: (1) Clothing Q4/24: $86.50, 2025: $421, 2026: $346 (2) Footwear: $225/yr (3) Safety Equipment: $200 – one time expense

Total Cost of Benefits ($):	$500 in 2024 $650 in 2025

Equipment Required for Position:
Please include any required technology, office supplies or any other specialized equipment.
All required equipment is pre-existing. Desk available but will require new chair and filing cabinets.

Total Cost of Equipment ($):	$500.

Training/Memberships Required for Position:
Please include any training costs, designation dues, fees and/or memberships.
OWWCO Licensing: $280 every 3 years
Wastewater Treatment/Collection Courses: $3,000/yr

Total Cost for Training/Memberships ($):	$3300
Total Budget Required ($):	2024: $44,950

Capital Budget

Capital Budget – Projects

Project Title:	Alum Flow Meters (Plant #2)		
Division:	Public Works	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain justification in detail:
The alum feed pumps are currently adjusted manually each day after the Operator physically measures the discharge volume using a stopwatch and a volumetric flask. To more accurately dose alum into the effluent on a continuous basis, in-line, flow-measuring devices are required on each alum feed line. The flow can then be continuously monitored & controlled by the Plant's SCADA system.
Start Date: June 2024

Budget Implications

Budget Required:	$15,000
Funding Available:	Sanitary Reserve $15,000
Total Project Cost ($):	$15,000
Total Budget Required ($):	$0

Commitments:
Please describe any commitments that have already been made for this capital project.
N/A

Effects on Future Operating Budgets:
To ensure continuous compliance with the facility ECA, Operators over-dose effluent with alum to compensate for daily fluctuations in Plant flows. This wastes a considerable quantity of alum. Alum flow meters will permit the SCADA system to monitor/control the alum flow 24/7 to match the Plant flow. This will eliminate ~100 hr/yr in labour costs (manual measurement) and reduce alum costs by $2,000-5,000 annually.

Public Consultation Requirements:
Please describe the public consultations that are required for this project.
N/A

Timeline and Major Milestones:
Please describe the projected timeline and specific milestones of the project, if applicable.
If ordered in January 2024, the pumps could be installed by May 2024.

Capital Budget – Projects

Project Title:	Alum Feed Pumps (Plant #2)		
Division:	Public Works	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain justification in detail:
The alum feed pumps operate 24 hr/day, 7 days/week to precipitate phosphorus from the Plant effluent. They are original equipment and have been in continuous use since 1992. Both pumps need to be replaced at a combined cost of $75,000. This price includes installation. Start Date: June 2024

Budget Implications

Budget Required:	$75,000
Funding Available:	Sanitary Reserve $75,000
Total Project Cost ($):	$75,000
Total Budget Required ($):	$0

Commitments:
Please describe any commitments that have already been made for this capital project.
N/A

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, staffing, etc.)
New pumps will likely be a higher efficiency and therefore use less electricity to achieve the same results. Otherwise, there will be little impact to future Operating Budgets.

Public Consultation Requirements:
Please describe the public consultations that are required for this project.
N/A

Timeline and Major Milestones:
Please describe the projected timeline and specific milestones of the project, if applicable.
If ordered in January 2024, the pumps could be installed by May 2024.

Capital Budget – Projects

Project Title:	McGill PS Pump #2 Replacement		
Division:	Public Works Division	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain justification in detail:
The McGill Pump Station is the Town's largest sanitary pump station. It employs three (3) Xylem pumps that move an average of over 2,000 m3/day. In 2020, Pump #3 was replaced and in 2023 Pump #1 was replaced. Pump #2 was refurbished in 2020 and expected to last until 2025. However, Pump #2 is failing prematurely and will need to be replaced in 2024.
Start Date: June 2024

Budget Implications

Budget Required:	$150,000
Funding Available:	Sanitary Reserve $150,000
Total Project Cost ($):	$150,000
Total Budget Required ($):	$0

Commitments:
Please describe any commitments that have already been made for this capital project.
N/A

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, staffing, etc.)
The mechanical seal in Pump #2 is failing. Sewage is mixing with the oil, making it necessary to replace the oil frequently. Replacing the pump will reduce maintenance costs significantly. The new N-Impellor will reduce the number of clogs that are very time-consuming to remedy.

Public Consultation Requirements:
Please describe the public consultations that are required for this project.
N/A

Timeline and Major Milestones:
Please describe the projected timeline and specific milestones of the project, if applicable.
Pump #3 was replaced (new) in 2020 and should not require refurbishment until 2030. Pump #1 was replaced (new) in 2023 and should not require refurbishment until 2033. If Pump #2 is replaced in 2024, it should not require refurbishment until 2034.

Pictures:


Capital Budget – Projects

Project Title:	Digester Mixing Pumps (Plant #1)		
Division:	Public Works	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain justification in detail:
The Digester Mixing Pumps were installed in 2012 and operate 24 hrs/day, 365 days/yr. The abrasiveness and corrosive nature of the sludge decreases the life expectancy of these pumps. Two pumps are needed at a cost of $75,000 per pump.
Start Date: June 2024

Budget Implications

Budget Required:	$150,000
Funding Available:	Sanitary Reserve $150,000
Total Project Cost ($):	$150,000
Total Budget Required ($):	$0

Commitments:
Please describe any commitments that have already been made for this capital project.
N/A

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, staffing, etc.)
New pumps will likely be a higher efficiency and therefore use less electricity to achieve the same results. Otherwise, there will be little impact to future Operating Budgets.

Public Consultation Requirements:
Please describe the public consultations that are required for this project.
N/A

Timeline and Major Milestones:
Please describe the projected timeline and specific milestones of the project, if applicable.
If ordered in January 2024, the pumps could be installed by August 2024.

Capital Budget – Projects

Project Title:	Guiderails		
Division:	Public Works	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain justification in detail:
The 2023 CIMA Facility Condition Assessment Report identified several locations where guiderails are required to meet the Occupational Health & Safety (OHSA) Regulations.
Start Date: July 2024

Budget Implications

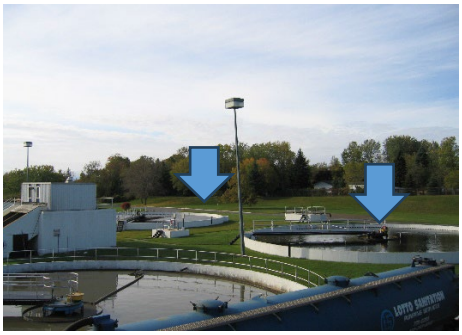
Budget Required:	$50,000
Funding Available:	Sanitary Reserve - $50,000
Total Project Cost ($):	$50,000
Total Budget Required ($):	$0

Commitments:
Please describe any commitments that have already been made for this capital project.
N/A

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, staffing, etc.)
This is strictly a health and safety requirement. There will be no monetary impact on the Operating Budget.

Public Consultation Requirements:
Please describe the public consultations that are required for this project.
N/A

Timeline and Major Milestones:
Please describe the projected timeline and specific milestones of the project, if applicable.
Installation will depend upon the availability of a local metal fabricator but will likely be completed by the end of August 2024.



Guiderails are required around the Secondary Clarifiers (see arrows)

Capital Budget – Projects

Project Title:	Ozone Upgrades – Plant #1		
Division:	Public Works	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain justification in detail:
All aspects of the existing Ozone Disinfection system must be made redundant to allow disinfection to continue should any individual component of the system fail. Liquid oxygen will backup the oxygen generation system. A second chiller is needed to cool the ozone generators if the primary chiller fails. Vertical baffling will also be installed in the contact chamber. The chamber is currently designed for chlorine and ozone requires vertical baffles to allow the ozone longer contact time the effluent. The project may span 2 years before completion. Start Date: July 2024

Budget Implications

Budget Required:	$400,000
Funding Available:	Sanitary reserve - $400,000
Total Project Cost ($):	$400,000
Total Budget Required ($):	$0

Commitments:
Please describe any commitments that have already been made for this capital project.
N/A

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, staffing, etc.)
The Ozone Disinfection system has an on-site oxygen generator and compressor. Installation of a liquid oxygen system will eliminate the electrical cost to power these components.

The Chiller is needed to cool the high voltage ozone generator stacks. Uncooled generator stacks will overheat and shut down the disinfection system. A backup chiller will ensure continuous operation if the primary chiller fails. Only one of the two chillers will be needed to allow the ozone system to operate. Electricity costs will therefore be status quo.

Public Consultation Requirements:
Please describe the public consultations that are required for this project.
N/A

Timeline and Major Milestones:
Please describe the projected timeline and specific milestones of the project, if applicable.
The chiller and liquid oxygen tank are expected to be installed during the summer of 2024. Both should be operational by September 2024. The baffling in the contact chamber may span into 2025.

Capital Budget – Projects

Project Title:	Sweep Arm – North Secondary Clarifier (Plant #1)		
Division:	Public Works	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain justification in detail:
The steel sweep arm and center column on the North Secondary Clarifier at Plant #1 is badly corroded. Complete replacement is necessary. The sweep arm and column are original equipment from 1968 (55 yrs). Start Date: July 2024.

Budget Implications

Budget Required:	$300,000
Funding Available:	Sanitary Reserve $300,000
Total Project Cost ($):	$300,000
Total Budget Required ($):	$0

Commitments:
Please describe any commitments that have already been made for this capital project.
N/A

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, staffing, etc.)
Replacement will improve the operational efficiency of the clarifier by providing superior clarification and sludge removal.

Public Consultation Requirements:
Please describe the public consultations that are required for this project.
N/A

Timeline and Major Milestones:
Please describe the projected timeline and specific milestones of the project, if applicable.
This item will likely need to be custom made, requiring several months for delivery. Installation will hopefully occur in late summer or early fall, assuming the order can be placed in early 2024.

Capital Budget – Projects

Project Title:	Waste Activated Sludge (WAS) Pump #1 (Plant #1)		
Division:	Public Works Division	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain justification in detail:
Waste Activated Sludge (WAS) flows constantly into the Thickener Wetwell and must be pumped up into the Thickener Tank. The two (2) Thickener Wetwell Lift Pumps have been in continuous use since 2010 (13 years) and need to be replaced. The first pump was replaced in 2023. The second is to be replaced in 2024.

Budget Implications

Budget Required:	$55,000
Funding Available:	Sanitary Reserve $55,000
Total Project Cost ($):	$55,000
Total Budget Required ($):	$0

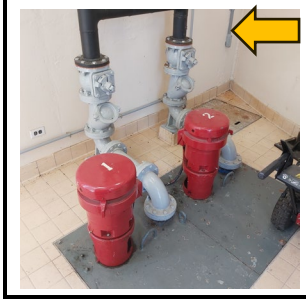
Commitments:
Please describe any commitments N/A

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, staffing, etc.)
A new lift pump will have a higher efficiency than the old unit being replaced. This may save a small amount on electrical usage, but it is unlikely to have any significant impact on the Plant #1 Operating Budget.

Public Consultation Requirements:
N/A

Timeline and Major Milestones:
If pump is ordered early in 2024 it should be installed by July 2024.

Pictures:



Operating Budget Special Projects

Operating Budget – Special Project

Project Title:	Cathodic Protection Replacement – Plant $1		
Division:	Public Works Division	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain in detail:
A low voltage current is passed through a platinum wire, beneath the surface of the Primary and Secondary Clarifiers to prevent corrosion or the submerged steel components. The platinum wires and rectifiers are old and no longer functioning and need to be replaced.

Timeline: Q3 2024

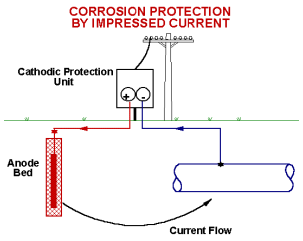
Budget Implications

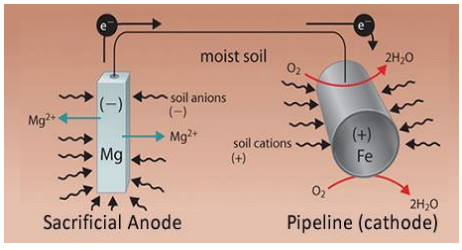
Budget Required:	$75,000
Funding Available:	Sanitary Reserve $75,000
Total Project Cost ($):	$75,000
Total Budget Required ($):	$0

Commitments:
Please describe any commitments that have already been made for this special project.
None

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, etc.)
The cathodic protection at Plant #1 is old and not functioning properly. The lack of cathodic protection has necessitated the excessive use of sacrificial (magnesium) anodes. Repair of the cathodic will reduce the need for these costly anodes and will ultimately decrease the maintenance costs for the clarifiers.

Pictures:





Operating Budget – Special Project

Project Title:	Cathodic Protection Replacement – Plant #2		
Division:	Public Works Division	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain in detail:
A low voltage current is passed through a platinum wire, beneath the surface of the Primary and Secondary Clarifiers to prevent corrosion or the submerged steel components. The platinum wires and rectifiers are old and no longer functioning and need to be replaced.
Timeline: Q3 2024

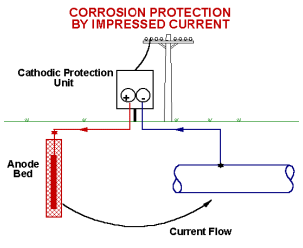
Budget Implications

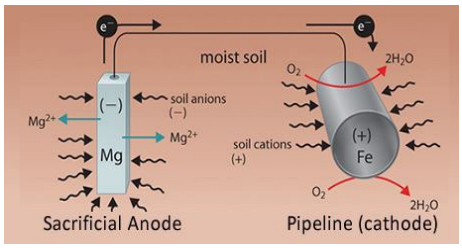
Budget Required:	$75,000
Funding Available:	Sanitary Reserve $75,000
Total Project Cost ($):	$75,000
Total Budget Required ($):	$0

Commitments:
Please describe any commitments that have already been made for this special project.
None

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, etc.)
The cathodic protection at Plant #2 is old and not functioning properly. The lack of cathodic protection has necessitated the excessive use of sacrificial (magnesium) anodes. Repair of the cathodic will reduce the need for these costly anodes and will ultimately decrease the maintenance costs for the clarifiers.

Pictures:





Operating Budget – Special Project

Project Title:	Concrete Repairs (Plant #1)		
Division:	Public Works Division	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain in detail:
The concrete at Plant #1 is quite old. Some was poured in 1947 when the new Plant was first constructed. Most was poured during the 1969 upgrade. The old concrete is cracking and spalling. Repairs are needed to ensure the continued integrity of the tanks and buildings.
Timeline: Summer 2024

Budget Implications

Budget Required:	$30,000
Funding Available:	Sanitary Reserve $30,000
Total Project Cost ($):	$30,000
Total Budget Required ($):	$0

Commitments:
Please describe any commitments that have already been made for this special project.
N/A

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, etc.)
No impact on future Operating Budgets. This is an upkeep job to extend the life of an existing asset.

Pictures:
Please include any pictures or concept images for the special project, if available.




Operating Budget – Special Project

Project Title:	Primary Clarifier Repairs (Plant #1)		
Division:	Public Works Division	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☒ Strategic Plan ☐ Other

Please explain in detail:
Clarifier is 75 years old. Concrete requires significant repairs. Aggregate exposed due to erosion of cement. The V-notch weir are corroded and must be replaced.
Timeline: Summer 2024

Budget Implications

Budget Required:	$75,000
Funding Available:	Sanitary Reserve
Total Project Cost ($):	$75,000
Total Budget Required ($):	$0

Commitments:
Please describe any commitments that have already been made for this special project.
N/A

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, etc.)
No impact on future Operating Budgets. This is an upkeep job to extend the life of an existing asset.

Pictures:
Please include any pictures or concept images for the special project, if available.

Operating Budget – Special Project

Project Title:	Plant #1 Environmental Assessment		
Division:	Public Works Division	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain in detail:
The Town of Cobourg operates two wastewater treatment plants. Plant #1 is located in the west end and Plant #2, the east. In 2015 Plant #2 underwent a Municipal Class Environmental Assessment to determine the best way to adequately expand the plant to accommodate the planned growth within the Cobourg East Community secondary plan. In 2021 the Town conducted a study to determine the remaining reserve capacity of Plant #1 which determined that the reserve capacity is now fully committed and that any future developments would require a plant expansion. The EA will evaluate treatment processes and cost estimates for the expansion.

Timeline: 2024 (deferred from 2023)

Budget Implications

Budget Required:	$150,000
Funding Available:	Sewer Reserve $150,000
Total Project Cost ($):	$150,000
Total Budget Required ($):	0

Commitments:
Please describe any commitments that have already been made for this special project.
NA

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, etc.)
NA

Pictures:
Please include any pictures or concept images for the special project, if available.

Operating Budget – Special Project

Project Title:	Forth/Lakeview and Monks Cove Sanitary Pump Station Environmental Assessment		
Division:	Public Works Division	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain in detail:
The Town of Cobourg operates five sanitary pump stations which underwent facility condition assessments in 2022 in accordance with asset management planning. Understanding that some pump stations are aging and will require major upgrades or replacement in the near future, the Town also conducted a sanitary servicing review of the southwest end of Cobourg in order to ensure that any changes to pump stations would accommodate existing and future development areas. King Street west sanitary sewer has also been budgeted for replacement and is undergoing design work. This sewer connects the southwest end of town to Plant #1 and may also require modifications in elevation depending on the results of the servicing study. The study indicated that the Forth/Lakeview stations and Monk's Cove station are under capacity and in need of replacement. A Municipal Class Environmental Assessment is required when a collection system is proposed to increase in capacity. The EA will evaluate alternative ways to increase capacity, choose a recommended approach and provide cost estimates for implementation.
Timeline: 2024 (deferred from 2023)

Budget Implications

Budget Required:	$50,000
Funding Available:	Sewer Reserve $50,000
Total Project Cost ($):	$50,000
Total Budget Required ($):	0

Commitments:
Please describe any commitments that have already been made for this special project.
NA

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, etc.)
NA

Pictures:
Please include any pictures or concept images for the special project, if available.

Operating Budget – Special Project

Project Title:	Valve Replacement		
Division:	Public Works Division	**Department:**	Environmental Services

Justification Category

☐ Council Request ☐ Organizational Review ☐ Strategic Plan ☒ Other

Please explain in detail:
There are several old plug valves that are 28 years old and are becoming difficult to operate. They need to be replaced with stainless steel knife gate valves that are less prone to failure. The face-to-face measurement of the knife gate valves are much less than the plug valves that they are replacing. Spool pieces will need to be fabricated by a local machine shop and installed to the new valves to fit seamlessly into the piping. The requested cost for valves includes the cost of spool pieces and installation.
Timeline: Q2 -Q3 2024

Budget Implications

Budget Required:	$30,000
Funding Available:	Sanitary Reserve $30,000
Total Project Cost ($):	$30,000
Total Budget Required ($):	$0

Commitments:
Please describe any commitments that have already been made for this special project.
None

Effects on Future Operating Budgets:
Please describe any impacts on future operating budgets (ie. maintenance costs, etc.)
N/A

Pictures: