

The Corporation of the Town of Deep River
REPORT
2024-PW-008

Council Meeting Date: July 16th, 2024
Council Meeting Time: 6:00 PM
Council Meeting Place: Council Chambers

Subject: 2024 Water Main Relining Project
Author: Management Team

RECOMMENDATION(S):

BE IT RESOLVED THAT report number 2024-PW-008 “**2024 Water Main Relining Project**” be received,

THAT Council as per By-law No. 33-2010 (Procurement) 10.1 approves the sole source procurement of this project to M. Sullivan & Son Ltd, in the amount of \$1,178,204.92 (including non-rebate portion of HST)

THAT the total project cost be funded utilizing debenture,

THAT Staff be directed to present a By-Law to enter into an agreement for the Water Main Relining Project with M. Sullivan & Son Ltd., and

THAT Staff be directed to present a By-law to enter into a loan agreement for the debenture.

BACKGROUND:

In 2019, the Town of Deep River successfully completed a water main relining pilot project on Iberville Street. This project used Tomahawk Cleaning Systems to reline the 250 meters of watermain utilizing a technology to restore the pipe to its initial capacity by removing any existing biofilm, scale or tuberculation. An engineered gravel slurry is sucked through the water main while a camera and deflection shield allow the operator to direct the flow, ensuring effective cleaning of the pipe interiors prior to relining. This cleaning technology is critical to ensure high quality adhesion of the re-lining material to the inside of the pipe wall. It must be noted that many of the technologies utilized in the watermain relining industry have had significant adhesion issues and it is therefore the cleaning technology that made this project such a success.

During the project staff members from the Sault St. Marie Public Utility Corporation (PUC) attended the project in hopes of utilizing this technology to address issues with their watermains. Over the ensuing three years Sault St. Marie conducted extensive research and eventually started Watertight Lining Solution (WLS) and purchased licencing for the Tomahawk Cleaning Systems. They combined this technology with new “semi-structural” relining technology that would enable a same day return to service (SDRS) relining process. As demonstrated in our pilot project the SDRS is key in avoiding the estimated 25% cost of a temporary water system as. It must be noted that WLS was developed with a mandate to contract watermain relining services to other municipalities to achieve economies of scale and enable them to address their ongoing watermain issues.

In 2021 Council adopted the ten-year *Water and Wastewater Rate Study (WWRS)* (Attachment 3) that was done by Watson & Associates Economists Ltd. which include a ten-year capital forecast. \$6.235 million was forecast for watermain relining. The WWRS was utilized to develop our five-year water financial plan, *Water Ontario Regulation 453/07 Financial Plan, Town of Deep River (Financial Plan #189-301)* which was submitted to the Ministry of Environment & Climate Control as one of the legislated licensing requirements under the Ontario’s Safe Drinking Water Act, 2002, S. O. 2002, c. 32.

In 2023, Council approved, through the capital budget process, a water main relining project in the amount of \$600,000. Unfortunately, a combination of supply chain challenges and contractor availability delayed this project. WLS does not perform the necessary civil work required for the project, such as excavation, site preparation, water works, and restoration. The challenge was finding a relatively local qualified contractor to complete this essential civil work which would significantly reduce the cost.

Staff continued discussions with WLS throughout the construction off-season, exploring potential solutions to move the project forward. During these discussions, a relationship developed between WLS and M. Sullivan & Son Ltd, a local reputable contractor capable of performing the necessary civil work. WLS and M. Sullivan & Son Ltd have now partnered together to complete relining projects throughout the Renfrew County area.

Through the 2024 capital budget process Council approved a water main relining project in the amount of \$850,000.

By-law No. 33-2010, A By-law to amend By-Law No. 6-88 to adopt a statement of policy with respect to procurement reads;

4.3 Tender Purchases

4.3.1 The Chief Administrative Officer/Clerk and/or Manager shall not order goods or services exceeding \$50,000 without requesting and obtaining sealed tenders for the goods and services unless specifically authorized to do so by a resolution of Council for a particular transaction. At least three (3) sealed tenders must be obtained.

4.3.2 Notwithstanding the above, adherence to this purchasing policy is not required with respect to those items listed below, or to a transaction specifically authorized by resolution of Council to be exempt from his tendering policy.

4.3.2.4 Purchases where there is only one source of supply. In such cases the Chief Administrative Officer/Clerk and/or Manager shall submit an information Report to Council.

ANALYSIS & RATIONALE:

Staff, working with WLS and M. Sullivan & Son Ltd have selected the sections of water main to be relined based on the water discolouration complaints, the number of water main breaks in the area, and the professional opinions of the contractors. See Attachment 2 for detailed project limits.

Discussions with the contractors have led to a larger proposed project this year to capitalize on economies of scale. This factor has resulted in a new proposed plan for relining work to move to a two-year cycle. Staff are now proposing a multi-year water main relining project structured in alternating cycles. The plan involves relining the proposed project limits this year (2024), pausing relining activities in 2025 to focus on planning and necessary upgrades to valves and curb stops, and then resuming relining in 2026. This alternating pattern will continue, with relining work taking place every other year. This approach will allow the town to complete larger sections of relining every two years,

optimizing the project's efficiency and reducing the per-unit cost by undertaking more extensive projects less frequently.

Staff are recommending sole source procurement to M. Sullivan & Son Ltd for the 2024 Water Main Relining Project, with WLS as a subcontractor. This collaboration leverages WLS's best in industry technology for relining and M. Sullivan & Son Ltd's local experience in civil construction. Staff have worked with Jp2g Consulting to confirm that the WLS unit pricing is very competitive compared to market rates for relining which is significantly less than the cost of full replacement rates. This recommendation is consistent with 4.3.2.4 of our Procurement By-law (33-2010).

Furthermore, the new partnership between M. Sullivan & Son Ltd and WLS not only ensures the completion of this year's water main relining project but also leverages the exclusive capabilities of WLS as the only authorized applicator of Resiline 320 in Ontario. This advanced polymer lining used by WLS, offers several key benefits that are critical to the project's success and the overall improvement of water main relining processes. One of the standout features of Resiline 320 is its ability to allow for the same-day return to service of water mains. It must be noted that in order to utilize a SDRS process a precautionary boil water advisory will be required to allow for turn around time of mandatory compliance testing. One of the key pre-construction components of the project will be a public education campaign to ensure that the public understands the reasons for this precautionary boil water advisory in order to minimize negative impacts to the public.

Overall, this recommendation provides for essential capital improvements to the municipal water distribution system consistent with Strategic, Asset and Utility plans in a cost-effective manner. It must also be noted that an update to the WWRS is planned for 2024 which will provide updated capital information along with updated funding assumptions.

OTHER ALTERNATIVES CONSIDERED:

Reducing the scope of the project this year was not recommended due to the loss of economies of scale. Smaller projects will result in higher per-unit pricing, diminishing the overall cost-effectiveness of the relining effort. Additionally, a reduced scope would not adequately address the ongoing water discolouration complaints, and breaks within the project limits.

Postponing the relining to 2025 was also not recommended as significant work has already been completed this year, including the design, planning, and essential infrastructure repairs. Furthermore, as described above, the current volume of water quality issues within the project limits indicates an urgent need for the relining project as planned.

FINANCIAL CONSIDERATONS:

| | |
|--|----------------|
| Total Project Cost (including non-rebate portion of HST) | \$1,178,204.92 |
| Total Approved Capital Budget (2024) | \$850,000 |

This recommendation is to fund the full project through debenture. This strategy is consistent with our WWRS and Asset Management Plan and is therefore relatively supported by our current rates. The use of the word “relative” speaks to the lack of success to date on the “grant success” assumptions in the WWRS (approx. 25%). It must also be noted that no quantifiable scope was included in the WWRS.

The budgeted 2024 amount of \$850,000 was approved to be fully funded through debenture. It should also be noted that \$200,000 of the 2023 project was to be funded through debenture, \$200,000 from reserves and the remaining \$200,000 directly funded through 2023 operations.

The second column in the following table is taken from the approved WWRS.

| | From WWRS | Budgeted |
|-------------------|-------------|-------------|
| 2021 | | |
| 2022 | \$603,000 | |
| 2023 | \$623,000 | \$600,000 |
| 2024 | \$645,000 | \$850,000 |
| 2025 | \$667,000 | |
| 2026 | \$690,000 | |
| 2027 | \$714,000 | |
| 2028 | \$739,000 | |
| 2029 | \$764,000 | |
| 2030 | \$790,000 | |
| Total | \$6,235,000 | \$1,450,000 |
| Balance from WWRS | | \$4,785,000 |

Page 4.6 of the WWRS (Table 4-3 Scenario 2) identifies a total capital spend for water infrastructure of \$9,470,000 with \$6,235,000 of that as watermain relining which represent 66.5% of the total water infrastructure budget. Table 4-3 Scenario 2 also identifies \$2,262,667 of the total to be funded from grants. To date no grant applications have been successful for projects identified in the WWRS. Lastly Table 4-3 Scenario 2 identifies \$2,367,133 to be funded through debenture. This recommendation will be below the proportional amount budgeted in the WWRS for debenture of watermain relining.

STRATEGIC AREAS OF FOCUS:

The recommendations of this report support the following Strategic Pillars and Objectives:

- ***Fit for Purpose Infrastructure***
 - Focus on improvements to our infrastructure
 - Improve water quality and increase available sanitary treatment capacity, enabling growth

CONSULTATIONS:

Watertight Lining Solutions Ltd
M. Sullivan & Son Ltd

ATTACHMENTS:

Attachment 1 – M. Sullivan & Son Ltd Contract

Attachment 2 – 2024 Water Main Relining Project Limits

Attachment 3 – 2021 Water & Waste Water Rate Study



GENERAL CONTRACTORS • CONSTRUCTION MANAGERS
IPD SPECIALISTS • DESIGN BUILDERS • PROJECT MANAGERS

June 19, 2024
Arnprior, Ontario

To: Town of Deep River
100 Deep River Road
PO Box 400
Deep River, Ontario
K0J 1P0

Attn: David McCarthy
Director of Operations
Town of Deep River

Re: Proposal Submission For
Town of Deep River
Water Main Lining Project – 2024

Dear Sir,

Having studied the information provided, and having visited the site, to supply the necessary labour, materials and equipment as required to clean, line and disinfect approximately 885 lineal meters of water main in the Town of Deep River, we quote the sum of \$1,151,700.00.

HST would be additional to the above.

With respect to the above noted quotation, and in addition to this letter, please find attached the following additional supporting information:

- **Copy of our proposal for water main cleaning, lining and disinfection c/w accompanying Key Plan, as prepared by our sub-contractor partner Watertight Lining Solutions Inc.**
- **Copy of our Preliminary Access Pit Plan**
- **Copy of our Preliminary Construction Schedule**
- **Copy of our current Company Insurance Certificate**
- **Copy of our latest WSIB Clearance Certificate**

For your information, we provide the following breakdown of our lump sum price.

| | | |
|----|--|------------|
| 1. | Project management, administration, supervision, co-ordination and logistics | 113,540.86 |
| 2. | Mobilize to site, c/w site services, equipment & facilities | 106,069.85 |
| 3. | Inspection & Testing | 11,103.39 |
| 4. | Engineering & Design services c/w GPR surveys | 42,728.63 |

| | | |
|----|---|------------------|
| 5. | Removal & replacement of 3 hydrants | 41,716.36 |
| 6. | Install & remove 7 access pit trench boxes, c/w excavation, backfill, & cutting & patching of water mains | 289,043.37 |
| 7. | Pipe lining operations | 508,573.35 |
| 8. | Demobilize from site | <u>38,924.19</u> |
| | Total Amount | \$1,151,700.00 |

We feel it relevant enough to note that we have included a number of non-typical cost inclusions for pipe lining work in the pricing that may not have been considered in the original budget, including but not limited to the following:

| | | |
|----|--|-----------------------------|
| 1. | Preparation of construction specifications c/w detail drawings & site engineering support during construction (not including liner design) | 33,357.25 |
| 2. | Errors & Omissions Insurance | 2,500.00 |
| 3. | Project management co-ordination & administration, pre-construction phase, construction phase & project closeout phase, c/w procurement, meetings, scheduling and logistics | 97,042.22 |
| 4. | Ground penetrating radar surveys | 5,124.23 |
| 5. | GC's temporary site facilities, trailers, storage, washrooms, fencing, signage c/w other temporary services & equipment including mobilizing and demobilizing | 24,102.70 |
| 6. | Preparation/granular surfacing of area in Boulton Common/Park as a construction laydown space c/w removal of granular materials upon completion and restoration of disturbed areas with imported topsoil and nursery sod – estimated cost 50'x100' = \$31,204.13 | To be completed by The Town |
| 7. | Costs for removal and replacement of 3 existing hydrants, valves & fittings (hydrants supplied by The Town at no cost to Sullivan – topsoil & grass repairs & maintenance to be completed by The Town – ALG-3, ALG-4 & HIL-2 | 35,917.91 |
| 8. | On-site & laboratory inspection & testing costs for granular and concrete materials | 10,377.00 |
| 9. | Sullivan construction safety and quality control support on site | <u>10,848.00</u> |
| | Total Cost Amounts | \$219,269.31 |

In addition, the above noted pricing includes for lining approximately 885 lineal meters of water main which includes an additional 110 lineal meters (360 LnFt +/-) of water main, over the initial budget information of 775 lineal meters. Our 885 Lm estimate was derived using a measuring wheel during our site visit. If the Town's

estimate of 775 Lm is more accurate, then there could potentially be a savings of \$10k to \$19k for polymer materials depending on the actual size and lengths of water mains to be lined.

Scope of work includes:

- Complete General Contractor services, including but not limited to project management and full time qualified Site Supervisor(s) with on-site safety representation and quality control personnel as required
- Traffic control and public directional signage required to complete construction activities
- Cleaning, lining and disinfection of approximately 885 lineal meters of water main, c/w cutting and patching of pipe at 7 access locations with fittings, valves & other fittings (piping) as required to provide access to the inside of the existing pipes, with the restoration of pipe with new pipe and fittings following successful disinfection
- Preparation of Civil Engineering specifications and standards and construction oversight
- Preparation of Engineered trench box designs for 7 access pits c/w site inspections
- Inspection and testing costs for cast-in-place concrete and granular materials
- Assumes excavated materials are clean (sand materials) and can be used in the excavations as backfill (cover material)
- Assumes The Town can provide a local site for disposal and/or storage of excavated materials for re-use in excavations (topsoil, sand, asphalt, concrete etc.), at no cost
- Removal of 3 existing Hydrants (ALG-3, ALG-4 & HIL-2), and replacement with new including but not limited to a new main tee, spool pieces, valves, boxes, pipe, fittings, restraints, 2 concrete thrust blocks and a concrete valve saddle if required (new hydrants supplied by The Town)
- Restoration of all disturbed hard surfaces including asphalt pavement and concrete curbs/gutters

Not Included:

- Construction contingency - examples might include unforeseen site conditions, requirement for additional access pits and pipe lining days required as a result of existing pipe alignment, location of existing underground services or other features
- Standby forces, for supply, installation & removal of emergency bypass systems if required (LME to be provided by Owner's representative OCWA) – Sullivan would assist with any civil requirements
- Public notifications and schedule communication with stakeholders (Owners)
- Bonding (available if required)
- Winter conditions
- Rock excavation (no borehole data available)
- Dewatering due to unexpected existing ground high-water tables (no borehole data available)
- Tree, stump and brush removal as required
- Re-instatement of disturbed trees and/or shrubs
- Repairs to disturbed topsoil and grass areas
- Maintenance of re-instated grass/sodded areas – cutting & watering
- Contingency pit(s) required as a result of existing water main configurations

Facilities, services and/or materials to be provided by The Town of Deep River at no cost to Sullivan:

- Secure laydown space for Sullivan forces located at The Town Yard (1 Cedar Road), with space enough for construction site trailer, equipment & materials storage
- Power source for site construction trailer in Town yard
- Repairs to disturbed topsoil and grass areas of Boulton Commons Park as a result of materials or equipment storage and management during construction work
- Topsoil & grass repairs required as a result of access pit installations and removals and/or pipe-lining operations and equipment
- Supply only of required imported backfill materials including ¾" clear stone, granular A, and granular B
- Restoration of all disturbed topsoil and grass areas required as a result of access pit installations and removals and/or pipe-lining operations and equipment

Assumptions:

- Assumes on day of pipe-lining operations, The Town will have water mains isolated by 7am
- Assumes The Town will perform in-service (pressure) testing of the 3 new hydrant installations
- Assumes The Town will perform hydrant flow tests on the 3 new hydrants
- Assumes a standard CCDC-2 with a lump sum price would be acceptable as a contract document
- Assumes building permit fees will be waived
- Assumes trench boxes and concrete thrust blocks can be pre-fabricated in advance, off site, and mobilized to site when required
- Assumes water sample results (taken by Town forces) can be received within 72 hours of sampling
- Assumes The Town will provide bottled water to residents the days on which lining operations are taking place

Sullivan all-Inclusive rates for additional work if required:

Sullivan Staffing:

| | | |
|-------------------------|----------|------|
| Project Manager | \$130.00 | / Hr |
| Project Superintendent | \$122.00 | / Hr |
| Site Safety Coordinator | \$98.00 | / Hr |
| Site Quality Manager | \$78.00 | / Hr |
| Civil Foreman | \$105.00 | / Hr |
| Carpenter | \$90.25 | / Hr |
| Operator | \$95.00 | / Hr |
| Skilled Labourer | \$77.65 | / Hr |

Sullivan Equipment:

| | | |
|---------------------------|----------|------|
| Track excavator – no Op. | \$132.36 | / Hr |
| Skidsteer loader – no Op. | \$62.75 | / Hr |
| Tractor, float & driver | \$230.00 | / Hr |
| Tilt n Load c/w driver | \$195.00 | / Hr |

| | | |
|----------------------|----------|--------|
| Generator | \$400.00 | / Week |
| Compaction equipment | \$51.75 | / Hr |
| Loader – no Op. | \$163.45 | / Hr |

| | |
|-------------------------------------|------------------------|
| Sullivan purchased materials | - Cost plus 10% markup |
| Sullivan rented equipment | - Cost plus 15% markup |
| Sub-contractors | - Cost plus 7% markup |

We thank you for the opportunity of submitting this proposal, and ask you to please contact the undersigned should you have any questions or require any additional information.

Yours truly,



André Roy
Director of Pursuit

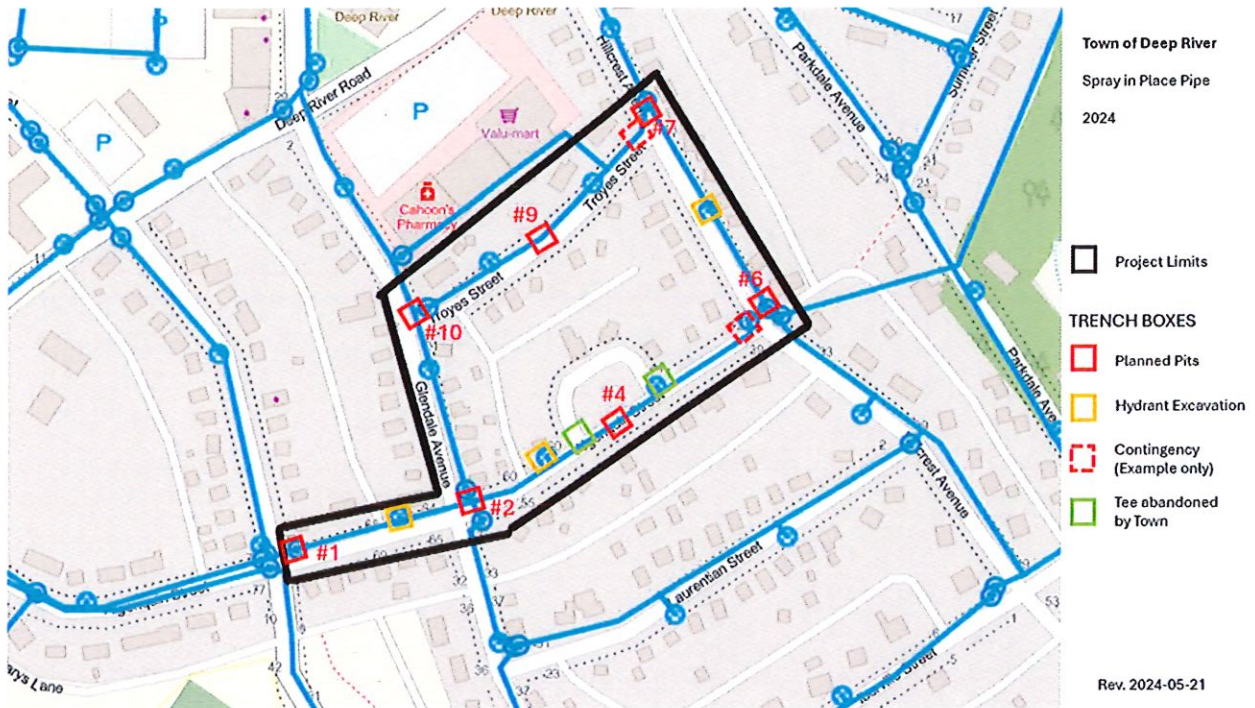
June 13, 2024

Hugh MacMaster
Vice President, Estimating
M. Sullivan & Son Limited
236 Madawaska Blvd
Suite 100
Arnprior, Ontario
K7S 0A3

Dear Mr. MacMaster

RE: Deep River 2024 Watermain Lining by SIPP

Please accept the following as our proposal to Sullivan to clean, line and disinfect some 885 meters of watermain in the town of Deep River. The subject watermains are referenced in the accompanying key plan. The watermains are also described in Table 1 which includes the proposed lining thickness.



Key Plan

We have summarized information concerning the watermain in the Table 1 as provided by the Town, and as approximated by pit locations contemplated during our site visit with you on May 15, 2024.

Table 1.

| Deep River Sections | From | To | Length (m) | Diameter (mm) | Thickness (mm) |
|---|-------|--------|------------|---------------|----------------|
| Section 1-2 Algonquin East of Summit | Pit 1 | Pit 2 | 134.5 | 200 | 4 |
| Section 2-4 Algonquin East of Glendale | Pit 2 | Pit 4 | 113 | 200 | 4 |
| Section 4-6 Algonquin West of Hillcrest | Pit 4 | Pit 6 | 113 | 200 | 4 |
| Section 6-7 Hillcrest | Pit 6 | Pit 7 | 150 | 200 | 4 |
| Section 7-9 Troyes W of Hillcrest | Pit 7 | Pit 9 | 100 | 150 | 3 |
| Section 9-10 Troyes E of Glendale | Pit 9 | Pit 10 | 95 | 150 | 3 |
| Section 2-10 Glendale | Pit 2 | Pit 10 | 120 | 200 | 4 |

Watertight's price proposal has been determined on a time and materials basis based on information in Table 1 and various assumptions listed below.

- 1) Watertight has allowed one day for each lining section and assumes we will be able to line on consecutive days excepting for weekends/holidays. We assume each lining section will be turned over to Watertight by 9 am on the day it is to be lined, with caps removed and the pipe de-watered. We further assume that customer connections will be fully closed and that no backflow will occur. Costs of delays due to leaking services will be subject to hourly billing. We have advised the Town of the importance of checking and replacing defective shut offs. Watertight also assumes the pipe is in a condition fit to be lined. Should a significant defect be observed, subject to approval of additional charges, Watertight will, where practical, make a spot repair from inside the pipe using a Quiklock repair sleeve. Alternatively, excavation may be required to be done by others and the Owner's expense.
- 2) Section length, diameter and lining thickness will have bearing on Watertight's material costs. Materials were estimated based on pipe dimensions and lining thicknesses in Table 1. Actual billing will be based on quantities of material used. Lengths shown in Table 1 are inclusive of access pits. Watertight will charge only for lengths of pipe lined, and lengths in table 1 will be adjusted based on sections removed in access pits and actual pit locations.
- 3) The Owner has not provided a lining thickness specification. Watertight's price includes an allowance for engineering services pertaining to liner design. Watertight's price is based on a preliminary determination of lining thickness provided by E-Trenchless Group (Dr. Mark Knight, P.Eng.). Actual cost will be subject to the amount of lining polymer required. Polymer will be billed at \$58 per liter.

- 4) Watertight assumes there are no pipe deflections within each section that exceed 12.5 degrees. Watertight is not responsible for costs for delay or extra work required to excavate pits for un-anticipated pipe deflections.
- 5) Watertight has assumed a vacuum excavation truck capable of 6,000 cfm at -28 in Hg will be provided by others at their cost. The truck must not be used for septic / sewerage. Hoses, connectors and the truck shall be cleaned prior to attending the site. Watertight normally requires the vacuum excavation truck for ½ day per section cleaned.
- 6) Watertight has assumed that all civil works including but not limited to traffic protection, excavation and site restoration, trench box installation, thrust restraint, bracing and shoring will be provided by others, and will include associated engineering services.
- 7) Watertight has assumed that all pipe fitting will be carried out by others.
- 8) Watertight assumes that the Owner will remove valve and appurtenances from within hydrants as needed for disinfection, when required.
- 9) Watertight recommends that the Owner have a contingency plan in place that includes sufficient temporary watermain and service connection for servicing the homes in one Section.
- 10) In the event the trench box is deemed a confined space, Watertight assumes rescue equipment will be provided by others.

Should there be difficulty meeting the Town's budgetary requirements and in the event a reduction in scope is proposed, please contact me at your earliest convenience and we will make every effort to ensure we are able to proceed with the project. We observe that some tasks that are frequently undertaken by waterworks owners have been passed on to Sullivan and Watertight. We would be happy to assist Sullivan in explaining some of these costs to the Town.

Thank you for your interest in working with Watertight and we look forward to this and future projects with Sullivan.

Sincerely,



Andrew Hallett, P.Eng.
VP Operations, Watertight Lining Solutions

c. R. Brewer, President,
J. McLean, Vice President

Watertight Lining Proposal – Deep River, 2024

| | Item | Qty | Unit | \$/Unit | Item Price |
|---|---|-----|------|-----------|------------------|
| Part A | Labour & Equipment | | | | |
| A.1 | WLS Day Rate – Labour and Equipment Up to 10 hours. Scope – Clean, Line and disinfect one Section as per Table 1. | 7 | day | \$39,289 | \$275,023 |
| | | | | | |
| Part B | Materials | | | | |
| B.1 | Section 1-2 Algonquin East of Summit | 1 | Ea. | \$ 23,118 | \$23,118 |
| B.2 | Section 2-4 Algonquin East of Glendale | 1 | Ea. | \$19,422 | \$19,422 |
| B.3 | Section 4-6 Algonquin West of Hillcrest | 1 | Ea. | \$19,422 | \$19,422 |
| B.4 | Section 6-7 Hillcrest | 1 | Ea. | \$25,782 | \$25,782 |
| B.5 | Section 7-9 Troyes W of Hillcrest | 1 | Ea. | \$9,844 | \$9,844 |
| B.6 | Section 9-10 Troyes E of Glendale | 1 | Ea. | \$9,352 | \$9,352 |
| B.7 | Section 2-10 Glendale | 1 | Ea. | \$20,626 | \$20,626 |
| | | | | | |
| Part C | Mob - Demob | | | | |
| C.1 | Mobilization and Demobilization between Sault Ste. Marie and Deep River | | | \$25,000 | \$25,000 |
| | | | | | |
| Part D | Disbursements | | | | |
| D.1 | E-Trenchless Group (Dr. Mark Knight) Deliverable: consult, site visit, sealed engineer’s design brief for liner design. | 1 | ea | \$12,500 | \$12,500 |
| | | | | | |
| Grand Total, taxes not included: | | | | | \$457,189 |
| | | | | | |
| Part E | Provisional Items | | | | |
| | WLS Standby Day | | day | \$11,187 | |
| | WLS Hourly (up to 3 hours max per day) Eg. Repair sleeve, delays | | hr | \$1,119 | |
| | WLS Overtime Rate (eg., 5 th day of week) | | hr | \$1,687 | |
| | WLS Overtime Rate (Stat holiday) | | hr | \$2,237 | |
| | Supply & Install internal repair sleeve Estimate only, time & material (8” dia.) | | ea | \$3,500 | |

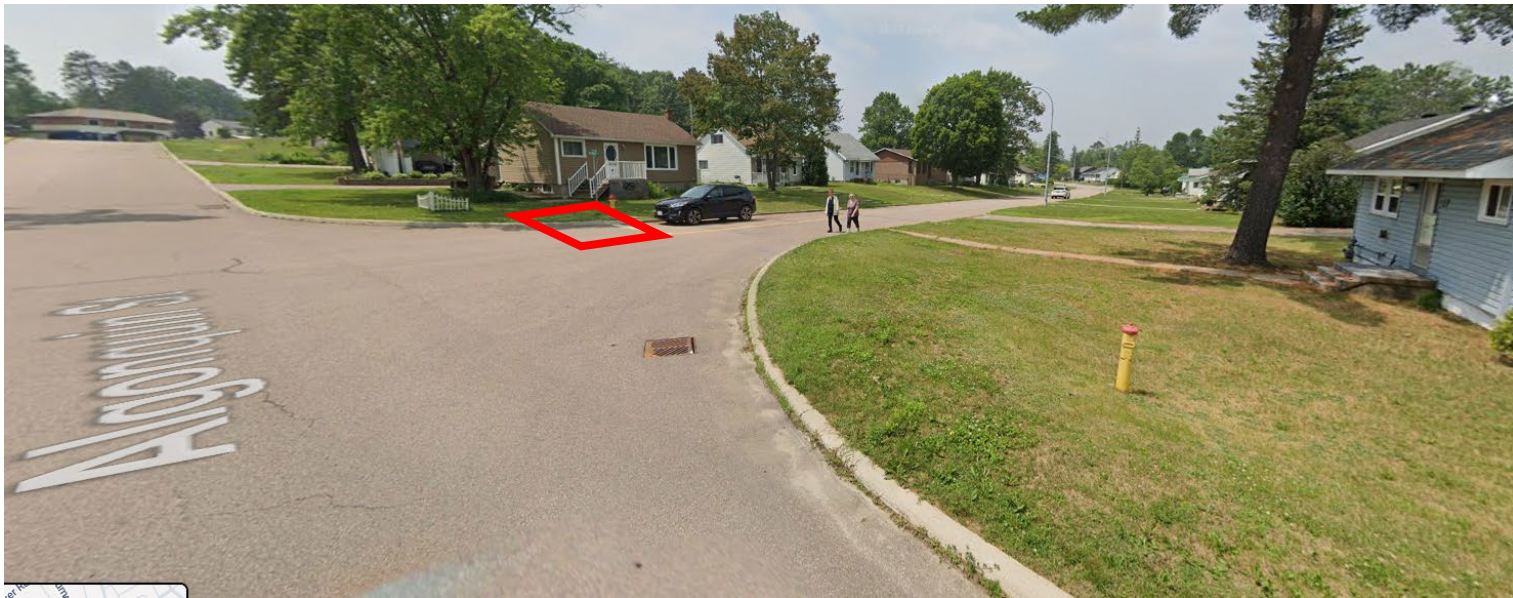
Town of Deep River

Spray in Place Pipe

2024

ACCESS PITS

| | |
|---------------------------------------|--|
| Pit 1 - Algonquin on E side of Summit | Close valve on Summit at Deep River Road, Close valve on Algonquin E of summit, cut and cap both with corp stop, and join with 2" bleeder, re-open valves, thrust block 2 sides. |
| Pit 2 - Algonquin at Glendale | Close valve on Glendale South of Algonquin, Close valve on Algonquin E of Summit, Close valve on Glendale at Deep River Road, Close valve on algonquin west of hillcrest. Cut and cap 4 sides with corp stop & bleeder. Thrust blocks 3 sides - NOT Glendale south of Algonquin due to distance. Connect jumpers and re-open valves. |
| Pit 4 - between Algonquin Cres | Close Algonquin West of Hillcrest and Close Glendale North and South of Algonquin and close Algonquin at Summit. Install 2 caps and corp stops and jumpers / bleeders and thrust 2 ways. Open valves. |
| Pit 6 - Algonquin at Hillcrest | Close valve on Algonquin west of Hillcrest, close Laurentian at Hillcrest and Hillcrest North of Iberville. Close Troyes at Hillcrest and close Hillcrest at Parkdale. Install 3 caps, corp stops and bleeders, jumpers and thrust 3 ways. Open all valves. |
| Pit 7 - Troyes at Hillcrest | close valves on Troyes west of Hillcrest, close hillcrest at Parkdale and close Hillcrest valves south of Algonquin and close algonquin north of hillcrest. Cap and corp stop, bleeders, jumps and thrust blocks - 3ways. Open all valves. |
| Pit 9 - Troyes - bend mid - block | Close valve each end of troy, install caps and corp stops, bleeders & jumpers. Thrust block both sides. Re-open valves |
| Pit 10 - Troyes at Glendale | Close Glendale at Algonquin, Close Troyes at Hillcrest, Close Glendale at Deep River Road. Cut and cap all 3 legs, with corp stop and bleeders / jumpers. Thrust block 3 legs. Re-open valves. |



Town of Deep River

Spray in Place Pipe

2024

ACCESS PITS



PIT #1

Algonquin Street

&

Summit Street

at

Civic 26 Summit St

Notes:

Not to Scale.

Use locates / GPR to situate trench boxes

Bend geometry unknown at Summit & Algonquin. Drawings show a capped tee. OCWA suggests 2x 45° bends.

Notify Town & Fire Department prior to removing hydrant from service

Notify Town & Fire Department prior to reducing water supply to hydrant



Town of Deep River

Spray in Place Pipe

2024

ACCESS PITS



PIT #2

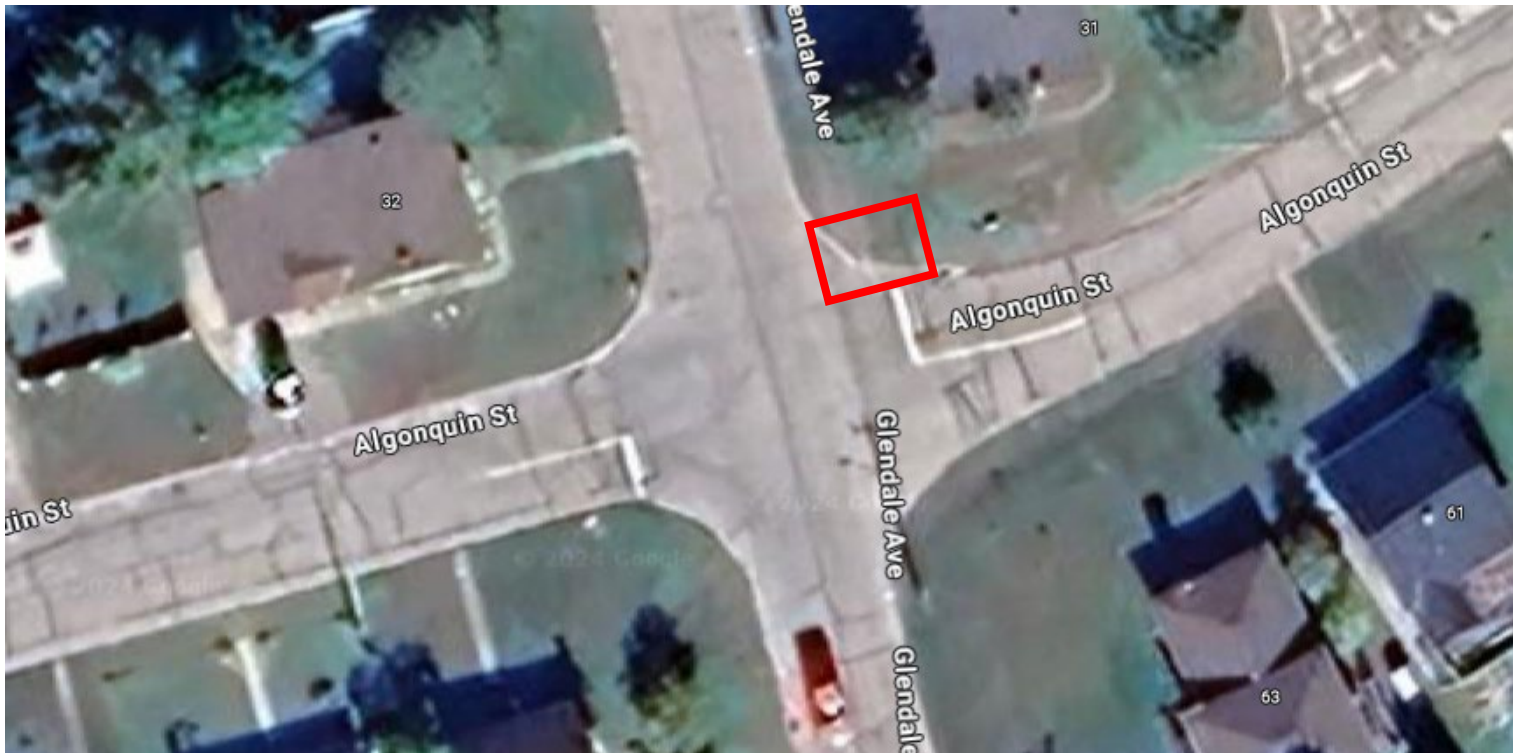
Algonquin Street

&

Glendale

at

Civic 31 Glendale Ave



Notes:

Not to Scale.

Use locates/GPR situate trench boxes

Notify Town & Fire Department prior to removing hydrant from service

Notify Town & Fire Department prior to reducing water supply to hydrant

Town of Deep River

Spray in Place Pipe

2024

ACCESS PITS



PIT #4

Boulton Common

Algonquin Street

Opposite

Civic 49 / 51 Algonquin

Notes:

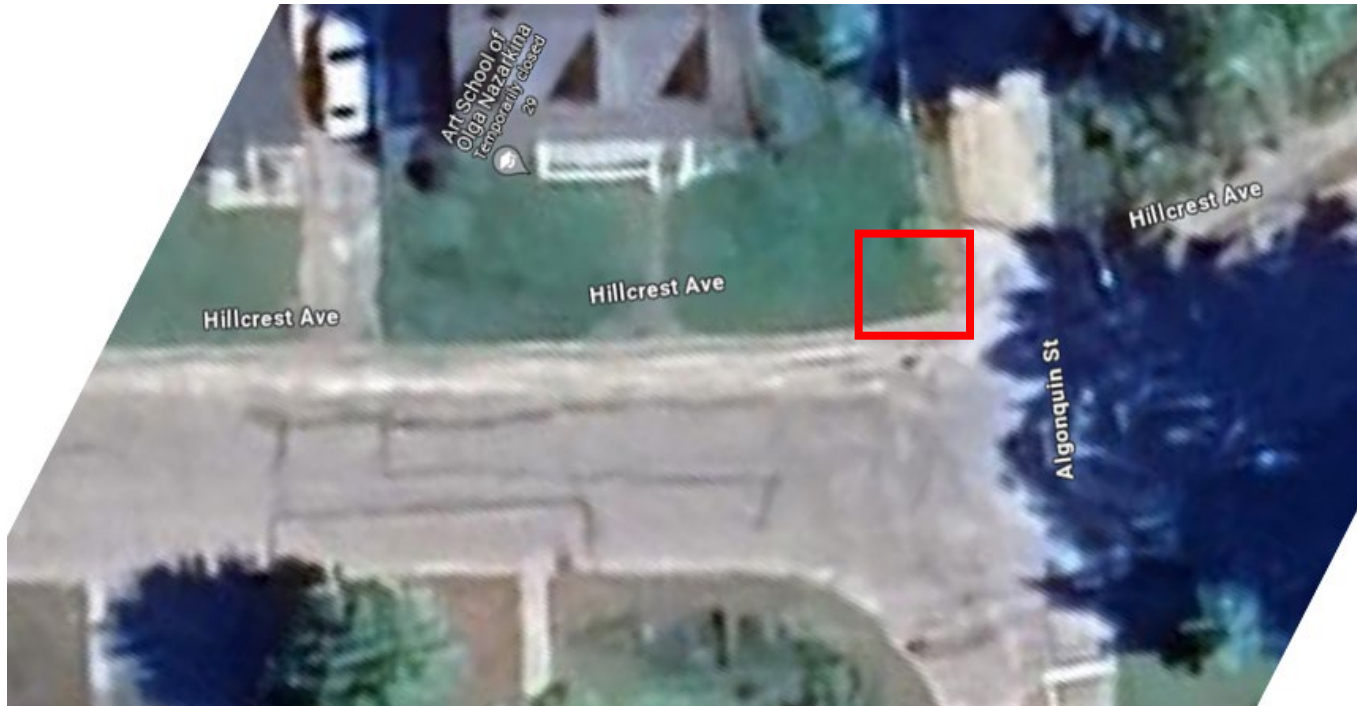
Not to Scale.

Use locates / GPR to situate trench boxes

Notify Town & Fire Department prior to removing hydrant from service

Notify Town & Fire Department prior to reducing water supply to hydrant





Town of Deep River

Spray in Place Pipe

2024

ACCESS PITS

 PIT #6

Algonquin Street

At

Hillcrest

Beside civic 29 Hillcrest

Notes:

Not to Scale.

Use locates / GPR to situate trench boxes

Notify Town & Fire Department prior to removing hydrant from service

Notify Town & Fire Department prior to reducing water supply to hydrant



Town of Deep River

Spray in Place Pipe

2024

ACCESS PITS

 PIT #7

Troyes

At

Hillcrest

Civic 11 Hillcrest

Notes:

Not to Scale.

Use locates / GPR to situate trench boxes

Bend geometry unknown at Troyes & Hillcrest. Drawing show a tee. GIS shows several fittings.

Notify Town & Fire Department prior to removing hydrant from service

Notify Town & Fire Department prior to reducing water supply to hydrant

Town of Deep River

Spray in Place Pipe

2024

ACCESS PITS

 PIT #9

Troyes

At

Bend, mid-block

Civic 11 Troyes

Notes:

Not to Scale.

Bend geometry unknown at Troyes

Use locates / GPR to situate trench boxes

Notify Town & Fire Department prior to removing hydrant from service

Notify Town & Fire Department prior to reducing water supply to hydrant



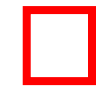


Town of Deep River

Spray in Place Pipe

2024

ACCESS PITS



PIT #10

Troyes

At

Glendale

Opposite civic 18 Glendale

Notes:

Not to Scale.

Bend geometry unknown at Troyes

Use locates / GPR to situate trench boxes

Notify Town & Fire Department prior to removing hydrant from service

Notify Town & Fire Department prior to reducing water supply to hydrant

| ID | Name | At Completion Duration | Start | Finish | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|------------------------|-----------|-----------|--|----|----|----|------|----|----|----|------|----|----|----|--------|----|----|----|-----------|----|----|----|---------|----|----|----|----|----|--|--|
| | | | | | May | | | | June | | | | July | | | | August | | | | September | | | | October | | | | | | | |
| | | | | | 05 | 12 | 19 | 26 | 02 | 09 | 16 | 23 | 30 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | 01 | 08 | 15 | 22 | 29 | 06 | 13 | 20 | 27 | | |
| Town of Deep River- Water Main Lining | | | | | 92d 24-Jun-10 24-Oct-21 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Milestones | | | | | 8d 24-Jun-10 24-Jun-19 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1000 | Sullivan Submits Proposal To The Town - Week of June 10, 2024 | 5d | 24-Jun-10 | 24-Jun-14 | Week of June 10, 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1010 | Town's Review of Proposal | 3d | 24-Jun-17 | 24-Jun-19 | Town's Review of Proposal | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1020 | Town Issues Notice to Proceed - June 19th, 2024 | 1d | 24-Jun-19 | 24-Jun-19 | Town Issues Notice to Proceed - June 19th, 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phase 1 Pre Construction | | | | | 27d 24-Jun-20 24-Jul-29 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1040 | Sullivan Places Order For The Goods - June 20th | 7d | 24-Jun-20 | 24-Jun-28 | Sullivan Places Order For The Goods - June 20th | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1050 | Assignment of Resources | 7d | 24-Jun-20 | 24-Jun-28 | Assignment of Resources | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1060 | Preparation & Submission of Pre-Construction Deliverables | 20d | 24-Jun-24 | 24-Jul-22 | Preparation & Submission of Pre-Construction Deliverables | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1070 | Materials Procurement | 25d | 24-Jun-24 | 24-Jul-29 | Materials Procurement | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1090 | GPR Survey # 1 | 5d | 24-Jul-02 | 24-Jul-08 | GPR Survey # 1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1100 | Trench Box Designs | 20d | 24-Jul-02 | 24-Jul-29 | Trench Box Designs | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1080 | Town's Review & Return of Pre-Construction Deliverables | 15d | 24-Jul-08 | 24-Jul-26 | Town's Review & Return of Pre-Construction Deliverables | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1850 | GPR Survey #2 | 5d | 24-Jul-22 | 24-Jul-26 | GPR Survey #2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phase 2 Construction | | | | | 48d 24-Jul-15 24-Sep-20 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mobilization | | | | | 15d 24-Jul-15 24-Aug-02 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1120 | Prefabricate Thrust Blocks - In Arnprior | 5d | 24-Jul-15 | 24-Jul-19 | Prefabricate Thrust Blocks - In Arnprior | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1130 | Prefabricate Trench Box Frames in Arnprior | 10d | 24-Jul-15 | 24-Jul-26 | Prefabricate Trench Box Frames in Arnprior | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1140 | Move on Lot | 1d | 24-Jul-29 | 24-Jul-29 | Move on Lot | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1150 | Set Up Construction Plant & Laydown Area(s) | 5d | 24-Jul-29 | 24-Aug-02 | Set Up Construction Plant & Laydown Area(s) | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hydrant Replacements | | | | | 7d 24-Jul-31 24-Aug-09 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1170 | Replace ALG-4 Hydrant, Tee, Lead & Valve | 3d | 24-Jul-31 | 24-Aug-02 | Replace ALG-4 Hydrant, Tee, Lead & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1180 | Replace ALG-3 Hydrant, Tee, Lead & Valve | 2d | 24-Aug-06 | 24-Aug-07 | Replace ALG-3 Hydrant, Tee, Lead & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1190 | Replace HIL-2 Hydrant, Tee, Lead & Valve | 3d | 24-Aug-07 | 24-Aug-09 | Replace HIL-2 Hydrant, Tee, Lead & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pit Installation & Removals | | | | | 18d 24-Aug-12 24-Sep-05 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1210 | Install Pit #1 - Algonquin at Summit | 2d | 24-Aug-12 | 24-Aug-13 | Install Pit #1 - Algonquin at Summit | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1220 | Install Pit #2 - Algonquin at Glendale | 2d | 24-Aug-12 | 24-Aug-13 | Install Pit #2 - Algonquin at Glendale | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1230 | Install Pit #3 - Algonquin at Boulton Common | 2d | 24-Aug-14 | 24-Aug-15 | Install Pit #3 - Algonquin at Boulton Common | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1240 | Install Pit #4 - Algonquin at Hillcrest | 2d | 24-Aug-14 | 24-Aug-15 | Install Pit #4 - Algonquin at Hillcrest | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1250 | Install Pit #5 - Hillcrest at Troyes | 2d | 24-Aug-16 | 24-Aug-19 | Install Pit #5 - Hillcrest at Troyes | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1260 | Install Pit #6 - Troyes - mid Point | 2d | 24-Aug-16 | 24-Aug-19 | Install Pit #6 - Troyes - mid Point | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1270 | Install Pit #7 - Troyes at Glendale | 2d | 24-Aug-20 | 24-Aug-21 | Install Pit #7 - Troyes at Glendale | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1280 | Watertight Lining Solutions Mobilizes To Site | 2d | 24-Aug-22 | 24-Aug-23 | Watertight Lining Solutions Mobilizes To Site | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1290 | Pit #1 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | 1d | 24-Aug-23 | 24-Aug-23 | Pit #1 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1300 | Pit #2 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | 1d | 24-Aug-23 | 24-Aug-23 | Pit #2 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1310 | WLS Lines Pipe Section #1 | 1d | 24-Aug-26 | 24-Aug-26 | WLS Lines Pipe Section #1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1320 | Pit #1 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Aug-26 | 24-Aug-26 | Pit #1 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| ID | Name | At Completion Duration | Start | Finish | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----------|--|------------------------|-----------|-----------|--|----|----|----|------|----|----|----|------|----|----|----|--------|----|----|----|-----------|----|----|----|---------|----|----|----|----|----|--|--|
| | | | | | May | | | | June | | | | July | | | | August | | | | September | | | | October | | | | N | | | |
| | | | | | 05 | 12 | 19 | 26 | 02 | 09 | 16 | 23 | 30 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | 01 | 08 | 15 | 22 | 29 | 06 | 13 | 20 | 27 | | |
| A1330 | Pit #2 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Aug-26 | 24-Aug-26 | Pit #2 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1340 | Pit #2 - Remove End Caps, T/B's, Bleeder & Valve | 1d | 24-Aug-26 | 24-Aug-26 | Pit #2 - Remove End Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1350 | Pit #3 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | 1d | 24-Aug-26 | 24-Aug-26 | Pit #3 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1360 | WLS Lines Pipe Section #2 | 1d | 24-Aug-27 | 24-Aug-27 | WLS Lines Pipe Section #2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1370 | Pit #2 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Aug-27 | 24-Aug-27 | Pit #2 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1380 | Pit #3 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Aug-27 | 24-Aug-27 | Pit #3 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1390 | Pit #3 - Remove End Caps, T/B's, Bleeder & Valve | 1d | 24-Aug-27 | 24-Aug-27 | Pit #3 - Remove End Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1400 | Pit #4 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | 1d | 24-Aug-27 | 24-Aug-27 | Pit #4 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1410 | WLS Lines Pipe Section #3 | 1d | 24-Aug-28 | 24-Aug-28 | WLS Lines Pipe Section #3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1420 | Pit #3 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Aug-28 | 24-Aug-28 | Pit #3 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1430 | Pit #4 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Aug-28 | 24-Aug-28 | Pit #4 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1440 | Pit #4 - Remove End Caps, T/B's, Bleeder & Valve | 1d | 24-Aug-28 | 24-Aug-28 | Pit #4 - Remove End Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1450 | Pit #5 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | 1d | 24-Aug-28 | 24-Aug-28 | Pit #5 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1460 | WLS Lines Pipe Section #4 | 1d | 24-Aug-29 | 24-Aug-29 | WLS Lines Pipe Section #4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1470 | Pit #4 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Aug-29 | 24-Aug-29 | Pit #4 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1480 | Pit #5 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Aug-29 | 24-Aug-29 | Pit #5 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1490 | Pit #5 - Remove End Caps, T/B's, Bleeder & Valve | 1d | 24-Aug-29 | 24-Aug-29 | Pit #5 - Remove End Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1500 | Pit #6 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | 1d | 24-Aug-29 | 24-Aug-29 | Pit #6 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1510 | WLS Lines Pipe Section #5 | 1d | 24-Aug-30 | 24-Aug-30 | WLS Lines Pipe Section #5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1520 | Pit #5 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Aug-30 | 24-Aug-30 | Pit #5 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1530 | Pit #6 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Aug-30 | 24-Aug-30 | Pit #6 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1540 | Pit #6 - Remove End Caps, T/B's, Bleeder & Valve | 1d | 24-Aug-30 | 24-Aug-30 | Pit #6 - Remove End Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1550 | Pit #7 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | 1d | 24-Aug-30 | 24-Aug-30 | Pit #7 - Cut Pipe, Install Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1560 | WLS Lines Pipe Section #6 | 1d | 24-Sep-03 | 24-Sep-03 | WLS Lines Pipe Section #6 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1570 | Pit #6 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Sep-03 | 24-Sep-03 | Pit #6 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1580 | Pit #7 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Sep-03 | 24-Sep-03 | Pit #7 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1590 | Pit #7 - Remove End Caps, T/B's, Bleeder & Valve | 1d | 24-Sep-03 | 24-Sep-03 | Pit #7 - Remove End Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1600 | Pit #2 - Remove End Caps, T/B's, Bleeder & Valve | 1d | 24-Sep-03 | 24-Sep-03 | Pit #2 - Remove End Caps, T/B's, Bleeder & Valve | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1610 | WLS Lines Pipe Section #7 | 1d | 24-Sep-04 | 24-Sep-04 | WLS Lines Pipe Section #7 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1620 | Pit #6 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Sep-04 | 24-Sep-04 | Pit #6 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1630 | Pit #2 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | 1d | 24-Sep-04 | 24-Sep-04 | Pit #2 - Install End Caps c/w T/B's, 2" Jumpers & Backflow Preventer | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1640 | WLS Demobilizes From Site | 1d | 24-Sep-05 | 24-Sep-05 | WLS Demobilizes From Site | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Reinstate | | 12d | 24-Sep-04 | 24-Sep-19 | Reinstate | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1650 | Reinstate Pipe & Backfill Pit #4 - Algonquin at Hillcrest | 1d | 24-Sep-04 | 24-Sep-04 | Reinstate Pipe & Backfill Pit #4 - Algonquin at Hillcrest | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1660 | Reinstate Pipe & Backfill Pit #5 - Hillcrest at Troyes | 2d | 24-Sep-04 | 24-Sep-05 | Reinstate Pipe & Backfill Pit #5 - Hillcrest at Troyes | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1670 | Reinstate Pipe & Backfill Pit #6 - Troyes - md Point | 2d | 24-Sep-05 | 24-Sep-06 | Reinstate Pipe & Backfill Pit #6 - Troyes - md Point | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1680 | Reinstate Pipe & Backfill Pit #7 - Troyes at Glendale | 2d | 24-Sep-05 | 24-Sep-06 | Reinstate Pipe & Backfill Pit #7 - Troyes at Glendale | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| ID | Name | At Completion Duration | Start | Finish | 2024 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|--|------------------------|-----------|-----------|--|----|----|----|------|----|----|----|------|----|----|----|--------|----|----|----|-----------|----|----|----|---------|----|----|----|----|----|--|--|
| | | | | | May | | | | June | | | | July | | | | August | | | | September | | | | October | | | | N | | | |
| | | | | | 05 | 12 | 19 | 26 | 02 | 09 | 16 | 23 | 30 | 07 | 14 | 21 | 28 | 04 | 11 | 18 | 25 | 01 | 08 | 15 | 22 | 29 | 06 | 13 | 20 | 27 | | |
| A1690 | Re-Instate Pipe & Backfill Pit #1 - Algonquin at Summit | 1d | 24-Sep-09 | 24-Sep-09 | Re-Instate Pipe & Backfill Pit #1 - Algonquin at Summit | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1700 | Reinstate Pipe & Backfill Pit #2 - Algonquin at Glendale | 1d | 24-Sep-09 | 24-Sep-09 | Reinstate Pipe & Backfill Pit #2 - Algonquin at Glendale | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1710 | Reinstate Pipe & Backfill Pit #3 - Algonquin at Boulton Common | 1d | 24-Sep-10 | 24-Sep-10 | Reinstate Pipe & Backfill Pit #3 - Algonquin at Boulton Common | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1720 | Re-Instate Concrete Curbs | 3d | 24-Sep-10 | 24-Sep-12 | Re-Instate Concrete Curbs ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1730 | Re-Instate Asphalt Paving | 1d | 24-Sep-16 | 24-Sep-16 | Re-Instate Asphalt Paving | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1740 | Reinstate Surfaces at Pit #1 | 1d | 24-Sep-16 | 24-Sep-16 | Reinstate Surfaces at Pit #1 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1750 | Reinstate Surfaces at Pit #2 | 1d | 24-Sep-16 | 24-Sep-16 | Reinstate Surfaces at Pit #2 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1760 | Reinstate Surfaces at Pit #3 | 1d | 24-Sep-17 | 24-Sep-17 | Reinstate Surfaces at Pit #3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1770 | Reinstate Surfaces at Pit #4 | 1d | 24-Sep-17 | 24-Sep-17 | Reinstate Surfaces at Pit #4 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1780 | Reinstate Surfaces at Pit #5 | 1d | 24-Sep-18 | 24-Sep-18 | Reinstate Surfaces at Pit #5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1790 | Reinstate Surfaces at Pit #6 | 1d | 24-Sep-18 | 24-Sep-18 | Reinstate Surfaces at Pit #6 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1800 | Reinstate Surfaces at Pit #7 | 1d | 24-Sep-19 | 24-Sep-19 | Reinstate Surfaces at Pit #7 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Demobilization | | 5d | 24-Sep-16 | 24-Sep-20 | Demobilization ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1810 | Re-Instate Park Laydown Areas | 5d | 24-Sep-16 | 24-Sep-20 | Re-Instate Park Laydown Areas ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1820 | Demobilize from Site | 3d | 24-Sep-18 | 24-Sep-20 | Demobilize from Site ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Phase 3 Post Construction | | 20d | 24-Sep-23 | 24-Oct-21 | Phase 3 Post Construction ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A1840 | Assemble & Turn Over Post Construction Deliverables | 20d | 24-Sep-23 | 24-Oct-21 | Assemble & Turn Over Post Construction Deliverables ■ | | | | | | | | | | | | | | | | | | | | | | | | | | | |



CERTIFICATE OF LIABILITY INSURANCE

This certificate is issued as a matter of information only and confers no rights upon the certificate holder and imposes no liability on the insurer. This certificate does not amend, extend or alter the coverage afforded by the policies below.

| | | | |
|---|-------------|---|---------------------|
| 1. CERTIFICATE HOLDER - NAME AND MAILING ADDRESS | | 2. INSURED'S FULL NAME AND MAILING ADDRESS | |
| To Whom It May Concern | | M. Sullivan & Son Limited | |
| | | 236 Madawaska Blvd. | |
| | | Suite 101 | |
| | POSTAL CODE | Arnprior ON | POSTAL CODE K7S 0A3 |

3. DESCRIPTION OF OPERATIONS/LOCATIONS/AUTOMOBILES/SPECIAL ITEMS TO WHICH THIS CERTIFICATE APPLIES (but only with respect to the operations of the Named Insured)

Operations of the Named Insured: General Contractor

Intact Insurance Policy #RSL349736 - Term: 2023/11/30 to 2024/11/30
Contractors Equipment: Broad Form Limit - \$7,503,375, Deductible 10,000

4. COVERAGES

This is to certify that the policies of insurance listed below have been issued to the insured named above for the policy period indicated notwithstanding any requirements, terms or conditions of any contract or other document with respect to which this certificate may be issued or may pertain. The insurance afforded by the policies described herein is subject to all terms, exclusions and conditions of such policies.

LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS

| TYPE OF INSURANCE | INSURANCE COMPANY AND POLICY NUMBER | EFFECTIVE DATE YYYY/MM/DD | EXPIRY DATE YYYY/MM/DD | LIMITS OF LIABILITY (Canadian dollars unless indicated otherwise) | | | |
|---|---|------------------------------|---------------------------|--|-------------------|---------------------|-----------|
| | | | | COVERAGE | DED. | AMOUNT OF INSURANCE | |
| COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE OR <input checked="" type="checkbox"/> OCCURRENCE <input checked="" type="checkbox"/> PRODUCTS AND / OR COMPLETED OPERATIONS <input checked="" type="checkbox"/> EMPLOYER'S LIABILITY <input checked="" type="checkbox"/> CROSS LIABILITY <input type="checkbox"/> WAIVER OF SUBROGATION <input checked="" type="checkbox"/> TENANTS LEGAL LIABILITY <input checked="" type="checkbox"/> POLLUTION LIABILITY EXTENSION <input type="checkbox"/> <input type="checkbox"/> | Intact Insurance Company RSL349736 | 2023/11/30 | 2024/11/30 | COMMERCIAL GENERAL LIABILITY BODILY INJURY AND PROPERTY DAMAGE LIABILITY - GENERAL AGGREGATE | | 25,000,000 | |
| | | | | | - EACH OCCURRENCE | 10,000 | 5,000,000 |
| | | | | PRODUCTS AND COMPLETED OPERATIONS AGGREGATE | | 5,000,000 | |
| | | | | <input type="checkbox"/> PERSONAL INJURY LIABILITY OR <input checked="" type="checkbox"/> PERSONAL AND ADVERTISING INJURY LIABILITY | | 5,000,000 | |
| | | | | MEDICAL PAYMENTS | | 25,000 | |
| | | | | TENANTS LEGAL LIABILITY | 1,000 | 500,000 | |
| | | | | POLLUTION LIABILITY EXTENSION | 25,000 | 5,000,000 | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| <input checked="" type="checkbox"/> NON-OWNED AUTOMOBILES <input type="checkbox"/> HIRED AUTOMOBILES | Intact Insurance Company RSL349736 | 2023/11/30 | 2024/11/30 | NON-OWNED AUTOMOBILES HIRED AUTOMOBILES | | 5,000,000 | |
| AUTOMOBILE LIABILITY <input type="checkbox"/> DESCRIBED AUTOMOBILES <input type="checkbox"/> ALL OWNED AUTOMOBILES <input type="checkbox"/> LEASED AUTOMOBILES ** ** ALL AUTOMOBILES LEASED IN EXCESS OF 30 DAYS WHERE THE INSURED IS REQUIRED TO PROVIDE INSURANCE | | | | BODILY INJURY AND PROPERTY DAMAGE COMBINED | | | |
| | | | | BODILY INJURY (PER PERSON) | | | |
| | | | | BODILY INJURY (PER ACCIDENT) | | | |
| | | | | PROPERTY DAMAGE | | | |
| EXCESS LIABILITY <input checked="" type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> | Intact Insurance Company RSN349736 | 2023/11/30 | 2024/11/30 | EACH OCCURRENCE | 10,000 | 20,000,000 | |
| | | | | AGGREGATE | | 20,000,000 | |
| OTHER LIABILITY (SPECIFY) <input checked="" type="checkbox"/> Installation Floater | Intact Insurance Company RSL349736 | 2023/11/30 | 2024/11/30 | Broad Form | 5,000 | 500,000 | |
| | | | | | | | |
| <input checked="" type="checkbox"/> Professional Liability | XL Specialty Insurance Company (Canada) CCP744651106 | 2023/11/30 | 2024/11/30 | Claims Made | 50,000 | 5,000,000 | |

5. CANCELLATION

Should any of the above described policies be cancelled before the expiration date thereof, the issuing company will endeavor to mail 60 days written notice to the certificate holder named above, but failure to mail such notice shall impose no obligation or liability of any kind upon the company, its agents or representatives.

| | | | |
|--|----|---|-------------|
| 6. BROKERAGE/AGENCY FULL NAME AND MAILING ADDRESS | | 7. ADDITIONAL INSURED NAME AND MAILING ADDRESS (Commercial General Liability- but only with respect to the operations of the Named Insured) | |
| Arthur J. Gallagher Canada Limited | | | |
| 333 Preston Street, Suite 400 | | | |
| Ottawa | ON | POSTAL CODE K1S 5N4 | |
| BROKER CLIENT ID: | | | POSTAL CODE |

| | | | |
|--|--|-----------------------------|--|
| 8. CERTIFICATE AUTHORIZATION | | CONTACT NUMBER(S) | |
| ISSUER Arthur J. Gallagher Canada Limited | AUTHORIZED REPRESENTATIVE Suzanne Johnston, BA CRM | TYPE Phone NO. 613.238.4444 | TYPE NO. |
| | | TYPE Fax NO. 613.907.3351 | TYPE NO. |
| SIGNATURE OF AUTHORIZED REPRESENTATIVE <i>Suzanne Johnston</i> | | DATE 2024/01/24 | EMAIL ADDRESS suzanne_johnston@ajg.com |



Your clearance(s) / Vos certificats de décharge

We confirm that the business(es) listed below are active and in good standing with us.

Nous confirmons que la ou les entreprises énumérées ci-dessous sont actives et que leurs comptes sont en règle.

| Contractor legal or trade name / Raison sociale ou appellation commerciale de l'entrepreneur | Contractor address / Adresse de l'entrepreneur | Contractor NAICS Code and Code Description / Code du SCIAN de l'entrepreneur et description | Clearance certificate number / Numéro du certificat de décharge | Validity period (dd-mmm-yyyy) / Période de validité (jj- mmm-aaaa) |
|--|---|--|--|--|
| M. SULLIVAN & SON LIMITED / M. SULLIVAN & SON | 236 MADAWASKA BLVD SUITE 100, C/O KERRY HSKO, CFO, ARNPRIOR, ON, K7S0A3, CA | 007060: Non-Exempt Partners and Executive Officers in Construction - G6 236220: Commercial and institutional building construction | A0000J0282 | 20-Feb-2024 to 19-Aug-2024 |

Under Section 141 of the *Workplace Safety and Insurance Act*, the WSIB waives our right to hold the principal (the business that has entered into a contractual agreement with the contractor/subcontractor) liable for any unpaid premiums and other amounts the contractor may owe us for the validity period specified.
Aux termes de l'article 141 de la *Loi sur la sécurité professionnelle et l'assurance contre les accidents du travail*, la WSIB renonce à son droit de tenir l'entrepreneur principal (l'entreprise qui a conclu une entente contractuelle avec l'entrepreneur ou le sous-traitant) responsable de toute prime impayée et autre montant que l'entrepreneur pourrait lui devoir pour la période de validité indiquée.

WSIB Head Office: 200 Front Street West
Toronto, Ontario, Canada M5V 3J1

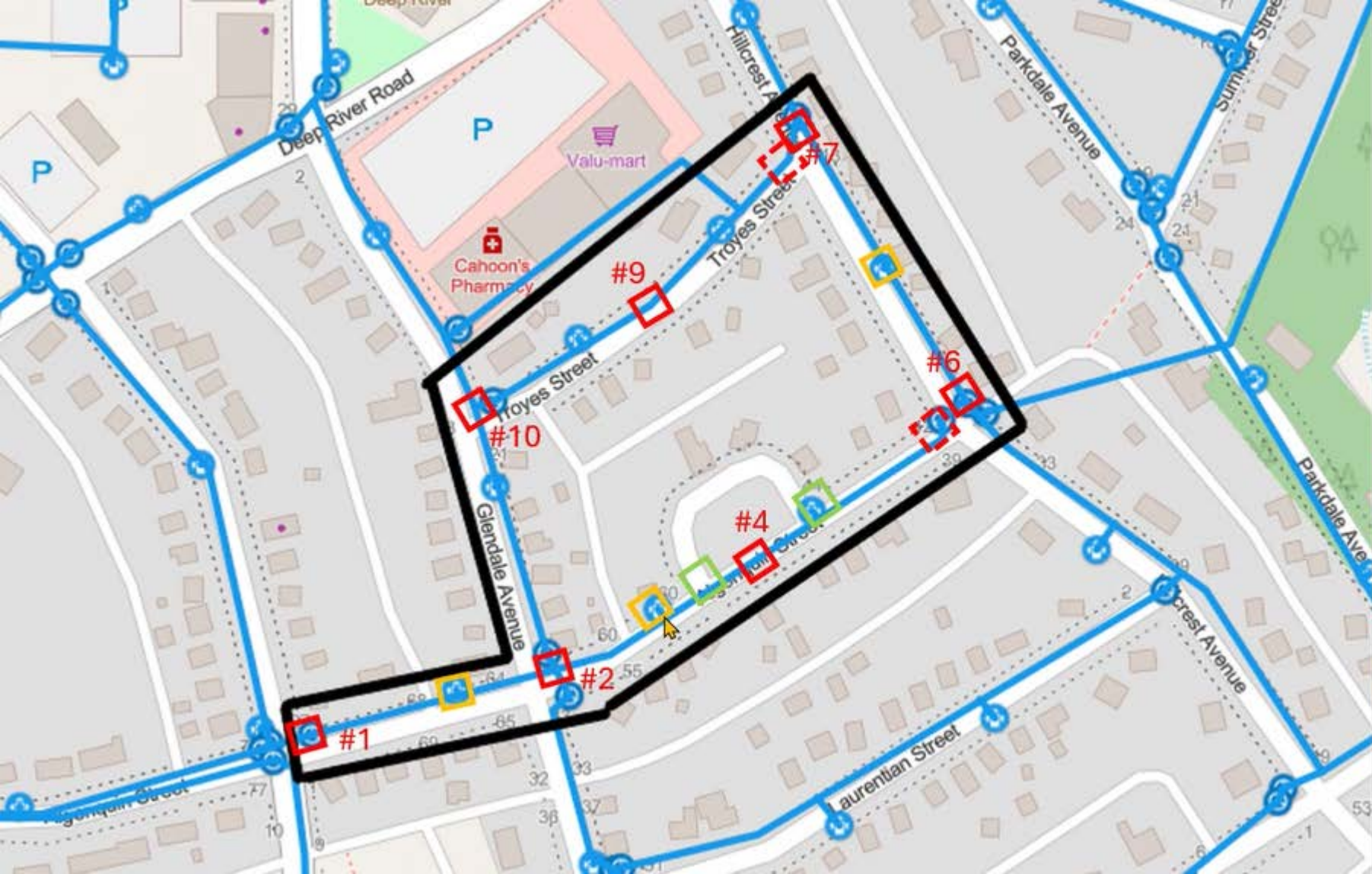
Siège social : 200, rue Front Ouest
Toronto (Ontario) Canada M5V 3J1

1-800-387-0750 | TTY/ATS 1-800-387-0050
employeraccounts@wsib.on.ca | wsib.ca

Town of Deep River

Spray in Place Pipe

2024





 Project Limits

TRENCH BOXES

 Planned Pits

 Hydrant Excavation

 Contingency
(Example only)

 Tee abandoned
by Town



 **Watson
& Associates**
ECONOMISTS LTD.

Water and Wastewater Rate Study

Town of Deep River

March 19, 2021

Watson & Associates Economists Ltd.
905-272-3600
info@watsonecon.ca

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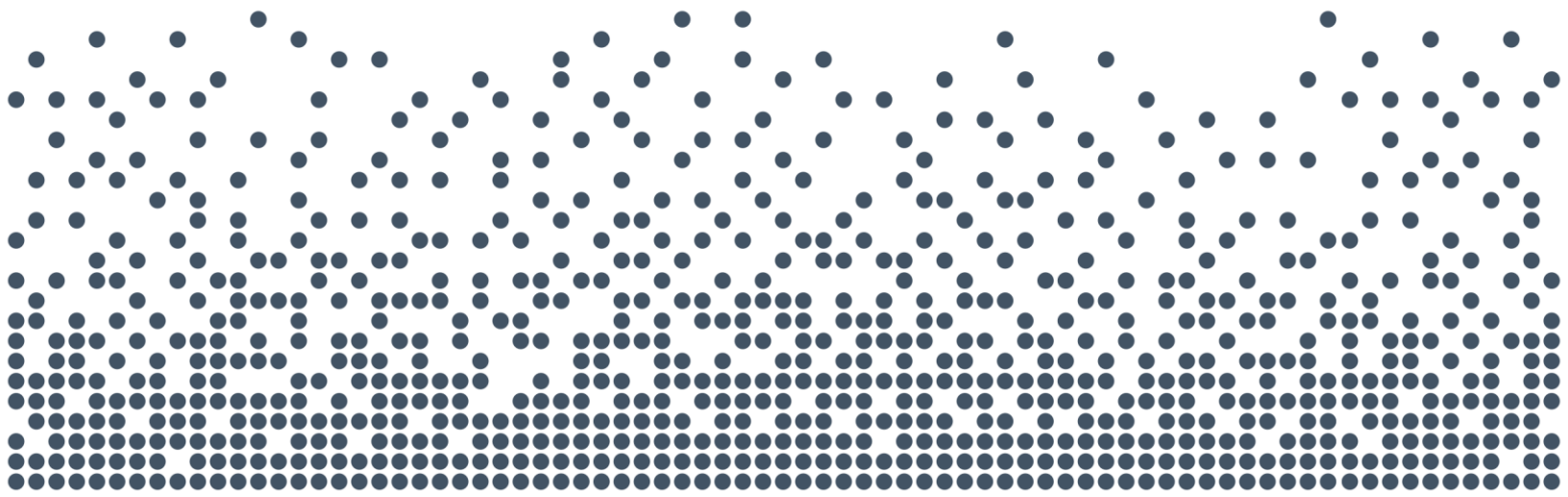
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List of Acronyms and Abbreviations

| Acronym | Full Description of Acronym |
|----------------|------------------------------------|
| C.P.I. | Consumer Price Index |
| D.C. | Development Charges |
| G.I.S. | Geographic Information System |
| O. Reg. | Ontario Regulation |
| OCWA | Ontario Clean Water Agency |
| P.I.L. | Payment-in-Lieu |
| Q.S.R. | Quick Score Rating |
| S.D.W.A. | Safe Drinking Water Act |
| S.F.D.E. | Single Family Dwelling Equivalent |



Report



Chapter 1

Introduction



1. Introduction

1.1 Background

The Town of Deep River (Town) has a present population of approximately 4,109 people, based on the 2016 Census. There are approximately 2,142 water single family dwelling equivalent (S.F.D.E.) customers and 2,019 wastewater S.F.D.E. customers using the municipal systems. The treatment, storage, and distribution/collection of water and wastewater are the responsibility of the Town.

All customers, with one exception, are currently billed an annual flat charge for both water and wastewater. Water services provided by the Town to Canadian Nuclear Laboratories are billed based on a consumptive rate applied to metered consumption. Furthermore, the Town imposes other charges for water services, including a fire hose charge for buildings equipped with a fire hose connection and a connection/disconnection charge. The water and wastewater rates currently imposed are summarized below in Table 1-1.

Table 1-1
Town of Deep River
2020 Water and Wastewater Rates

| 2020 - Water Billing Rates | | 2020 - Wastewater Billing Rates | |
|---------------------------------------|--------------------|---------------------------------|-----------|
| Flat Rate | | Flat Rate | |
| Annual Charge | \$ 628.42 | Annual Charge | \$ 483.48 |
| Volume Charge | | | |
| \$ 0.88 | per m ³ | | |
| Other Charges | | | |
| Fire Hose (Standpipe) Charge | \$ 628.42 | | |
| Water Connection/Disconnection Charge | \$ 20.00 | | |



1.2 Study Process

The Town retained Watson & Associates Economists Ltd. (Watson) to undertake a water and wastewater rate study. The objectives of the study and the steps involved in carrying out this assignment are summarized below:

- Update water and wastewater service demand assumptions based on analysis of the current customer profile, historical consumption, and recent trends;
- Estimate future consumption levels by applying revised demand assumptions to forecast growth identified in the County of Renfrew 2020 Official Plan;
- Identify all current and future water and wastewater system capital needs to assess the immediate and longer-term implications;
- Build a capital program that addresses specific needs identified by OCWA and Town staff;
- Identify potential methods of cost recovery with respect to the capital needs listing. These recovery methods may include other statutory authorities (e.g. *Development Charges Act, 1997, Municipal Act, etc.*) as an offset to recovery through the water and wastewater rates;
- Forecast annual operating costs and rate-based funding requirements;
- Develop a long-term water and wastewater rate forecast;
- Provide an impact assessment on the rate payers; and
- Present findings to staff and Council for their consideration.

In approaching this study, the following analysis is provided:

- Chapter 2 – Forecast Growth and Service Demands
- Chapter 3 – Capital Infrastructure Needs
- Chapter 4 – Capital Cost Financing Options
- Chapter 5 – Operating Expenditure Forecast
- Chapter 6 – Forecast Water and Wastewater Rates

1.2.1 Scenario Analysis

Following the release of an initial report on November 27, 2020 and subsequent presentation of that report to Council on December 2, 2020, two additional rate forecast scenarios were developed. This report contains information on all three scenarios for



comparison purposes. The Base Scenario is consistent with what was presented in the November 27 report, and Scenario 1 and Scenario 2 have been added herein.

The two additional scenarios introduced the following assumptions:

- availability of additional provincial/federal grants (see section 4.3);
- introduction of development charges to fund the growth-related capital costs of specific wastewater works (see section 4.1); and
- reductions to lifecycle funding targets to achieve 90% of full lifecycle levels by the end of the forecast period (see section 3.1.4).

1.3 Legislative Context

Resulting from the water crisis in Walkerton, significant regulatory changes have been made in Ontario. These changes arose in consequence to the Walkerton Commission and the 93 recommendations made by the Walkerton Inquiry Part II report. Areas of recommendation included:

- watershed management and source protection;
- quality management;
- preventative maintenance;
- research and development;
- new performance standards;
- sustainable asset management; and
- lifecycle costing.

The following sections describe significant applicable regulatory areas.

1.3.1 *Sustainable Water and Sewage Systems Act*

The *Sustainable Water and Sewage Systems Act* was passed on December 13, 2002. The intent of the Act was to introduce the requirement for municipalities to undertake an assessment of the “full cost” of providing their water and wastewater services. In total, there were 40 areas within the Act to which the Minister may make regulations; however regulations were never issued. On December 31, 2012, the *Sustainable Water and Sewage Systems Act* was repealed.



1.3.2 Safe Drinking Water Act

The *Safe Drinking Water Act* was passed in December 2002. The *Safe Drinking Water Act* provides for 50 of the 93 Walkerton Part II recommendations. It focuses on the administrative and operational aspects of the provision of water.

The purposes of the *Safe Drinking Water Act* are to “recognize that the people of Ontario are entitled to expect their drinking water to be safe and to provide for the protection of human health and the prevention of drinking water health hazards through the control and regulation of drinking water systems and drinking water testing. 2002, c. 32, s. 1.”

The following is a brief summary of the key elements included in the *Safe Drinking Water Act*:

- Mandatory licensing and accreditation of testing laboratories;
- New standards for treatment, distribution quality and testing;
- Mandatory operator training and certification;
- Mandatory licensing of municipal water providers;
- Stronger enforcement and compliance provisions; and
- “Standard of care” requirements for municipalities.

This legislation impacts the costs of operating a water system with the need for higher skilled operators including increased training costs, increased reporting protocols and requirements, continuing enhancements to quality standards, and the costs to license each water system.

1.3.3 Financial Plans Regulation

On August 16, 2007, the Ministry of Environment introduced Ontario Regulation (O. Reg.) 453/07 which requires the preparation of financial plans for water systems (and municipalities are encouraged to prepare plans for wastewater systems). The Ministry of Environment has also provided a Financial Plan Guideline to assist municipalities with preparing the plans. A brief summary of the key elements of the regulation is provided below:



- The financial plan will represent one of the key elements to obtain a Drinking Water Licence.
- The plan is to be completed, approved by Council Resolution, and submitted to the Ministry of Municipal Affairs and Housing as part of the application for receiving approval of a water licence.
- The financial plans shall be for a period of at least six years, but longer planning horizons are encouraged.
- As the regulation is under the *Safe Drinking Water Act*, the preparation of the plan is mandatory for water services and encouraged for wastewater services.
- The plan is considered a living document (i.e. it can be updated if there are significant changes to budgets) but an update will need to be undertaken at a minimum every five years.
- The plans generally require the forecasting of capital, operating and reserve fund positions, and providing detailed capital inventories. In addition, Public Sector Accounting Board full accrual information on the system must be provided for each year of the forecast (i.e. total non-financial assets, tangible capital asset acquisitions, tangible capital asset construction, betterments, write-downs, disposals, total liabilities, net debt, etc.).
- The financial plans must be made available to the public (at no charge) upon request and be available on the municipality's web site. The availability of this information must also be advertised.

In general, the financial principles of this regulation follow the intent of the *Sustainable Water and Sewage Systems Act, 2002* to move municipalities towards financial sustainability for water services. Many of the prescriptive requirements, however, have been removed (e.g. preparation of two separate documents for provincial approval, auditor opinions, engineer certifications, etc.).

A guideline ("Towards Financially Sustainable Drinking-Water and Wastewater Systems") has been developed to assist municipalities in understanding the Province's direction and provides a detailed discussion on possible approaches to sustainability. The Province's Principles of Financially Sustainable Water and Wastewater Services are provided below:

Principle #1: Ongoing public engagement and transparency can build support for, and confidence in, financial plans and the system(s) to which they relate.



Principle #2: An integrated approach to planning among water, wastewater, and storm water systems is desirable given the inherent relationship among these services.

Principle #3: Revenues collected for the provision of water and wastewater services should ultimately be used to meet the needs of those services.

Principle #4: Lifecycle planning with mid-course corrections is preferable to planning over the short term, or not planning at all.

Principle #5: An asset management plan is a key input to the development of a financial plan.

Principle #6: A sustainable level of revenue allows for reliable service that meets or exceeds environmental protection standards, while providing sufficient resources for future rehabilitation and replacement needs.

Principle #7: Ensuring users pay for the services they are provided leads to equitable outcomes and can improve conservation. In general, metering and the use of rates can help ensure users pay for services received.

Principle #8: Financial Plans are “living” documents that require continuous improvement. Comparing the accuracy of financial projections with actual results can lead to improved planning in the future.

Principle #9: Financial plans benefit from the close collaboration of various groups, including engineers, accountants, auditors, utility staff, and municipal council.

1.3.4 Water Opportunities Act

The *Water Opportunities Act* received Royal Assent on November 29, 2010. The Act provides for the following elements:

- Foster innovative water, wastewater, and stormwater technologies, services, and practices in the private and public sectors;
- Prepare water conservation plans to achieve water conservation targets established by the regulations; and
- Prepare sustainability plans for municipal water services, municipal wastewater services, and municipal stormwater services.



With regard to the sustainability plans:

- The Act extends from the water financial plan and requires a more detailed review of the water financial plan, and requires a full plan for wastewater and stormwater services; and
- Regulations (when issued) will provide performance targets for each service – these targets may vary based on the jurisdiction of the regulated entity or the class of entity.

The Financial Plan shall include:

- An asset management plan for the physical infrastructure;
- Financial Plan;
- For water, a water conservation plan;
- Assessment of risks that may interfere with the future delivery of the municipal service, including, if required by the regulations, the risks posed by climate change and a plan to deal with those risks; and
- Strategies for maintaining and improving the municipal service, including strategies to ensure the municipal service can satisfy future demand, consider technologies, services, and practices that promote the efficient use of water and reduce negative impacts on Ontario's water resources, and increase co-operation with other municipal service providers.

Performance indicators will be established by service that:

- May relate to the financing, operation, or maintenance of a municipal service or to any other matter in respect of which information may be required to be included in a plan; and
- May be different for different municipal service providers or for municipal services in different areas of the Province.

Regulations will prescribe:

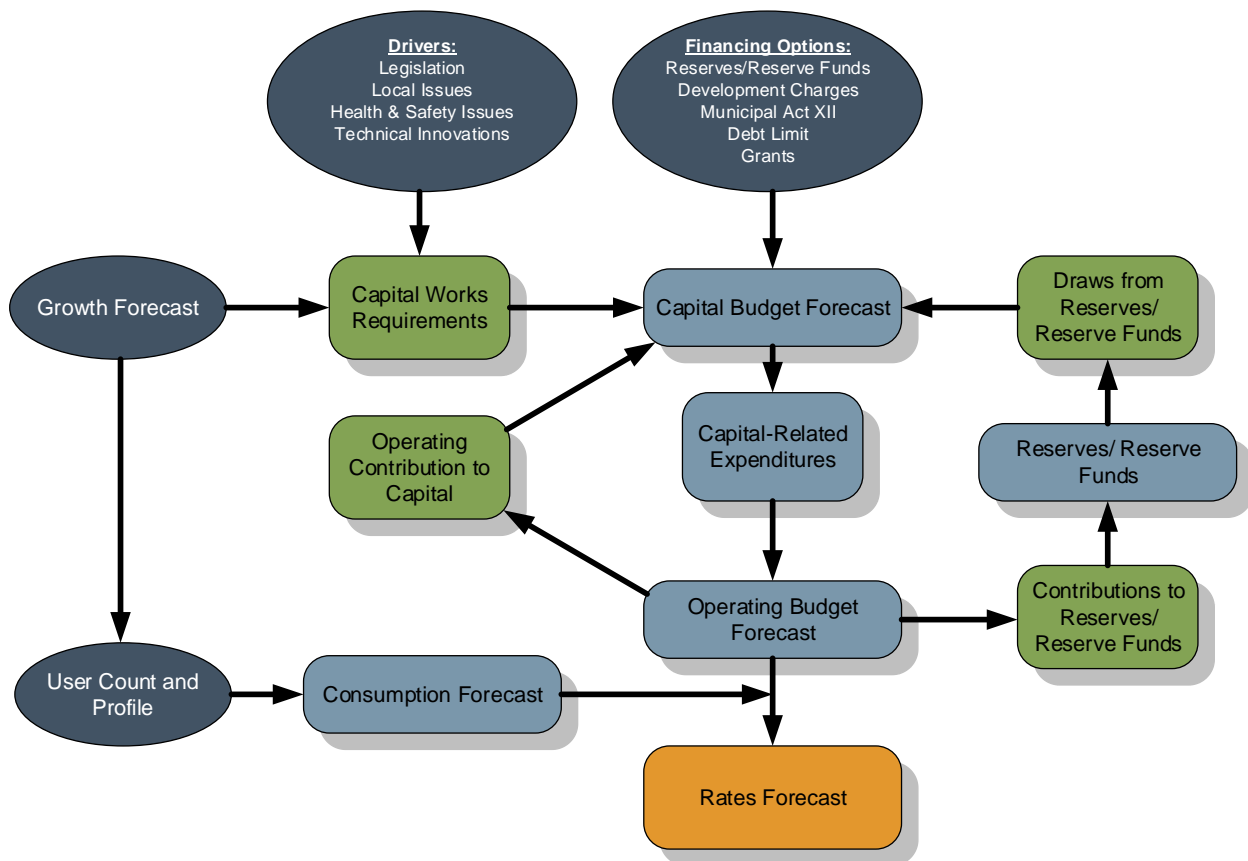
- Timing;
- Contents of the plans;
- Portions of the plan that will require certification;
- Public consultation process; and
- Limitations, updates, refinements, etc.



1.4 Water and Wastewater Rate Calculation Methodology

Figure 1-1 illustrates the general methodology used in determining the full cost recovery water and wastewater rate forecast.

Figure 1-1
Water and Wastewater Rate Calculation Methodology



The methodology employed generally consists of five major elements:

1.4.1 Customer Demands and Consumption Forecast

As noted in section 1.1, the Town employs a rate structure consisting of an annual flat charge for most customers and a consumptive rate charged to one metered customer. The consumptive rate is imposed as a constant rate based on consumption.



This first step in the analysis is important as it produces the current base revenue by source and assumptions for forecasting purposes. The annual flat charge revenues are forecast with customer growth. The customer profile forecast is modelled based on the County of Renfrew's 2020 Official Plan growth forecast. Moreover, the customer forecast is modelled for the water and wastewater systems independently to identify differences in service demands.

Water consumption for the one metered customer has been forecast to remain constant at levels witnessed over the past year (November 2019 to October 2020).

1.4.2 Capital Needs Forecast

The capital needs forecast is developed to measure program/service level adjustments, lifecycle requirements, and growth-related needs. Analysis conducted by Town staff and the Ontario Clean Water Agency (OCWA)—the operator of the Town's systems—identified capital projects that together form the capital forecast. Capital expenditures are forecast with inflationary adjustments based on capital cost indices.

1.4.3 Capital Funding Plan

The capital funding plan considers the potential funding sources available to address the capital needs forecast. The sources of capital funding include rate-based support, reserves/reserve funds, and debt for program/service level improvements. The use of rate-based funding is measured against the revenue projections and affordability impacts. The reserve/reserve fund sources are measured against the sustainability of these funds, relative to lifecycle demands, revenue projections, and affordability impacts. Debt financing is considered for significant capital expenditures where funding is required beyond long-term lifecycle needs or to facilitate rate transition policies. Debt financing is measured against annual repayment limits to ensure a practical and sustainable funding mix.

1.4.4 Operating Budget Forecast

The operating budget forecast considers adjustments to the Town's base budget reflecting program/service level changes, operating fund impacts associated with infrastructure, and financing for capital needs. The operating expenditures are forecast with inflationary adjustments and growth in service demand, based on fixed and variable cost characteristics. The operating budget forecast ties the capital funding plan and



reserve/reserve fund continuity forecast to the rate-based revenue projections. This ensures sufficient funding for both the ongoing annual operation and maintenance of water and wastewater services, as well as the capital cost requirements to ensure service sustainability. Operating revenues are projected to identify the billing revenues net of anticipated operating revenues, such as penalties and interest, permits and fees, administrative fees, and water/sewer certificate fees.

1.4.5 Rate Forecast and Structure

The rate forecast and structure component of the analysis considers various rate structures to recover the forecast rate-based revenue from the projected customer demands. At this stage in the analysis, the full costs of service are measured against the customer growth and consumption demands to determine full cost recovery rates. The analysis may consider alternative structures, consistent with municipal policies/strategies, industry practice, and customer affordability. Providing context to the rate forecast, the results are quantified to measure the impacts on a range of customer types and in relation to other municipalities.



Chapter 2

Forecast Growth and Service Demands



2. Forecast Growth and Service Demands

2.1 Current Service Demands

In preparing the demands forecast for water and wastewater services, annual water and wastewater billing records were analyzed. These records detailed the number of customers by type, enabling the development of a comprehensive profile of existing customers.

Based on analysis of this information, there were 2,142 water S.F.D.E. customers and 2,019 wastewater S.F.D.E. customers in the Town in 2020. The majority of customers on the Town's water and wastewater systems are residential, accounting for approximately 87% of all customer accounts.

2.2 Forecast Service Demands

Over the next ten years (i.e. to 2030), the number of water and wastewater system customers is anticipated to increase by 112. Currently, the town provides water services to 2,142 S.F.D.E. customers and wastewater services to 2,019 S.F.D.E. customers. This results in an increase from 2,142 water S.F.D.E. customers and 2,019 wastewater S.F.D.E. customers at the start of 2020, to 2,254 water S.F.D.E. customers and 2,131 wastewater S.F.D.E. customers by 2030. It is expected that all new development will be connected to both water and wastewater services. Tables 2-1 and 2-2 provide the detailed S.F.D.E. customer forecast for the period 2020 to 2030 for water and wastewater, respectively.

Consumption records from November 2019 to October 2020 were used to develop a forecast of water demands of the one metered customer for the period 2020 to 2030. Average daily consumption levels were calculated from these consumption records and utilized to calculate an annual average. Table 2-3 presents the forecast of annual chargeable water consumption for this metered customer.

The number of wastewater customers is lower than the number of water customers due to the presence of private septic systems. The customer forecast for wastewater account for this difference, resulting in lower customer counts.



Table 2-1
Town of Deep River
Water Single Family Dwelling Equivalent Customer Forecast

| Water Customer Forecast | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Existing Unmetered - Residential | 1,635 | 1,635 | 1,635 | 1,635 | 1,635 | 1,635 | 1,635 | 1,635 | 1,635 | 1,635 | 1,635 |
| Existing Unmetered - Multi-Residential | 229 | 229 | 229 | 229 | 229 | 229 | 229 | 229 | 229 | 229 | 229 |
| Existing Unmetered - Non-Residential | 257 | 257 | 257 | 257 | 257 | 257 | 257 | 257 | 257 | 257 | 257 |
| New - Unmetered SFD Equivalent | 3 | 24 | 46 | 51 | 62 | 73 | 79 | 90 | 101 | 106 | 112 |
| Town Properties | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 |
| Total | 2,145 | 2,166 | 2,188 | 2,193 | 2,204 | 2,215 | 2,221 | 2,232 | 2,243 | 2,248 | 2,254 |

Table 2-2
Town of Deep River
Wastewater Single Family Dwelling Equivalent Customer Forecast

| Wastewater Customer Forecast | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Existing Unmetered - Residential | 1,528 | 1,528 | 1,528 | 1,528 | 1,528 | 1,528 | 1,528 | 1,528 | 1,528 | 1,528 | 1,528 |
| Existing Unmetered - Multi-Residential | 229 | 229 | 229 | 229 | 229 | 229 | 229 | 229 | 229 | 229 | 229 |
| Existing Unmetered - Non-Residential | 246 | 246 | 246 | 246 | 246 | 246 | 246 | 246 | 246 | 246 | 246 |
| New - Unmetered SFD Equivalent | 3 | 24 | 46 | 51 | 62 | 73 | 79 | 90 | 101 | 106 | 112 |
| Town Properties | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| Total | 2,022 | 2,043 | 2,065 | 2,070 | 2,081 | 2,092 | 2,098 | 2,109 | 2,120 | 2,125 | 2,131 |

Table 2-3
Town of Deep River
Water Consumption Forecast (m³) – Metered Customer

| Water Volume Forecast (m ³) | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Metered Customer | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 |
| Total | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 | 299,300 |



Chapter 3

Capital Infrastructure Needs



3. Capital Infrastructure Needs

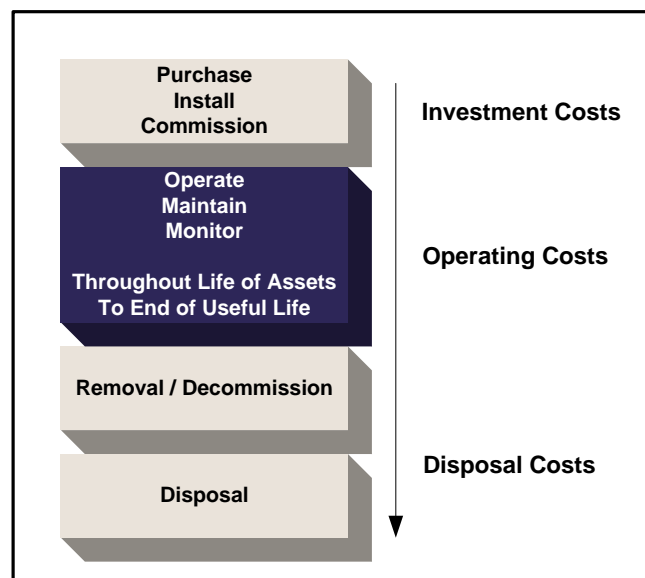
3.1 Overview of Lifecycle Costing

3.1.1 Definition

For many years, lifecycle costing has been used in the field of maintenance engineering and to evaluate the advantages of using alternative materials in construction or production design. The method has gained wider acceptance and use in the areas of industrial decision-making and the management of physical assets.

Lifecycle costs are all the costs which are incurred during the lifecycle of a physical asset, from the time its acquisition is first considered, to the time it is taken out of service for disposal or redeployment. The stages that the asset goes through in its lifecycle are specification, design, manufacture (or build), installation, commissioning, operation, maintenance, and disposal. Figure 3-1 depicts these stages in a schematic form.

Figure 3-1
Lifecycle Costing





3.1.2 Financing Costs

This section will focus on financing mechanisms in place to fund the costs incurred throughout the asset's life.

In a municipal context, services are provided to benefit tax/rate payers. Acquisition of assets is normally timed in relation to direct needs within the community. At times, economies of scale or technical efficiencies will lead to oversizing an asset to accommodate future growth within the municipality. Over the past few decades, new financing techniques such as D.C.s have been employed, based on the underlying principle of having tax/rate payers who benefit directly from the service, pay for that service. Operating costs which reflect the cost of the service for that year are charged directly to all existing tax/rate payers who have received the benefit. Operating costs are normally charged through the tax base or user rates.

Capital expenditures are recouped through several methods, the most common being operating budget contributions, D.C., reserves, developer contributions and debentures.

New construction related to growth could produce D.C.s and developer contributions (e.g. works internal to a subdivision which are the responsibility of the developer to construct) to fund a significant portion of projects, where new assets are being acquired to allow growth within the municipality to continue. As well, debentures could be used to fund such works, with the debt charge carrying costs recouped from taxpayers in the future.

Capital construction to replace existing infrastructure, however, is largely not growth-related and will therefore not yield D.C.s or developer contributions to assist in financing these works. Hence, a municipality will be dependent upon debentures, reserves, and contributions from the operating budget to fund these works.

Figure 3-2 depicts the costs of an asset from its initial conception through to replacement and then continues to follow the associated costs through to the next replacement.

As referred to earlier, growth-related financing methods such as D.C.s and developer contributions could be utilized to finance the growth-related component of the new asset. These revenues are collected (indirectly) from the new homeowner who benefits directly from the installation of this asset. Other financing methods may be used as well



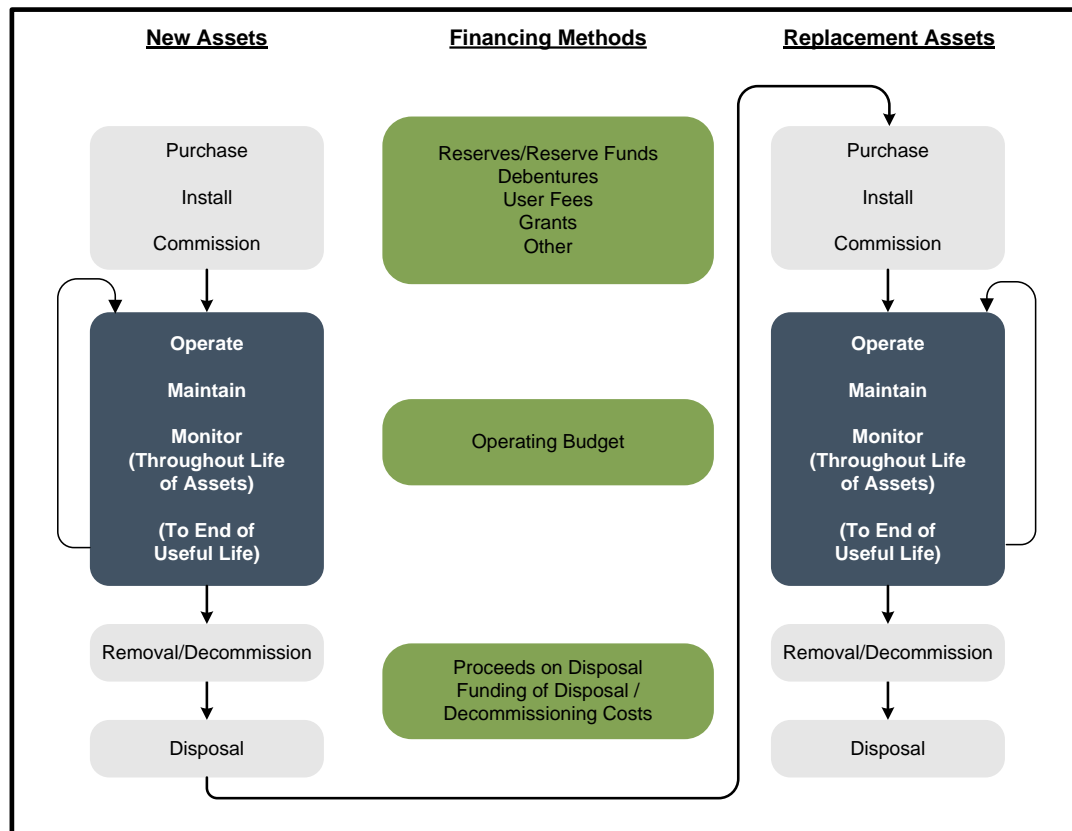
to finance the non-growth-related component of this project: reserves which have been collected from past tax/rate payers, operating budget contributions which are collected from existing tax/rate payers, and debt financing which will be carried by future tax/rate payers. Ongoing costs for monitoring, operating, and maintaining the asset will be charged annually to the existing tax/rate payer.

When the asset requires replacement, the sources of financing will be limited to reserves, debentures, and contributions from the operating budget. At this point, the question is raised: “If the cost of replacement is to be assessed against the tax/rate payer who benefits from the replacement of the asset, should the past tax/rate payer pay for this cost or should future rate payers assume this cost?” If the position is taken that the past user has used up the asset, hence he should pay for the cost of replacement, then a charge should be assessed annually through the life of the asset to have funds available to replace it when the time comes. If the position is taken that the future tax/rate payer should assume this cost, then debt financing and possibly a contribution from the operating budget should be used to fund this work.

Charging for the cost of using up an asset is the fundamental concept behind amortization methods utilized by the private sector. This concept allows for expending the asset as it is used up in the production process. The tracking of these costs forms part of the product's selling price and hence end users are charged for the asset's amortization. The same concept can be applied in a municipal setting to charge existing users for the asset's use and set those funds aside in a reserve to finance the cost of replacing the asset in the future.



Figure 3-2
Financing Lifecycle Costs



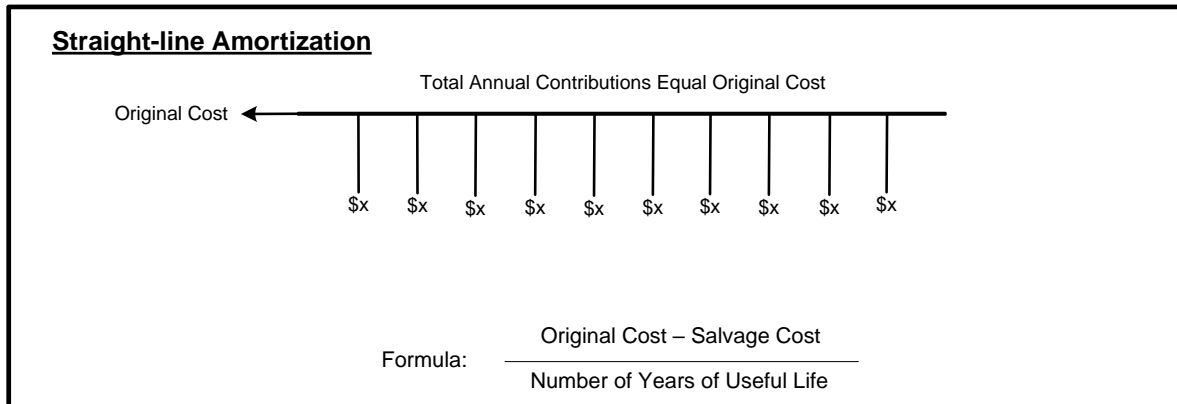
3.1.3 Costing Methods

There are two fundamental methods of calculating the cost of the usage of an asset and for the provision of the revenue required when the time comes to retire and replace it. The first method is the Amortization Method. This method recognizes the reduction in the value of the asset through wear and tear, and aging. There are two commonly used forms of amortization: the straight-line method and the reducing balance method.

The straight-line method is calculated by taking the original cost of the asset, subtracting its estimated salvage value (estimated value of the asset at the time it is disposed of) and dividing this by the estimated number of years of useful life. The reducing balance method is calculated by utilizing a fixed percentage rate and this rate is applied annually to the undepreciated balance of the asset value.

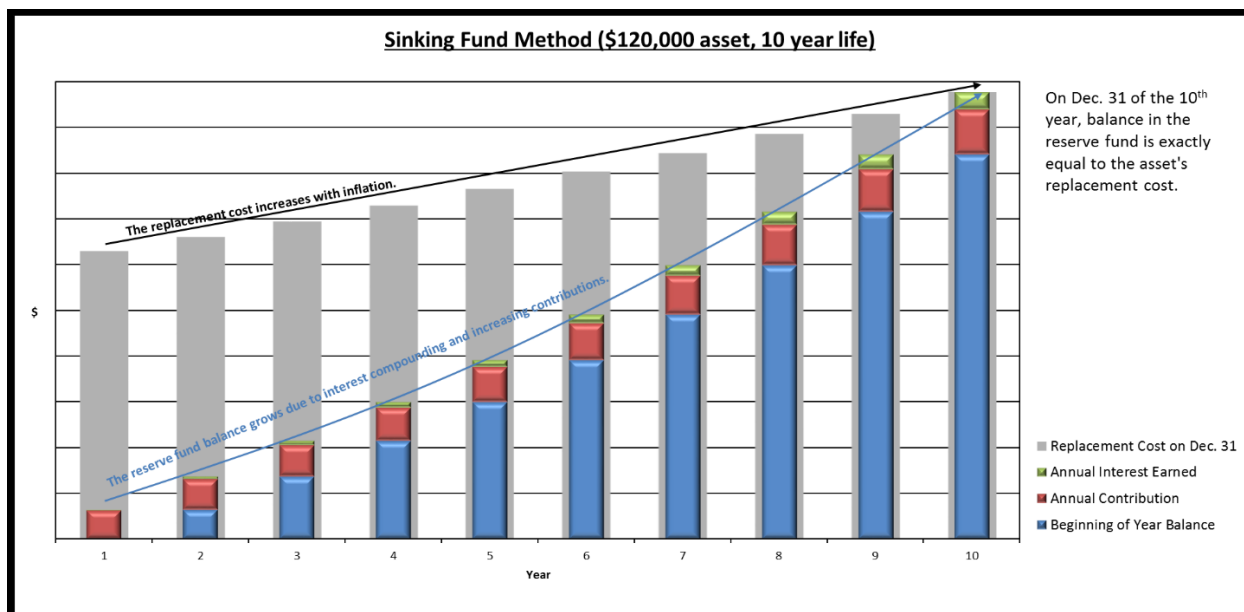


Figure 3-3
Straight-line Amortization Method



The second method of lifecycle costing is the sinking fund method. This method first estimates the future value of the asset at the time of replacement. This is done by inflating the original cost of the asset at an assumed annual inflation rate. A calculation is then performed to determine annual contributions (equal or otherwise) which, when invested, will grow with interest to equal the future replacement cost.

Figure 3-4
Sinking Fund Method





The preferred method used hereinafter is the sinking fund method of lifecycle costing.

3.1.4 Asset Inventory

Water and wastewater capital asset inventory information was compiled from the Town's asset management inventory and discussions with Town staff.

Lifecycle "sinking fund" contribution amounts for each piece of infrastructure have also been included. These calculations determine the level of capital investment to be included in the full cost assessment and rate forecast. Table 3-1 summarizes the current asset replacement value and long-term annual lifecycle replacement needs (2020 \$). It is noted that the forecast developed for the Base Scenario fully embraces the annual lifecycle funding amount identified in Table 3-1 (i.e., \$2.47 million) by the end of the forecast period. Based on discussions with Town staff, there is potential to implement innovative lifecycle management strategies (e.g., trenchless technologies) that would extend the useful life of assets, thereby reducing lifecycle costs. Considering this, the forecasts developed for Scenario 1 and Scenario 2 target 90% of the full lifecycle funding amount identified in Table 3-1 by the end of the forecast period. It is expected that the estimates of annual lifecycle costs will be further refined in the coming years through the Town's ongoing asset management efforts.

Table 3-1
Town of Deep River
Summary of Water and Wastewater Infrastructure (2020 \$)

| Asset | Replacement Value | Annual Lifecycle Contribution | % of Replacement Value |
|------------------------------|----------------------|-------------------------------|------------------------|
| Water | | | |
| Linear (45 km) | \$ 26,360,400 | \$ 606,000 | 2.3% |
| Water Treatment Plant | \$ 23,000,000 | \$ 690,000 | 3.0% |
| Tower | \$ 3,000,000 | \$ 87,000 | 2.9% |
| Booster Station | \$ 1,300,000 | \$ 38,000 | 2.9% |
| Subtotal - Water | \$ 53,660,400 | \$ 1,421,000 | 2.6% |
| Wastewater | | | |
| Linear (26 km) | \$ 23,191,000 | \$ 533,000 | 2.3% |
| WWTP | \$ 16,100,000 | \$ 515,000 | 3.2% |
| Subtotal - Wastewater | \$ 39,291,000 | \$ 1,048,000 | 2.7% |
| Grand Total | \$ 92,951,400 | \$ 2,469,000 | 2.7% |



3.2 Capital Needs Forecast

Ten-year capital forecasts were provided by OCWA and further refined through discussions with Town staff to address known capital needs across the water and wastewater systems.

The total capital forecast—in current dollars—includes approximately \$15.20 million in capital needs, with \$8.06 million of that being related to water services and \$7.14 million to wastewater services. The capital forecast includes lifecycle renewal/replacement needs of the Town's water and wastewater infrastructure.

On this basis, the average annual value of the capital program for water is approximately \$806,200. This level of expenditure is lower than the long-term water infrastructure needs identified in section 3.1.4, which suggests long-term rate-supported capital needs of \$1.42 million (2020 \$) annually. This suggests that the 10-year forecast of specific infrastructure renewal and replacement needs identified in this study are lower than longer-term capital funding requirements.

The average annual value of the capital program for wastewater is approximately \$714,000. This level of expenditure is lower than the long-term wastewater infrastructure needs identified in section 3.1.4, which suggests long-term rate-supported capital needs of \$1.05 million (2020 \$) annually. This suggests that the 10-year forecast of specific infrastructure renewal and replacement needs identified in this study are lower than longer-term capital funding requirements.

The listing of water and wastewater capital needs is presented in Tables 3-2 and 3-3, respectively. For rate determination purposes, the capital needs forecast has been indexed by 3.5% annually. This is generally reflective of the average annual capital cost inflation witnessed in the Statistics Canada Building Construction Price Index over the past 20 years.



Table 3-2
Town of Deep River
Water Capital Budget Forecast (Uninflated \$)

| Description | Total | Forecast | | | | | | | | | |
|---|------------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Expenditures | | | | | | | | | | | |
| OCWA - Major Capital | | | | | | | | | | | |
| Update Capital Plan for WTP | 20,000 | - | 10,000 | - | - | - | - | 10,000 | | | |
| Inspection of coatings, cathodic protection system, mixing system, every 5 years. | 5,000 | - | 5,000 | - | - | - | - | - | | | |
| Intake Inspection every 5 years | 4,000 | - | - | - | 4,000 | - | - | - | | | |
| Allowance for inspection and minor repairs | 6,000 | - | - | - | 6,000 | - | - | - | | | |
| Generator refurbishment | 10,000 | - | - | - | - | 10,000 | - | - | | | |
| Chemical feed pumps | - | - | - | - | - | - | - | - | | | |
| Actuators | 30,000 | - | - | - | - | 10,000 | 10,000 | 10,000 | | | |
| Chlorinator | 90,000 | - | 30,000 | - | 30,000 | - | - | 30,000 | | | |
| Backwash sump pump | 20,000 | 10,000 | - | - | - | - | - | 10,000 | | | |
| Painting / refurbish water tower | - | - | - | - | - | - | - | - | | | |
| Process actuators | 120,000 | 40,000 | 40,000 | 40,000 | - | - | - | - | | | |
| Process turbidimeters | 36,000 | 12,000 | 12,000 | 12,000 | - | - | - | - | | | |
| Process Chlorine analyzers | 25,000 | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | - | - | | | |
| Fluoride Analyzer | 12,000 | 12,000 | - | - | - | - | - | - | | | |
| Filter #2 upgrade | 150,000 | - | - | - | 150,000 | - | - | - | | | |
| Chemical feed pumps | 28,000 | 13,000 | - | - | - | - | 15,000 | - | | | |
| Replace boilers | 120,000 | - | 120,000 | - | - | - | - | - | | | |
| Other | | | | | | | | | | | |
| Water Treatment Plant Fire Alarm System | 19,000 | 19,000 | | | | | | | | | |
| Water Tower Assessment and rehabilitation | 1,500,000 | | 1,500,000 | | | | | | | | |
| Watermain Lining - Phase I | 563,000 | | 563,000 | | | | | | | | |
| Watermain Lining - Phase II | 2,815,000 | | | 563,000 | 563,000 | 563,000 | 563,000 | 563,000 | | | |
| Watermain Lining - Phase III | 1,689,000 | | | | | | | | 563,000 | 563,000 | 563,000 |
| Brockhouse Way Construction | 800,000 | | 800,000 | | | | | | | | |
| Total Capital Expenditures | 8,062,000 | 111,000 | 3,085,000 | 620,000 | 758,000 | 588,000 | 588,000 | 623,000 | 563,000 | 563,000 | 563,000 |



Table 3-3
Town of Deep River
Wastewater Capital Budget Forecast (Uninflated \$)

| Description | Total | Forecast | | | | | | | | | |
|---|------------------|------------------|------------------|---------------|----------------|----------------|----------|---------------|----------|----------|----------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Expenditures | | | | | | | | | | | |
| OCWA - Major Capital | - | | | | | | | | | | |
| Plant expansion project - add one more SBR unit | 1,900,000 | 380,000 | 1,520,000 | | | | | | | | |
| Plant expansion project - add tertiary filtration units (if req'd by MOECC) | 1,600,000 | 320,000 | 1,280,000 | | | | | | | | |
| Plant expansion project - additional aerobic digestion tankage and sludge storage | 1,800,000 | 360,000 | 1,440,000 | | | | | | | | |
| Lifting equipment improvements | 25,000 | 25,000 | | | | | | | | | |
| Roof Ice guards | 30,000 | 30,000 | | | | | | | | | |
| SCADA Upgrade | 25,000 | | | | 25,000 | | | | | | |
| Raw Sewage pump | 35,000 | | | 35,000 | | | | | | | |
| Grinder | 60,000 | 30,000 | | | | | | 30,000 | | | |
| Upgrade aeration lines in EQ tank | 100,000 | | 100,000 | | | | | | | | |
| Refurbish existing SBR units (one unit per year) | 225,000 | | 75,000 | 75,000 | 75,000 | | | | | | |
| Update O&M manual including SOPs | 40,000 | | 40,000 | | | | | | | | |
| UV replacement (if not included as part of plant expansion work) | 500,000 | | | | | 500,000 | | | | | |
| Other | | | | | | | | | | | |
| Brockhouse Way Construction | 800,000 | | 800,000 | | | | | | | | |
| Total Capital Expenditures | 7,140,000 | 1,145,000 | 5,255,000 | 75,000 | 110,000 | 525,000 | - | 30,000 | - | - | - |



Chapter 4

Capital Cost Financing Options



4. Capital Cost Financing Options

Historically, the powers that municipalities have had to raise alternative revenues to taxation to fund capital services have been restrictive. Over the past number of years, legislative reforms have been introduced. Some of these have expanded municipal powers (e.g. Bill 130 providing for natural person powers for fees and charges by-laws); while others appear to restrict them (Bill 98 in 1997 providing amendments to the *Development Charges Act*).

The most recent *Municipal Act* came into force on January 1, 2003, with significant amendments in 2006 through the *Municipal Statute Law Amendment Act*. Part XII of the Act and O. Reg. 584/06 govern a municipality's ability to impose fees and charges. This Act provides municipalities with broadly defined powers and provides the ability to impose fees for both operating and capital purposes. Under s. 484 of the *Municipal Act, 2001*, the *Local Improvement Act* was repealed with the in-force date of the *Municipal Act* (January 1, 2003). The municipal powers granted under the *Local Improvement Act* now fall under the jurisdiction of the *Municipal Act*.

The methods of capital cost recovery available to municipalities are provided as follows:

| Recovery Methods | Section Reference |
|--------------------------------------|--------------------------|
| <i>Development Charges Act, 1997</i> | 4.1 |
| <i>Municipal Act, 2001</i> | |
| ○ Fees and Charges | 4.2 |
| ○ Local Improvements | |
| Grant Funding | 4.3 |
| Reserves/Reserve Funds | 4.4 |
| Debenture Financing | 4.5 |



4.1 Development Charges Act, 1997

The *Development Charges Act* received Royal Assent on December 8, 1997, replacing the previous Act, which had been in-force since November 23, 1989.

The Province's stated intentions were to "create new construction jobs and make home ownership more affordable" by reducing the charges and to "make municipal Council decisions more accountable and more cost effective." The basis for this Act is to allow municipalities to recover the growth-related capital cost of infrastructure necessary to accommodate new growth within the municipality. The *Development Charges Act, 1997* as amended, provides for limitations and ceilings on services that can be included in the charges.

The Town does not currently impose D.C.s on new development as a source of funding for anticipated growth-related capital needs. It is noted that a capacity expansion project at the sewage treatment plant has been identified in the capital forecast. The financial forecast for Scenario 2 assumes that development charges will be used to fund a portion of the capacity expansion. As such, if Council approves the rate forecast under Scenario 2, the Town should undertake a development charges study.

4.2 Municipal Act

The *Municipal Act, 2001*, came into force on January 1, 2003. Part XII Fees and Charges, gives municipalities the statutory authority to recover the costs of services, including capital costs, through by-law. Municipalities have used these types of charges to recover infrastructure costs associated with the extension of municipal services to private service users, to recover capital improvement costs from existing developments, and to recover growth-related costs of service extensions. These by-laws are typically used where D.C.s would not be applicable (e.g. recovery from existing developments) or where existing and growth-related cost recovery would be simplified under the administration of one by-law.

The Town does not recover capital costs through capital charges imposed under the *Municipal Act*.



4.3 Grant Funding Availability

Grant funding of \$1.14 million, representing two thirds of the Brockhouse Way Construction project costs, has been identified in the forecast for all scenarios. While this grant funding is not guaranteed, it would be required to make this project financially feasible for the Town and has been identified accordingly. Additional grant funding of \$1.69 million has been included in Scenario 2, representing two thirds of the watermain relining program for the first five years. Table 4-1 summarizes the total anticipated grant funding available for water and wastewater capital projects included in the capital forecast.

Table 4-1
Town of Deep River
Anticipated Grant Funding

| Description | Base Scenario | Scenario 1 | Scenario 2 |
|-----------------------------|---------------------|---------------------|---------------------|
| Water | | | |
| Brockhouse Way Construction | \$ 570,667 | \$ 570,667 | \$ 570,667 |
| Watermain Lining | \$ - | \$ - | \$ 1,692,000 |
| Total Water | \$ 570,667 | \$ 570,667 | \$ 2,262,667 |
| Wastewater | | | |
| Brockhouse Way Construction | \$ 570,667 | \$ 570,667 | \$ 570,667 |
| Total Wastewater | \$ 570,667 | \$ 570,667 | \$ 570,667 |
| Grand Total | \$ 1,141,333 | \$ 1,141,333 | \$ 2,833,333 |

To the extent that the Town is successful in securing additional grant funding for future infrastructure needs and the financial impacts are material, the rate forecast may be revisited.

4.4 Existing Reserves/Reserve Funds

The Town has established reserves for water and wastewater capital costs. These reserves have been used in the capital funding forecast for rate-based needs. The following table summarizes the water and wastewater reserves utilized in this analysis and the respective adjusted January 1, 2020 opening balances.



Table 4-2
Town of Deep River
Water and Wastewater Projected Reserve/Reserve Fund Balances

| Reserve | 2020 Balance |
|---------------------------|-------------------|
| Water Reserve | |
| Opening | \$ 194,168 |
| Adjustments | |
| 2020 Water Filter | \$ (143,032) |
| 2020 Utility Rate Study | \$ (10,800) |
| Adjusted | \$ 40,336 |
| Wastewater Reserve | |
| Opening | \$ 399,783 |
| Total | \$ 440,119 |

4.5 Debenture Financing

Although it is not a direct method of minimizing the overall cost to the ratepayer, debentures are used by municipalities to assist in cash-flowing large capital expenditures.

The Ministry of Municipal Affairs and Housing regulates the level of debt incurred by Ontario municipalities through its powers established under the *Municipal Act*. O. Reg. 403/02 provides the current rules respecting municipal debt and financial obligations. Through the rules established under these regulations, a municipality's debt capacity is capped at a level where no more than 25% of the municipality's own-purpose revenue may be allotted for servicing the debt (i.e. debt charges).

The Town has outstanding external debt for water services. As of 2020, annual water debt servicing costs (principal and interest) totals approximately \$377,600. Additionally, the Town also has outstanding external debt with respect to wastewater services. As of 2020, annual debt servicing costs (principal and interest) totals approximately \$264,600.

The capital forecast proposes debt financing for both the water and wastewater systems. Under the Base Scenario and Scenario 1, debt financing of \$3.61 million for the water system and \$5.47 million for the wastewater system have been proposed throughout the forecast period. Under the Scenario 2, debt financing of \$2.37 million for the water system and \$1.67 million for the wastewater system (of which \$1.36 million would be recovered through development charges) have been proposed throughout the



forecast period. There is relatively less debt proposed under Scenario 2 due to the additional grant funding that has been included in this scenario.

4.6 Recommended Approach

The following table summarizes the capital funding sources for the three scenarios supporting the capital needs forecast, for consideration by the Town.

Table 4-3
Town of Deep River
2021 to 2030 Water and Wastewater Capital Funding Program (Inflated \$)

Base Scenario

| Description | Water | Wastewater | Total |
|------------------------------|---------------------|---------------------|----------------------|
| Provincial/Federal Grants | \$ 570,667 | \$ 570,667 | \$ 1,141,333 |
| Debenture Requirements | \$ 3,606,453 | \$ 5,468,933 | \$ 9,075,386 |
| Reserve Funds | \$ 5,292,880 | \$ 1,637,400 | \$ 6,930,280 |
| Total Capital Funding | \$ 9,470,000 | \$ 7,677,000 | \$ 17,147,000 |

Scenario 1

| Description | Water | Wastewater | Total |
|------------------------------|---------------------|---------------------|----------------------|
| Provincial/Federal Grants | \$ 570,667 | \$ 570,667 | \$ 1,141,333 |
| Debenture Requirements | \$ 3,606,453 | \$ 5,468,933 | \$ 9,075,386 |
| Reserve Funds | \$ 5,292,880 | \$ 1,637,400 | \$ 6,930,280 |
| Total Capital Funding | \$ 9,470,000 | \$ 7,677,000 | \$ 17,147,000 |

Scenario 2

| Description | Water | Wastewater | Total |
|---------------------------------------|---------------------|---------------------|----------------------|
| Provincial/Federal Grants | \$ 2,262,667 | \$ 4,326,667 | \$ 6,589,333 |
| Development Charges Reserve Fund | \$ - | \$ - | \$ - |
| Growth Related Debenture Requirements | \$ - | \$ 1,364,565 | \$ 1,364,565 |
| Debenture Requirements | \$ 2,367,133 | \$ 305,797 | \$ 2,672,930 |
| Reserve Funds | \$ 4,840,200 | \$ 1,679,971 | \$ 6,520,171 |
| Total Capital Funding | \$ 9,470,000 | \$ 7,677,000 | \$ 17,147,000 |

Tables 4-4 and 4-5 provide the full 10-year capital expenditure and funding program based on the recommended scenario (Scenario 2) for water and wastewater services, respectively. These capital funding plans are provided in inflated dollars.



Table 4-4
Town of Deep River
Scenario 2
Water Service Capital Budget Forecast (Inflated \$)

| Description | Total | Forecast | | | | | | | | | |
|---|------------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Expenditures | | | | | | | | | | | |
| OCWA - Major Capital | | | | | | | | | | | |
| Update Capital Plan for WTP | 24,000 | - | 11,000 | - | - | - | - | 13,000 | - | - | - |
| Inspection of coatings, cathodic protection system, mixing system, every 5 years. | 5,000 | - | 5,000 | - | - | - | - | - | - | - | - |
| Intake Inspection every 5 years | 5,000 | - | - | - | 5,000 | - | - | - | - | - | - |
| Allowance for inspection and minor repairs | 7,000 | - | - | - | 7,000 | - | - | - | - | - | - |
| Generator refurbishment | 12,000 | - | - | - | - | 12,000 | - | - | - | - | - |
| Chemical feed pumps | - | - | - | - | - | - | - | - | - | - | - |
| Actuators | 37,000 | - | - | - | - | 12,000 | 12,000 | 13,000 | - | - | - |
| Chlorinator | 104,000 | - | 32,000 | - | 34,000 | - | - | 38,000 | - | - | - |
| Backwash sump pump | 23,000 | 10,000 | - | - | - | - | - | 13,000 | - | - | - |
| Painting / refurbish water tower | - | - | - | - | - | - | - | - | - | - | - |
| Process actuators | 128,000 | 41,000 | 43,000 | 44,000 | - | - | - | - | - | - | - |
| Process turbidimeters | 38,000 | 12,000 | 13,000 | 13,000 | - | - | - | - | - | - | - |
| Process Chlorine analyzers | 28,000 | 5,000 | 5,000 | 6,000 | 6,000 | 6,000 | - | - | - | - | - |
| Fluoride Analyzer | 12,000 | 12,000 | - | - | - | - | - | - | - | - | - |
| Filter #2 upgrade | 172,000 | - | - | - | 172,000 | - | - | - | - | - | - |
| Chemical feed pumps | 31,000 | 13,000 | - | - | - | - | 18,000 | - | - | - | - |
| Replace boilers | 128,000 | - | 128,000 | - | - | - | - | - | - | - | - |
| Other | | | | | | | | | | | |
| Water Treatment Plant Fire Alarm System | 20,000 | 20,000 | - | - | - | - | - | - | - | - | - |
| Water Tower Assessment and rehabilitation | 1,605,000 | - | 1,605,000 | - | - | - | - | - | - | - | - |
| Watermain Lining - Phase I | 603,000 | - | 603,000 | - | - | - | - | - | - | - | - |
| Watermain Lining - Phase II | 3,339,000 | - | - | 623,000 | 645,000 | 667,000 | 690,000 | 714,000 | - | - | - |
| Watermain Lining - Phase III | 2,293,000 | - | - | - | - | - | - | - | 739,000 | 764,000 | 790,000 |
| Brockhouse Way Construction | 856,000 | - | 856,000 | - | - | - | - | - | - | - | - |
| Total Capital Expenditures | 9,470,000 | 113,000 | 3,301,000 | 686,000 | 869,000 | 697,000 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |



Table 4-4 (cont.)
Town of Deep River
Scenario 2
Water Service Capital Budget Forecast (Inflated \$)

| Description | Total | Forecast | | | | | | | | | |
|--------------------------------|------------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Financing | | | | | | | | | | | |
| Provincial/Federal Grants | 2,262,667 | - | 972,667 | 415,333 | 430,000 | 444,667 | - | - | - | - | - |
| Debenture Requirements | 2,367,133 | - | 2,082,528 | 119,320 | 165,285 | - | - | - | - | - | - |
| Operating Contributions | - | - | - | - | - | - | - | - | - | - | - |
| Water Reserve | 4,840,200 | 113,000 | 245,806 | 151,346 | 273,715 | 252,333 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |
| Total Capital Financing | 9,470,000 | 113,000 | 3,301,000 | 686,000 | 869,000 | 697,000 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |



Table 4-5
Town of Deep River
Scenario 2
Wastewater Service Capital Budget Forecast (Inflated \$)

| Description | Total | Forecast | | | | | | | | | |
|---|------------------|------------------|------------------|---------------|----------------|----------------|----------|---------------|----------|----------|----------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Expenditures | | | | | | | | | | | |
| OCWA - Major Capital | | | | | | | | | | | |
| Plant expansion project - add one more SBR unit | 2,020,000 | 393,000 | 1,627,000 | - | - | - | - | - | - | - | - |
| Plant expansion project - add tertiary filtration units (if req'd by MOECC) | 1,701,000 | 331,000 | 1,370,000 | - | - | - | - | - | - | - | - |
| Plant expansion project - additional aerobic digestion tankage and sludge storage | 1,913,000 | 372,000 | 1,541,000 | - | - | - | - | - | - | - | - |
| Lifting equipment improvements | 26,000 | 26,000 | - | - | - | - | - | - | - | - | - |
| Roof Ice guards | 31,000 | 31,000 | - | - | - | - | - | - | - | - | - |
| SCADA Upgrade | 30,000 | - | - | - | - | 30,000 | - | - | - | - | - |
| Raw Sewage pump | 40,000 | - | - | - | 40,000 | - | - | - | - | - | - |
| Grinder | 69,000 | 31,000 | - | - | - | - | - | 38,000 | - | - | - |
| Upgrade aeration lines in EQ tank | 107,000 | - | 107,000 | - | - | - | - | - | - | - | - |
| Refurbish existing SBR units (one unit per year) | 249,000 | - | 80,000 | 83,000 | 86,000 | - | - | - | - | - | - |
| Update O&M manual including SOPs | 43,000 | - | 43,000 | - | - | - | - | - | - | - | - |
| UV replacement (if not included as part of plant expansion work) | 592,000 | - | - | - | - | 592,000 | - | - | - | - | - |
| Other | | | | | | | | | | | |
| Brockhouse Way Construction | 856,000 | - | 856,000 | - | - | - | - | - | - | - | - |
| Total Capital Expenditures | 7,677,000 | 1,184,000 | 5,624,000 | 83,000 | 126,000 | 622,000 | - | 38,000 | - | - | - |
| Capital Financing | | | | | | | | | | | |
| Provincial/Federal Grants | 4,326,667 | 730,667 | 3,596,000 | - | - | - | - | - | - | - | - |
| Development Charges Reserve Fund | - | - | - | - | - | - | - | - | - | - | - |
| Debenture Requirements | 305,797 | - | 305,797 | - | - | - | - | - | - | - | - |
| Growth Related Debenture Requirements | 1,364,565 | 265,453 | 1,099,112 | - | - | - | - | - | - | - | - |
| Operating Contributions | - | - | - | - | - | - | - | - | - | - | - |
| Wastewater Reserve | 1,679,971 | 187,880 | 623,091 | 83,000 | 126,000 | 622,000 | - | 38,000 | - | - | - |
| Total Capital Financing | 7,677,000 | 1,184,000 | 5,624,000 | 83,000 | 126,000 | 622,000 | - | 38,000 | - | - | - |



Chapter 5

Net Operating Expenditure Forecast



5. Net Operating Expenditure Forecast

5.1 Operating Expenditures

The Town provided its draft 2021 Operating Budget which formed the basis for the water and wastewater services net operating expenditure forecast, which was further refined through discussions with Town staff. The operating expenditure estimates were generally inflated at 2% annually, reflecting historical Consumer Price Index (C.P.I.) rates.

The operating budget forecast generally includes two components – operating expenditures and capital-related expenditures. The former is based on the Town’s projected annual spending for ongoing operations and maintenance, while the latter is based on the capital funding plan decisions (i.e. transfers to reserve funds, debt repayment, and capital fund transfers) presented earlier.

Capital-related annual expenditures in the forecast include annual debt repayments and contributions to reserves and reserve funds to support the forecast and future needs. While operating aspects identified above generally increase with inflation over the period (i.e. 2% annually), the capital-related aspects tend to increase more specifically with the increase in capital funding requirements.

As a result, gross operating expenditures for water and wastewater services are anticipated to increase by the following:

Water

- Base Scenario: \$1.82 million in 2021 to \$3.68 million by 2030;
- Scenario 1: \$1.82 million in 2021 to \$3.48 million by 2030; and
- Scenario 2: \$1.81 million in 2021 to \$3.48 million by 2030.

Wastewater

- Base Scenario: \$1.16 million in 2021 to \$2.30 million by 2030;
- Scenario 1: \$1.16 million in 2021 to \$2.15 million by 2030; and
- Scenario 2: \$1.06 million in 2021 to \$2.25 million by 2030.



5.2 Operating Revenues

The Town has operating revenue sources including fire hose charges, hydrant rentals, connection/disconnection charges, and other miscellaneous revenues that offset some of the annual operating costs. These operating revenues have generally been forecast over the period with general inflation of 2% annually. With respect to water services, the fire hose charge and hydrant rental charge have been forecast to increase at the same rate as the flat rate charges.

The annual operating revenues for water and wastewater services are anticipated to increase by the following:

Water

- Base Scenario: \$45,200 in 2021 to \$81,600 by 2030;
- Scenario 1: \$45,200 in 2021 to \$77,500 by 2030; and
- Scenario 2: \$44,900 in 2021 to \$77,500 million by 2030.

Wastewater

- Base Scenario & Scenario 1: \$6,400 in 2021 to \$7,600 by 2030; and
- Scenario 2: \$6,400 in 2021 to \$108,000 by 2030.

Tables 5-1 to 5-2 provide the operating budget forecasts based on Scenario 2 for water and wastewater, respectively. The forecast operating budgets are provided in inflated dollars. Detailed breakdowns of the operating expenditure forecasts for all scenarios can be found in Appendix A for water services and in Appendix B for wastewater services.



Table 5-1
Town of Deep River
Scenario 2
Water Service Operating Budget Forecast (Inflated \$)

| Description | Forecast | | | | | | | | | |
|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| EXPENDITURES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Administration - Corporate | - | - | - | - | - | - | - | - | - | - |
| Administration - Water | 66,166 | 67,510 | 68,720 | 70,330 | 71,640 | 73,050 | 74,560 | 76,070 | 77,490 | 79,100 |
| Water Treatment | 583,936 | 595,600 | 607,500 | 619,700 | 632,100 | 644,700 | 657,600 | 670,800 | 684,200 | 697,900 |
| Distribution/Transmission | 401,556 | 409,600 | 417,800 | 426,100 | 434,600 | 443,400 | 452,300 | 461,300 | 470,400 | 480,000 |
| Facility Maintenance | - | - | - | - | - | - | - | - | - | - |
| Facility Operations | 359,325 | 366,550 | 373,870 | 381,380 | 388,890 | 396,810 | 404,620 | 412,640 | 421,050 | 429,570 |
| Sub Total Operating | 1,410,983 | 1,439,260 | 1,467,890 | 1,497,510 | 1,527,230 | 1,557,960 | 1,589,080 | 1,620,810 | 1,653,140 | 1,686,570 |
| Capital-Related | | | | | | | | | | |
| Existing Debt (Principal) | 136,951 | 140,883 | 145,019 | 149,371 | 153,949 | 133,149 | 137,151 | 141,372 | 145,825 | 150,522 |
| Existing Debt (Interest) | 256,233 | 252,146 | 247,928 | 243,642 | 239,063 | 208,784 | 202,889 | 196,826 | 190,427 | 183,835 |
| New Debt (Principal) | - | - | 69,935 | 76,739 | 85,359 | 88,774 | 92,325 | 96,018 | 99,858 | 103,853 |
| New Debt (Interest) | - | - | 83,301 | 85,277 | 88,818 | 85,404 | 81,853 | 78,160 | 74,319 | 70,325 |
| Transfer to Capital | - | - | - | - | - | - | - | - | - | - |
| Transfer to Capital Reserve | 1,887 | 152,214 | 151,346 | 273,715 | 404,579 | 605,499 | 760,614 | 927,612 | 1,100,394 | 1,286,783 |
| Sub Total Capital Related | 395,070 | 545,243 | 697,529 | 828,743 | 971,768 | 1,121,610 | 1,274,831 | 1,439,987 | 1,610,823 | 1,795,319 |
| Total Expenditures | 1,806,053 | 1,984,503 | 2,165,419 | 2,326,253 | 2,498,998 | 2,679,570 | 2,863,911 | 3,060,797 | 3,263,963 | 3,481,889 |
| REVENUES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Fire Hose (Standpipe) Charge | 7,930 | 8,643 | 9,421 | 10,081 | 10,786 | 11,542 | 12,286 | 13,079 | 13,923 | 14,821 |
| Hydrant Rental | 29,070 | 31,687 | 34,538 | 36,956 | 39,543 | 42,311 | 45,041 | 47,947 | 51,041 | 54,334 |
| Water on/off charge | 714 | 730 | 740 | 760 | 770 | 790 | 800 | 820 | 840 | 850 |
| Non-resident Surcharge | 598 | 652 | 711 | 761 | 814 | 871 | 927 | 987 | 1,051 | 1,118 |
| Miscellaneous Revenues (Penalties & Interest, Permits & Fees, Administrative Fees, | 6,580 | 6,700 | 5,600 | 5,700 | 5,800 | 5,900 | 6,100 | 6,200 | 6,300 | 6,400 |
| Total Operating Revenue | 44,892 | 48,412 | 51,011 | 54,258 | 57,714 | 61,414 | 65,154 | 69,033 | 73,154 | 77,524 |



Table 5-1 (cont.)
Town of Deep River
Scenario 2
Water Service Operating Budget Forecast (Inflated \$)

| Description | Forecast | | | | | | | | | |
|------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Billing | | | | | | | | | | |
| Residential Billing | 1,136,378 | 1,255,078 | 1,372,104 | 1,477,730 | 1,591,420 | 1,708,802 | 1,830,730 | 1,961,278 | 2,093,835 | 2,236,614 |
| Multi-Residential Billing | 156,860 | 170,977 | 186,365 | 199,411 | 213,370 | 228,305 | 243,036 | 258,717 | 275,410 | 293,179 |
| Commercial Billing | 176,039 | 191,883 | 209,152 | 223,793 | 239,458 | 256,221 | 272,752 | 290,350 | 309,084 | 329,027 |
| Commercial Billing - CRL | 287,089 | 312,927 | 341,090 | 364,966 | 390,514 | 417,850 | 444,810 | 473,510 | 504,061 | 536,584 |
| Town Properties | 14,385 | 15,679 | 17,090 | 18,287 | 19,567 | 20,936 | 22,287 | 23,725 | 25,256 | 26,885 |
| Total Billing Revenue | 1,770,750 | 1,946,544 | 2,125,802 | 2,284,187 | 2,454,329 | 2,632,114 | 2,813,615 | 3,007,580 | 3,207,646 | 3,422,289 |
| Less: Water on/off Discount | 9,590 | 10,453 | 11,394 | 12,191 | 13,044 | 13,958 | 14,858 | 15,817 | 16,837 | 17,924 |
| Total Revenues | 1,806,053 | 1,984,503 | 2,165,419 | 2,326,253 | 2,498,998 | 2,679,570 | 2,863,911 | 3,060,797 | 3,263,963 | 3,481,889 |



Table 5-2
Town of Deep River
Scenario 2
Wastewater Service Operating Budget Forecast (Inflated \$)

| Description | Forecast | | | | | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| EXPENDITURES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Administration | 52,347 | 53,400 | 54,410 | 55,620 | 56,640 | 57,750 | 59,060 | 60,070 | 61,290 | 62,600 |
| Wastewater Collection | 77,836 | 79,400 | 80,800 | 82,700 | 84,200 | 85,900 | 87,700 | 89,400 | 91,200 | 93,100 |
| Wastewater Treatment | 60,000 | 61,200 | 62,400 | 63,700 | 64,900 | 66,200 | 67,600 | 68,900 | 70,300 | 71,700 |
| Facility Maintenance | - | - | - | - | - | - | - | - | - | - |
| Facility Operations | 428,739 | 437,360 | 446,080 | 455,010 | 464,130 | 473,360 | 482,790 | 492,510 | 502,330 | 512,370 |
| Capital Projects | 72,500 | 74,000 | 75,400 | 76,900 | 78,500 | 80,000 | 81,600 | 83,300 | 84,900 | 86,600 |
| Sub Total Operating | 691,422 | 705,360 | 719,090 | 733,930 | 748,370 | 763,210 | 778,750 | 794,180 | 810,020 | 826,370 |
| Capital-Related | | | | | | | | | | |
| New Growth Related Debt (Principal) | - | 8,914 | 46,181 | 48,028 | 49,949 | 51,947 | 54,025 | 56,186 | 58,434 | 60,771 |
| New Growth Related Debt (Interest) | - | 10,618 | 54,226 | 52,379 | 50,458 | 48,460 | 46,382 | 44,221 | 41,973 | 39,636 |
| Existing Debt (Principal) | 215,670 | 222,784 | 230,134 | 237,652 | 245,572 | 228,063 | 235,374 | - | - | - |
| Existing Debt (Interest) | 65,394 | 60,020 | 54,481 | 48,850 | 42,896 | 11,220 | 3,909 | - | - | - |
| New Debt (Principal) | - | - | 10,269 | 10,680 | 11,107 | 11,551 | 12,014 | 12,494 | 12,994 | 13,514 |
| New Debt (Interest) | - | - | 12,232 | 11,821 | 11,394 | 10,950 | 10,488 | 10,007 | 9,507 | 8,988 |
| Transfer to Capital | - | - | - | - | - | - | - | - | - | - |
| Transfer to Capital Reserve | 92,450 | 170,130 | 223,236 | 308,841 | 403,021 | 553,221 | 666,877 | 1,030,367 | 1,160,032 | 1,301,562 |
| Sub Total Capital Related | 373,515 | 472,466 | 630,759 | 718,252 | 814,396 | 915,412 | 1,029,068 | 1,153,275 | 1,282,940 | 1,424,470 |
| Total Expenditures | 1,064,937 | 1,177,826 | 1,349,849 | 1,452,182 | 1,562,766 | 1,678,622 | 1,807,818 | 1,947,455 | 2,092,960 | 2,250,840 |
| REVENUES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Miscellaneous Revenues (Sewage Disposal Fees, Penalties & Interest, Permits & Fees) | 6,376 | 6,500 | 6,600 | 6,800 | 6,900 | 7,000 | 7,200 | 7,300 | 7,500 | 7,600 |
| Contributions from Development Charges Reserve Fund | - | 19,533 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 |
| Total Operating Revenue | 6,376 | 26,033 | 107,007 | 107,207 | 107,307 | 107,407 | 107,607 | 107,707 | 107,907 | 108,007 |



Table 5-2 (cont.)
Town of Deep River
Scenario 2
Wastewater Service Operating Budget Forecast (Inflated \$)

| Description | Forecast | | | | | | | | | |
|------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Billing | | | | | | | | | | |
| Residential Billing | 807,712 | 881,772 | 952,182 | 1,032,099 | 1,118,670 | 1,208,685 | 1,309,972 | 1,419,682 | 1,532,881 | 1,656,101 |
| Multi-Residential Billing | 119,179 | 128,288 | 138,094 | 148,648 | 160,010 | 172,239 | 185,404 | 199,575 | 214,829 | 231,248 |
| Commercial Billing | 128,027 | 137,812 | 148,345 | 159,683 | 171,888 | 185,026 | 199,168 | 214,390 | 230,777 | 248,415 |
| Town Properties | 8,327 | 8,963 | 9,648 | 10,386 | 11,180 | 12,034 | 12,954 | 13,944 | 15,010 | 16,157 |
| Total Billing Revenue | 1,063,245 | 1,156,835 | 1,248,269 | 1,350,817 | 1,461,748 | 1,577,984 | 1,707,498 | 1,847,591 | 1,993,496 | 2,151,921 |
| Less: Water on/off Discount | 4,684 | 5,042 | 5,427 | 5,842 | 6,289 | 6,769 | 7,287 | 7,844 | 8,443 | 9,088 |
| Total Revenues | 1,064,937 | 1,177,826 | 1,349,849 | 1,452,182 | 1,562,766 | 1,678,622 | 1,807,818 | 1,947,455 | 2,092,960 | 2,250,840 |



Chapter 6

Forecast Water and Wastewater Rates



6. Forecast Water and Wastewater Rates

To summarize the analysis presented thus far, Chapter 3 reviewed capital-related issues for all customers within the water and wastewater systems and responds to the lifecycle needs of the Town's infrastructure. Chapter 4 provided a review of capital financing options of which internal sources (i.e., reserve fund transfers) and external sources (i.e., grants and debt) will be the predominant basis for financing future capital needs. Chapter 5 established the 10-year operating forecast of expenditures for the Town's water and wastewater systems. This chapter presents the calculated rates over the next 10-year period. These calculations are based on the net operating expenditures identified in Chapter 5 and the customer counts and water volumes forecasted in Chapter 2.

6.1 Water Rates

The calculated rate forecasts are provided to address full costs of the water system, including annual operating and capital expenditures from a lifecycle perspective.

The resultant rate forecasts for each of the scenarios are presented in Table 6-1 to 6-3 below. The detailed financial forecast and rate calculations for water services are provided in Appendix A to this report.



Table 6-1
Town of Deep River
Water Rate Forecast – Base Scenario

| Description | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--|-----------|-----------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| Annual Flat Rate | \$ 628.42 | \$ 691.26 | \$ 760.39 | \$ 836.43 | \$ 920.07 | \$ 1,012.08 | \$ 1,073.69 | \$ 1,137.74 | \$ 1,205.62 | \$ 1,277.54 | \$ 1,353.76 |
| Annual Percentage Change | | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 6.1% | 6.0% | 6.0% | 6.0% | 6.0% |
| CNL Metered Rate (per m³) | \$ 0.88 | \$ 0.97 | \$ 1.06 | \$ 1.17 | \$ 1.29 | \$ 1.42 | \$ 1.50 | \$ 1.59 | \$ 1.69 | \$ 1.79 | \$ 1.90 |
| Annual Percentage Change | | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 6.1% | 6.0% | 6.0% | 6.0% | 6.0% |
| Fire Hose (Standpipe) Charge | \$ 492.66 | \$ 541.93 | \$ 596.12 | \$ 655.73 | \$ 721.30 | \$ 793.43 | \$ 841.74 | \$ 891.95 | \$ 945.16 | \$ 1,001.55 | \$ 1,061.30 |
| Annual Percentage Change | | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 6.1% | 6.0% | 6.0% | 6.0% | 6.0% |
| Water connection/disconnection charge | \$ 20.00 | \$ 20.40 | \$ 20.81 | \$ 21.22 | \$ 21.65 | \$ 22.08 | \$ 22.52 | \$ 22.97 | \$ 23.43 | \$ 23.90 | \$ 24.38 |
| Annual Percentage Change | | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% |

Table 6-2
Town of Deep River
Water Rate Forecast – Scenario 1

| Description | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--|-----------|-----------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| Annual Flat Rate | \$ 628.42 | \$ 691.26 | \$ 760.39 | \$ 836.43 | \$ 920.07 | \$ 1,012.08 | \$ 1,073.81 | \$ 1,122.07 | \$ 1,172.50 | \$ 1,225.20 | \$ 1,280.26 |
| Annual Percentage Change | | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 6.1% | 4.5% | 4.5% | 4.5% | 4.5% |
| CNL Metered Rate (per m³) | \$ 0.88 | \$ 0.97 | \$ 1.06 | \$ 1.17 | \$ 1.29 | \$ 1.42 | \$ 1.50 | \$ 1.57 | \$ 1.64 | \$ 1.72 | \$ 1.79 |
| Annual Percentage Change | | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 6.1% | 4.5% | 4.5% | 4.5% | 4.5% |
| Fire Hose (Standpipe) Charge | \$ 492.66 | \$ 541.93 | \$ 596.12 | \$ 655.73 | \$ 721.30 | \$ 793.43 | \$ 841.83 | \$ 879.67 | \$ 919.20 | \$ 960.51 | \$ 1,003.68 |
| Annual Percentage Change | | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 6.1% | 4.5% | 4.5% | 4.5% | 4.5% |
| Water connection/disconnection charge | \$ 20.00 | \$ 20.40 | \$ 20.81 | \$ 21.22 | \$ 21.65 | \$ 22.08 | \$ 22.52 | \$ 22.97 | \$ 23.43 | \$ 23.90 | \$ 24.38 |
| Annual Percentage Change | | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% |



Table 6-3
Town of Deep River
Water Rate Forecast – Scenario 2

| Description | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|
| Annual Flat Rate | \$ 628.42 | \$ 684.98 | \$ 746.63 | \$ 813.82 | \$ 870.79 | \$ 931.74 | \$ 996.97 | \$ 1,061.29 | \$ 1,129.77 | \$ 1,202.66 | \$ 1,280.26 |
| Annual Percentage Change | | 9.0% | 9.0% | 9.0% | 7.0% | 7.0% | 7.0% | 6.5% | 6.5% | 6.5% | 6.5% |
| CNL Metered Rate (per m³) | \$ 0.88 | \$ 0.96 | \$ 1.05 | \$ 1.14 | \$ 1.22 | \$ 1.30 | \$ 1.40 | \$ 1.49 | \$ 1.58 | \$ 1.68 | \$ 1.79 |
| Annual Percentage Change | | 9.0% | 9.0% | 9.0% | 7.0% | 7.0% | 7.0% | 6.5% | 6.5% | 6.5% | 6.5% |
| Fire Hose (Standpipe) Charge | \$ 492.66 | \$ 537.00 | \$ 585.33 | \$ 638.01 | \$ 682.67 | \$ 730.46 | \$ 781.59 | \$ 832.02 | \$ 885.70 | \$ 942.85 | \$ 1,003.68 |
| Annual Percentage Change | | 9.0% | 9.0% | 9.0% | 7.0% | 7.0% | 7.0% | 6.5% | 6.5% | 6.5% | 6.5% |
| Water connection/disconnection charge | \$ 20.00 | \$ 20.40 | \$ 20.81 | \$ 21.22 | \$ 21.65 | \$ 22.08 | \$ 22.52 | \$ 22.97 | \$ 23.43 | \$ 23.90 | \$ 24.38 |
| Annual Percentage Change | | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% |



6.2 Wastewater Rates

The calculated rate forecasts are provided to address full costs of the wastewater system, including annual operating and capital expenditures from a lifecycle perspective.

The resultant rate forecasts for each of the scenarios are presented in Tables 6-4 to 6-6 below. The detailed financial forecast and rate calculations for wastewater services are provided in Appendix B to this report.



Table 6-4
Town of Deep River
Wastewater Rate Forecast – Base Scenario

| Description | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|----------|
| Annual Flat Rate | 483.48 | 565.67 | 661.84 | 708.83 | 759.15 | 804.98 | 853.58 | 905.12 | 959.76 | 1,017.71 | 1,079.15 |
| Annual Percentage Change | | 17.0% | 17.0% | 7.1% | 7.1% | 6.0% | 6.0% | 6.0% | 6.0% | 6.0% | 6.0% |

Table 6-5
Town of Deep River
Wastewater Rate Forecast – Scenario 1

| Description | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| Annual Flat Rate | 483.48 | 565.67 | 661.84 | 708.83 | 759.15 | 804.98 | 842.32 | 881.39 | 922.28 | 965.05 | 1,009.82 |
| Annual Percentage Change | | 17.0% | 17.0% | 7.1% | 7.1% | 6.0% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% |

Table 6-6
Town of Deep River
Wastewater Rate Forecast – Scenario 2

| Description | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| Annual Flat Rate | 483.48 | 520.43 | 560.21 | 603.03 | 649.12 | 698.73 | 752.14 | 809.62 | 871.51 | 938.12 | 1,009.82 |
| Annual Percentage Change | | 7.6% | 7.6% | 7.6% | 7.6% | 7.6% | 7.6% | 7.6% | 7.6% | 7.6% | 7.6% |



6.3 Forecast Water and Wastewater Rate Impacts

Tables 6-7 to 6-9 summarize the impacts of the proposed rates on a typical residential customer for the three scenarios.

At current rates, the annual water and wastewater bill for a typical flat rate customer would total approximately \$1,112 (i.e. \$628 for water and \$483 for wastewater).

Under the Base Scenario the proposed 2021 annual bill would be approximately \$1,257 (i.e. \$691 for water and \$566 for wastewater). This represents a \$145 (13.0%) increase relative to what the bill would be based on the rates that are currently in effect. The annual water and wastewater bill for a flat rate customer would further increase by approximately 13.2% in 2022, 8.7% annually from 2023-2024, and 6.0% to 6.1% annually over the remainder of the forecast period.

Under Scenario 1 the proposed 2021 annual bill would be approximately \$1,257 (i.e. \$691 for water and \$566 for wastewater). This represents a \$145 (13.0%) increase relative to what the bill would be based on the rates that are currently in effect. The annual water and wastewater bill for a flat rate customer would further increase by approximately 13.2% in 2022, 8.7% annually from 2023-2024, 5.5% in 2025, and 4.6% annually over the remainder of the forecast period.

Under Scenario 2 the proposed 2021 annual bill would be approximately \$1,205 (i.e. \$685 for water and \$520 for wastewater). This represents a \$94 (8.4%) increase relative to what the bill would be based on the rates that are currently in effect. The annual water and wastewater bill for a flat rate customer would further increase by approximately 8.4% from 2022-2023, 7.3% annually from 2024-2026, and 7.0% annually over the remainder of the forecast period.



Table 6-7
Town of Deep River
Base Scenario
Annual Water and Wastewater Bill Impact – Typical Flat Rate Customer

| Base Case | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|----------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Water Flat Rate | \$628.42 | \$691.26 | \$760.39 | \$836.43 | \$920.07 | \$1,012.08 | \$1,073.69 | \$1,137.74 | \$1,205.62 | \$1,277.54 | \$1,353.76 |
| Sewer Service Flat Rate | \$483.48 | \$565.67 | \$661.84 | \$708.83 | \$759.15 | \$804.98 | \$853.58 | \$905.12 | \$959.76 | \$1,017.71 | \$1,079.15 |
| Total Annual Bill | \$1,111.90 | \$1,256.93 | \$1,422.22 | \$1,545.25 | \$1,679.22 | \$1,817.06 | \$1,927.27 | \$2,042.86 | \$2,165.38 | \$2,295.25 | \$2,432.91 |
| Annual Increase (%) | | 13.0% | 13.2% | 8.7% | 8.7% | 8.2% | 6.1% | 6.0% | 6.0% | 6.0% | 6.0% |
| Annual Increase (\$) | | \$ 145.03 | \$ 165.29 | \$ 123.03 | \$ 133.97 | \$ 137.84 | \$ 110.21 | \$ 115.59 | \$ 122.52 | \$ 129.87 | \$ 137.66 |
| Additional Monthly Amount | | \$ 12.09 | \$ 13.77 | \$ 10.25 | \$ 11.16 | \$ 11.49 | \$ 9.18 | \$ 9.63 | \$ 10.21 | \$ 10.82 | \$ 11.47 |

Table 6-8
Town of Deep River
Scenario 1
Annual Water and Wastewater Bill Impact – Typical Flat Rate Customer

| Scenario 1 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|----------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Water Flat Rate | \$628.42 | \$691.26 | \$760.39 | \$836.43 | \$920.07 | \$1,012.08 | \$1,073.81 | \$1,122.07 | \$1,172.50 | \$1,225.20 | \$1,280.26 |
| Sewer Service Flat Rate | \$483.48 | \$565.67 | \$661.84 | \$708.83 | \$759.15 | \$804.98 | \$842.32 | \$881.39 | \$922.28 | \$965.05 | \$1,009.82 |
| Total Annual Bill | \$1,111.90 | \$1,256.93 | \$1,422.22 | \$1,545.25 | \$1,679.22 | \$1,817.06 | \$1,916.14 | \$2,003.47 | \$2,094.78 | \$2,190.25 | \$2,290.08 |
| Annual Increase (%) | | 13.0% | 13.2% | 8.7% | 8.7% | 8.2% | 5.5% | 4.6% | 4.6% | 4.6% | 4.6% |
| Annual Increase (\$) | | \$ 145.03 | \$ 165.29 | \$ 123.03 | \$ 133.97 | \$ 137.84 | \$ 99.07 | \$ 87.33 | \$ 91.31 | \$ 95.47 | \$ 99.83 |
| Additional Monthly Amount | | \$ 12.09 | \$ 13.77 | \$ 10.25 | \$ 11.16 | \$ 11.49 | \$ 8.26 | \$ 7.28 | \$ 7.61 | \$ 7.96 | \$ 8.32 |



Table 6-9
Town of Deep River
Scenario 2
Annual Water and Wastewater Bill Impact – Typical Flat Rate Customer

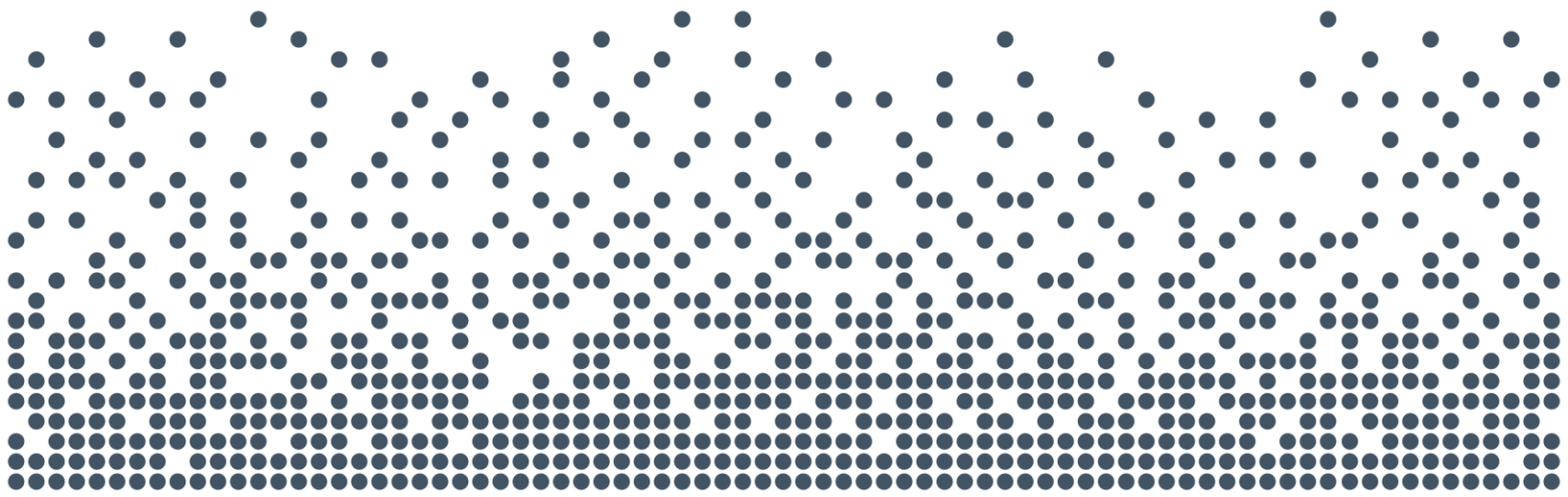
| Scenario 2 | 2020 | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|----------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Water Flat Rate | \$ 628.42 | \$ 684.98 | \$ 746.63 | \$ 813.82 | \$ 870.79 | \$ 931.74 | \$ 996.97 | \$ 1,061.29 | \$ 1,129.77 | \$ 1,202.66 | \$ 1,280.26 |
| Sewer Service Flat Rate | \$483.48 | \$520.43 | \$560.21 | \$603.03 | \$649.12 | \$698.73 | \$752.14 | \$809.62 | \$871.51 | \$938.12 | \$1,009.82 |
| Total Annual Bill | \$1,111.90 | \$1,205.41 | \$1,306.84 | \$1,416.85 | \$1,519.91 | \$1,630.48 | \$1,749.10 | \$1,870.92 | \$2,001.27 | \$2,140.78 | \$2,290.08 |
| Annual Increase (%) | | 8.4% | 8.4% | 8.4% | 7.3% | 7.3% | 7.3% | 7.0% | 7.0% | 7.0% | 7.0% |
| Annual Increase (\$) | | \$ 93.51 | \$ 101.43 | \$ 110.01 | \$ 103.06 | \$ 110.57 | \$ 118.63 | \$ 121.81 | \$ 130.36 | \$ 139.50 | \$ 149.30 |
| Additional Monthly Amount | | \$ 7.79 | \$ 8.45 | \$ 9.17 | \$ 8.59 | \$ 9.21 | \$ 9.89 | \$ 10.15 | \$ 10.86 | \$ 11.63 | \$ 12.44 |



6.4 Recommendations

Based upon the analysis in this report, the following recommendations are provided for Council's consideration:

1. That Council provide for the recovery of all water and wastewater costs through full cost recovery rates and maintain reserve funds for water and wastewater services;
2. That Council approve the 2021 water and wastewater rates presented under Scenario 2 as shown in Chapter 6;
3. That Council approve the Rate Study;
4. That Council direct staff to continue monitoring metered consumption and initiate a review of the Rate Study in 2023, including: a review of the rates and rate structure applicable to Canadian Nuclear Laboratories, a review of grant funding assumptions, review of asset lifecycle funding needs in alignment with the Town's asset management planning efforts, and assessment of water metering options; and
5. That if Council approves rates presented under Scenario 2 staff are directed to prepare a Development Charges Background Study.



Appendices



Appendix A

Water Services



**Table W-1a
Town of Deep River
Water Service
Capital Budget Forecast
Uninflated \$**

| Description | Total | Budget 2020 | Forecast | | | | | | | | | | |
|---|------------------|----------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | |
| Capital Expenditures | | | | | | | | | | | | | |
| OCWA - Major Capital | | | | | | | | | | | | | |
| Update Capital Plan for WTP | 20,000 | | - | 10,000 | - | - | - | - | - | 10,000 | | | |
| Inspection of coatings, cathodic protection system, mixing system, every 5 years. | 5,000 | | - | 5,000 | - | - | - | - | - | - | | | |
| Intake Inspection every 5 years | 4,000 | | - | - | - | 4,000 | - | - | - | - | | | |
| Allowance for inspection and minor repairs | 6,000 | | - | - | - | 6,000 | - | - | - | - | | | |
| Generator refurbishment | 10,000 | | - | - | - | - | 10,000 | - | - | - | | | |
| Chemical feed pumps | - | | - | - | - | - | - | - | - | - | | | |
| Actuators | 30,000 | | - | - | - | - | - | 10,000 | 10,000 | 10,000 | | | |
| Chlorinator | 90,000 | | - | 30,000 | - | 30,000 | - | - | - | 30,000 | | | |
| Backwash sump pump | 20,000 | | 10,000 | - | - | - | - | - | - | 10,000 | | | |
| Painting / refurbish water tower | - | | - | - | - | - | - | - | - | - | | | |
| Process actuators | 120,000 | | 40,000 | 40,000 | 40,000 | - | - | - | - | - | | | |
| Process turbidimeters | 36,000 | | 12,000 | 12,000 | 12,000 | - | - | - | - | - | | | |
| Process Chlorine analyzers | 25,000 | | 5,000 | 5,000 | 5,000 | 5,000 | 5,000 | - | - | - | | | |
| Fluoride Analyzer | 12,000 | | 12,000 | - | - | - | - | - | - | - | | | |
| Filter #2 upgrade | 150,000 | | - | - | - | 150,000 | - | - | - | - | | | |
| Chemical feed pumps | 28,000 | | 13,000 | - | - | - | - | - | 15,000 | - | | | |
| Replace boilers | 120,000 | | - | 120,000 | - | - | - | - | - | - | | | |
| Other | | | | | | | | | | | | | |
| Water Treatment Plant Fire Alarm System | 19,000 | | 19,000 | | | | | | | | | | |
| Water Tower Assessment and rehabilitation | 1,500,000 | | | 1,500,000 | | | | | | | | | |
| Watermain Lining - Phase I | 563,000 | | | 563,000 | | | | | | | | | |
| Watermain Lining - Phase II | 2,815,000 | | | | 563,000 | 563,000 | 563,000 | 563,000 | 563,000 | | | | |
| Watermain Lining - Phase III | 1,689,000 | | | | | | | | | 563,000 | 563,000 | 563,000 | |
| Brockhouse Way Construction | 800,000 | | | 800,000 | | | | | | | | | |
| Total Capital Expenditures | 8,062,000 | - | 111,000 | 3,085,000 | 620,000 | 758,000 | 588,000 | 588,000 | 588,000 | 623,000 | 563,000 | 563,000 | 563,000 |



BASE SCENARIO



**Table W-1
Town of Deep River
Water Service
Base Scenario
Capital Budget Forecast
Inflated \$**

| Description | Total | Forecast | | | | | | | | | |
|---|------------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Expenditures | | | | | | | | | | | |
| OCWA - Major Capital | | | | | | | | | | | |
| Update Capital Plan for WTP | 24,000 | - | 11,000 | - | - | - | - | 13,000 | - | - | - |
| Inspection of coatings, cathodic protection system, mixing system, every 5 years. | 5,000 | - | 5,000 | - | - | - | - | - | - | - | - |
| Intake Inspection every 5 years | 5,000 | - | - | - | 5,000 | - | - | - | - | - | - |
| Allowance for inspection and minor repairs | 7,000 | - | - | - | 7,000 | - | - | - | - | - | - |
| Generator refurbishment | 12,000 | - | - | - | - | 12,000 | - | - | - | - | - |
| Chemical feed pumps | - | - | - | - | - | - | - | - | - | - | - |
| Actuators | 37,000 | - | - | - | - | 12,000 | 12,000 | 13,000 | - | - | - |
| Chlorinator | 104,000 | - | 32,000 | - | 34,000 | - | - | 38,000 | - | - | - |
| Backwash sump pump | 23,000 | 10,000 | - | - | - | - | - | 13,000 | - | - | - |
| Painting / refurbish water tower | - | - | - | - | - | - | - | - | - | - | - |
| Process actuators | 128,000 | 41,000 | 43,000 | 44,000 | - | - | - | - | - | - | - |
| Process turbidimeters | 38,000 | 12,000 | 13,000 | 13,000 | - | - | - | - | - | - | - |
| Process Chlorine analyzers | 28,000 | 5,000 | 5,000 | 6,000 | 6,000 | 6,000 | - | - | - | - | - |
| Fluoride Analyzer | 12,000 | 12,000 | - | - | - | - | - | - | - | - | - |
| Filter #2 upgrade | 172,000 | - | - | - | 172,000 | - | - | - | - | - | - |
| Chemical feed pumps | 31,000 | 13,000 | - | - | - | - | 18,000 | - | - | - | - |
| Replace boilers | 128,000 | - | 128,000 | - | - | - | - | - | - | - | - |
| Other | | | | | | | | | | | |
| Water Treatment Plant Fire Alarm System | 20,000 | 20,000 | - | - | - | - | - | - | - | - | - |
| Water Tower Assessment and rehabilitation | 1,605,000 | - | 1,605,000 | - | - | - | - | - | - | - | - |
| Watermain Lining - Phase I | 603,000 | - | 603,000 | - | - | - | - | - | - | - | - |
| Watermain Lining - Phase II | 3,339,000 | - | - | 623,000 | 645,000 | 667,000 | 690,000 | 714,000 | - | - | - |
| Watermain Lining - Phase III | 2,293,000 | - | - | - | - | - | - | - | 739,000 | 764,000 | 790,000 |
| Brockhouse Way Construction | 856,000 | - | 856,000 | - | - | - | - | - | - | - | - |
| Total Capital Expenditures | 9,470,000 | 113,000 | 3,301,000 | 686,000 | 869,000 | 697,000 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |



Table W-1
Town of Deep River
Water Service
Base Scenario
Capital Budget Forecast
 Inflated \$

| Description | Total | Forecast | | | | | | | | | |
|--------------------------------|------------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Financing | | | | | | | | | | | |
| Provincial/Federal Grants | 570,667 | - | 570,667 | - | - | - | - | - | - | - | - |
| Debenture Requirements | 3,606,453 | - | 2,431,252 | 500,342 | 517,698 | 157,160 | - | - | - | - | - |
| Operating Contributions | - | - | - | - | - | - | - | - | - | - | - |
| Water Reserve | 5,292,880 | 113,000 | 299,081 | 185,658 | 351,302 | 539,840 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |
| Total Capital Financing | 9,470,000 | 113,000 | 3,301,000 | 686,000 | 869,000 | 697,000 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |

Table W-2
Town of Deep River
Water Service
Base Scenario
Schedule of Debenture Repayments
 Inflated \$

| Debenture Year | Principal (Inflated) | Forecast | | | | | | | | | |
|----------------------------------|----------------------|----------|----------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| 2021 | - | | - | - | - | - | - | - | - | - | - |
| 2022 | 2,431,252 | | | 178,896 | 178,896 | 178,896 | 178,896 | 178,896 | 178,896 | 178,896 | 178,896 |
| 2023 | 500,342 | | | | 36,816 | 36,816 | 36,816 | 36,816 | 36,816 | 36,816 | 36,816 |
| 2024 | 517,698 | | | | | 38,093 | 38,093 | 38,093 | 38,093 | 38,093 | 38,093 |
| 2025 | 157,160 | | | | | | 11,564 | 11,564 | 11,564 | 11,564 | 11,564 |
| 2026 | - | | | | | | | - | - | - | - |
| 2027 | - | | | | | | | | - | - | - |
| 2028 | - | | | | | | | | | - | - |
| 2029 | - | | | | | | | | | | - |
| 2030 | - | | | | | | | | | | |
| Total Annual Debt Charges | 3,606,453 | - | - | 178,896 | 215,712 | 253,805 | 265,369 | 265,369 | 265,369 | 265,369 | 265,369 |



Table W-3
Town of Deep River
Water Service
Base Scenario
Water Reserves/ Reserve Funds Continuity
Inflated \$

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|-------------------------|----------------|---------|---------|---------|---------|---------|---------------|----------------|----------------|------------------|
| Opening Balance | 202,869 | 110,423 | - | - | - | - | - | 85,914 | 396,125 | 860,989 |
| Transfer from Operating | 18,389 | 188,657 | 185,658 | 351,302 | 539,840 | 720,000 | 875,229 | 1,041,444 | 1,211,982 | 1,395,071 |
| Transfer to Capital | 113,000 | 299,081 | 185,658 | 351,302 | 539,840 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |
| Transfer to Operating | - | - | - | - | - | - | - | - | - | - |
| Closing Balance | 108,258 | - | - | - | - | - | 84,229 | 388,358 | 844,107 | 1,466,060 |
| Interest | 2,165 | - | - | - | - | - | 1,685 | 7,767 | 16,882 | 29,321 |



Table W-4
Town of Deep River
Water Services
Base Scenario
Operating Budget Forecast
 Inflated \$

| Description | Forecast | | | | | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| EXPENDITURES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Administration - Corporate | - | - | - | - | - | - | - | - | - | - |
| Administration - Water | 66,166 | 67,510 | 68,720 | 70,330 | 71,640 | 73,050 | 74,560 | 76,070 | 77,490 | 79,100 |
| Water Treatment | 583,936 | 595,600 | 607,500 | 619,700 | 632,100 | 644,700 | 657,600 | 670,800 | 684,200 | 697,900 |
| Distribution/Transmission | 401,556 | 409,600 | 417,800 | 426,100 | 434,600 | 443,400 | 452,300 | 461,300 | 470,400 | 480,000 |
| Facility Maintenance | - | - | - | - | - | - | - | - | - | - |
| Facility Operations | 256,825 | 261,950 | 267,270 | 272,580 | 277,990 | 283,610 | 289,220 | 294,940 | 300,950 | 307,070 |
| Sub Total Operating | 1,410,983 | 1,439,260 | 1,467,890 | 1,497,510 | 1,527,230 | 1,557,960 | 1,589,080 | 1,620,810 | 1,653,140 | 1,686,570 |
| Capital-Related | | | | | | | | | | |
| Existing Debt (Principal) | 136,951 | 140,883 | 145,019 | 149,371 | 153,949 | 133,149 | 137,151 | 141,372 | 145,825 | 150,522 |
| Existing Debt (Interest) | 256,233 | 252,146 | 247,928 | 243,642 | 239,063 | 208,784 | 202,889 | 196,826 | 190,427 | 183,835 |
| New Debt (Principal) | - | - | 81,646 | 101,714 | 123,168 | 133,372 | 138,707 | 144,255 | 150,025 | 156,026 |
| New Debt (Interest) | - | - | 97,250 | 113,998 | 130,637 | 131,997 | 126,662 | 121,114 | 115,344 | 109,343 |
| Transfer to Capital | - | - | - | - | - | - | - | - | - | - |
| Transfer to Capital Reserve | 18,389 | 188,657 | 185,658 | 351,302 | 539,840 | 720,000 | 875,229 | 1,041,444 | 1,211,982 | 1,395,071 |
| Sub Total Capital Related | 411,573 | 581,686 | 757,500 | 960,026 | 1,186,656 | 1,327,302 | 1,480,637 | 1,645,011 | 1,813,602 | 1,994,798 |
| Total Expenditures | 1,822,556 | 2,020,946 | 2,225,390 | 2,457,536 | 2,713,886 | 2,885,262 | 3,069,717 | 3,265,821 | 3,466,742 | 3,681,368 |
| REVENUES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Fire Hose (Standpipe) Charge | 8,003 | 8,803 | 9,683 | 10,651 | 11,716 | 12,430 | 13,171 | 13,957 | 14,790 | 15,672 |
| Hydrant Rental | 29,337 | 32,271 | 35,498 | 39,048 | 42,952 | 45,567 | 48,286 | 51,166 | 54,219 | 57,453 |
| Water on/off charge | 714 | 730 | 740 | 760 | 770 | 790 | 800 | 820 | 840 | 850 |
| Non-resident Surcharge | 604 | 664 | 731 | 804 | 884 | 938 | 994 | 1,053 | 1,116 | 1,183 |
| Miscellaneous Revenues (Penalties & Interest, Permits & Fees, Administrative Fees,) | 6,580 | 6,700 | 5,600 | 5,700 | 5,800 | 5,900 | 6,100 | 6,200 | 6,300 | 6,400 |
| Total Operating Revenue | 45,237 | 49,168 | 52,252 | 56,963 | 62,123 | 65,625 | 69,351 | 73,196 | 77,264 | 81,558 |



Table W-4
Town of Deep River
Water Services
Base Scenario
Operating Budget Forecast
 Inflated \$

| Description | Forecast | | | | | | | | | |
|------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Billing | | | | | | | | | | |
| Residential Billing | 1,146,804 | 1,278,213 | 1,410,216 | 1,561,358 | 1,728,627 | 1,840,303 | 1,962,607 | 2,092,954 | 2,224,204 | 2,365,018 |
| Multi-Residential Billing | 158,299 | 174,129 | 191,542 | 210,696 | 231,766 | 245,875 | 260,543 | 276,087 | 292,557 | 310,011 |
| Commercial Billing | 177,654 | 195,420 | 214,962 | 236,458 | 260,104 | 275,938 | 292,400 | 309,844 | 328,329 | 347,916 |
| Commercial Billing - CRL | 289,722 | 318,695 | 350,564 | 385,621 | 424,183 | 450,006 | 476,852 | 505,300 | 535,445 | 567,389 |
| Town Properties | 14,517 | 15,968 | 17,565 | 19,321 | 21,254 | 22,547 | 23,893 | 25,318 | 26,828 | 28,429 |
| Total Billing Revenue | 1,786,996 | 1,982,424 | 2,184,849 | 2,413,454 | 2,665,932 | 2,834,669 | 3,016,295 | 3,209,503 | 3,407,363 | 3,618,763 |
| Less: Water on/off Discount | 9,678 | 10,645 | 11,710 | 12,881 | 14,169 | 15,032 | 15,928 | 16,879 | 17,886 | 18,953 |
| Total Revenues | 1,822,556 | 2,020,946 | 2,225,390 | 2,457,536 | 2,713,886 | 2,885,262 | 3,069,717 | 3,265,821 | 3,466,742 | 3,681,368 |

Table W-5
Town of Deep River
Water Services
Base Scenario
Water Rate Forecast
 Inflated \$

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--|-----------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| Annual Flat Rate | \$ 691.26 | \$ 760.39 | \$ 836.43 | \$ 920.07 | \$ 1,012.08 | \$ 1,073.69 | \$ 1,137.74 | \$ 1,205.62 | \$ 1,277.54 | \$ 1,353.76 |
| Annual Percentage Change | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 6.1% | 6.0% | 6.0% | 6.0% | 6.0% |
| CNL Metered Rate (per m³) | \$ 0.97 | \$ 1.06 | \$ 1.17 | \$ 1.29 | \$ 1.42 | \$ 1.50 | \$ 1.59 | \$ 1.69 | \$ 1.79 | \$ 1.90 |
| Annual Percentage Change | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 6.1% | 6.0% | 6.0% | 6.0% | 6.0% |
| Fire Hose (Standpipe) Charge | \$ 541.93 | \$ 596.12 | \$ 655.73 | \$ 721.30 | \$ 793.43 | \$ 841.74 | \$ 891.95 | \$ 945.16 | \$ 1,001.55 | \$ 1,061.30 |
| Annual Percentage Change | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 6.1% | 6.0% | 6.0% | 6.0% | 6.0% |
| Water connection/disconnection charge | \$ 20.40 | \$ 20.81 | \$ 21.22 | \$ 21.65 | \$ 22.08 | \$ 22.52 | \$ 22.97 | \$ 23.43 | \$ 23.90 | \$ 24.38 |
| Annual Percentage Change | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% |



SCENARIO 1



**Table W-6
Town of Deep River
Water Service
Scenario 1
Capital Budget Forecast
Inflated \$**

| Description | Total | Forecast | | | | | | | | | |
|---|------------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Expenditures | | | | | | | | | | | |
| OCWA - Major Capital | | | | | | | | | | | |
| Update Capital Plan for WTP | 24,000 | - | 11,000 | - | - | - | - | 13,000 | - | - | - |
| Inspection of coatings, cathodic protection system, mixing system, every 5 years. | 5,000 | - | 5,000 | - | - | - | - | - | - | - | - |
| Intake Inspection every 5 years | 5,000 | - | - | - | 5,000 | - | - | - | - | - | - |
| Allowance for inspection and minor repairs | 7,000 | - | - | - | 7,000 | - | - | - | - | - | - |
| Generator refurbishment | 12,000 | - | - | - | - | 12,000 | - | - | - | - | - |
| Chemical feed pumps | - | - | - | - | - | - | - | - | - | - | - |
| Actuators | 37,000 | - | - | - | - | 12,000 | 12,000 | 13,000 | - | - | - |
| Chlorinator | 104,000 | - | 32,000 | - | 34,000 | - | - | 38,000 | - | - | - |
| Backwash sump pump | 23,000 | 10,000 | - | - | - | - | - | 13,000 | - | - | - |
| Painting / refurbish water tower | - | - | - | - | - | - | - | - | - | - | - |
| Process actuators | 128,000 | 41,000 | 43,000 | 44,000 | - | - | - | - | - | - | - |
| Process turbidimeters | 38,000 | 12,000 | 13,000 | 13,000 | - | - | - | - | - | - | - |
| Process Chlorine analyzers | 28,000 | 5,000 | 5,000 | 6,000 | 6,000 | 6,000 | - | - | - | - | - |
| Fluoride Analyzer | 12,000 | 12,000 | - | - | - | - | - | - | - | - | - |
| Filter #2 upgrade | 172,000 | - | - | - | 172,000 | - | - | - | - | - | - |
| Chemical feed pumps | 31,000 | 13,000 | - | - | - | - | 18,000 | - | - | - | - |
| Replace boilers | 128,000 | - | 128,000 | - | - | - | - | - | - | - | - |
| Other | | | | | | | | | | | |
| Water Treatment Plant Fire Alarm System | 20,000 | 20,000 | - | - | - | - | - | - | - | - | - |
| Water Tower Assessment and rehabilitation | 1,605,000 | - | 1,605,000 | - | - | - | - | - | - | - | - |
| Watermain Lining - Phase I | 603,000 | - | 603,000 | - | - | - | - | - | - | - | - |
| Watermain Lining - Phase II | 3,339,000 | - | - | 623,000 | 645,000 | 667,000 | 690,000 | 714,000 | - | - | - |
| Watermain Lining - Phase III | 2,293,000 | - | - | - | - | - | - | - | 739,000 | 764,000 | 790,000 |
| Brockhouse Way Construction | 856,000 | - | 856,000 | - | - | - | - | - | - | - | - |
| Total Capital Expenditures | 9,470,000 | 113,000 | 3,301,000 | 686,000 | 869,000 | 697,000 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |



Table W-6
Town of Deep River
Water Service
Scenario 1
Capital Budget Forecast
 Inflated \$

| Description | Total | Forecast | | | | | | | | | |
|--------------------------------|------------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Financing | | | | | | | | | | | |
| Provincial/Federal Grants | 570,667 | - | 570,667 | - | - | - | - | - | - | - | - |
| Debenture Requirements | 3,606,453 | - | 2,431,252 | 500,342 | 517,698 | 157,160 | - | - | - | - | - |
| Operating Contributions | - | - | - | - | - | - | - | - | - | - | - |
| Water Reserve | 5,292,880 | 113,000 | 299,081 | 185,658 | 351,302 | 539,840 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |
| Total Capital Financing | 9,470,000 | 113,000 | 3,301,000 | 686,000 | 869,000 | 697,000 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |

Table W-7
Town of Deep River
Water Service
Scenario 1
Schedule of Debenture Repayments
 Inflated \$

| Debenture Year | Principal (Inflated) | Forecast | | | | | | | | | |
|----------------------------------|----------------------|----------|----------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| 2021 | - | | - | - | - | - | - | - | - | - | - |
| 2022 | 2,431,252 | | | 178,896 | 178,896 | 178,896 | 178,896 | 178,896 | 178,896 | 178,896 | 178,896 |
| 2023 | 500,342 | | | | 36,816 | 36,816 | 36,816 | 36,816 | 36,816 | 36,816 | 36,816 |
| 2024 | 517,698 | | | | | 38,093 | 38,093 | 38,093 | 38,093 | 38,093 | 38,093 |
| 2025 | 157,160 | | | | | | 11,564 | 11,564 | 11,564 | 11,564 | 11,564 |
| 2026 | - | | | | | | | - | - | - | - |
| 2027 | - | | | | | | | | - | - | - |
| 2028 | - | | | | | | | | | - | - |
| 2029 | - | | | | | | | | | | - |
| 2030 | - | | | | | | | | | | |
| Total Annual Debt Charges | 3,606,453 | - | - | 178,896 | 215,712 | 253,805 | 265,369 | 265,369 | 265,369 | 265,369 | 265,369 |



Table W-8
Town of Deep River
Water Service
Scenario 1
Water Reserves/ Reserve Funds Continuity
Inflated \$

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|-------------------------|----------------|---------|---------|---------|---------|------------|---------------|----------------|----------------|----------------|
| Opening Balance | 202,869 | 110,423 | - | - | - | - | 340 | 43,232 | 261,284 | 578,859 |
| Transfer from Operating | 18,389 | 188,657 | 185,658 | 351,302 | 539,840 | 720,333 | 833,045 | 951,928 | 1,070,225 | 1,195,592 |
| Transfer to Capital | 113,000 | 299,081 | 185,658 | 351,302 | 539,840 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |
| Transfer to Operating | - | - | - | - | - | - | - | - | - | - |
| Closing Balance | 108,258 | - | - | - | - | 333 | 42,385 | 256,161 | 567,509 | 984,451 |
| Interest | 2,165 | - | - | - | - | 7 | 848 | 5,123 | 11,350 | 19,689 |



Table W-9
Town of Deep River
Water Services
Scenario 1
Operating Budget Forecast
 Inflated \$

| Description | Forecast | | | | | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| EXPENDITURES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Administration - Corporate | - | - | - | - | - | - | - | - | - | - |
| Administration - Water | 66,166 | 67,510 | 68,720 | 70,330 | 71,640 | 73,050 | 74,560 | 76,070 | 77,490 | 79,100 |
| Water Treatment | 583,936 | 595,600 | 607,500 | 619,700 | 632,100 | 644,700 | 657,600 | 670,800 | 684,200 | 697,900 |
| Distribution/Transmission | 401,556 | 409,600 | 417,800 | 426,100 | 434,600 | 443,400 | 452,300 | 461,300 | 470,400 | 480,000 |
| Facility Maintenance | - | - | - | - | - | - | - | - | - | - |
| Facility Operations | 256,825 | 261,950 | 267,270 | 272,580 | 277,990 | 283,610 | 289,220 | 294,940 | 300,950 | 307,070 |
| Sub Total Operating | 1,410,983 | 1,439,260 | 1,467,890 | 1,497,510 | 1,527,230 | 1,557,960 | 1,589,080 | 1,620,810 | 1,653,140 | 1,686,570 |
| Capital-Related | | | | | | | | | | |
| Existing Debt (Principal) | 136,951 | 140,883 | 145,019 | 149,371 | 153,949 | 133,149 | 137,151 | 141,372 | 145,825 | 150,522 |
| Existing Debt (Interest) | 256,233 | 252,146 | 247,928 | 243,642 | 239,063 | 208,784 | 202,889 | 196,826 | 190,427 | 183,835 |
| New Debt (Principal) | - | - | 81,646 | 101,714 | 123,168 | 133,372 | 138,707 | 144,255 | 150,025 | 156,026 |
| New Debt (Interest) | - | - | 97,250 | 113,998 | 130,637 | 131,997 | 126,662 | 121,114 | 115,344 | 109,343 |
| Transfer to Capital | - | - | - | - | - | - | - | - | - | - |
| Transfer to Capital Reserve | 18,389 | 188,657 | 185,658 | 351,302 | 539,840 | 720,333 | 833,045 | 951,928 | 1,070,225 | 1,195,592 |
| Sub Total Capital Related | 411,573 | 581,686 | 757,500 | 960,026 | 1,186,656 | 1,327,635 | 1,438,453 | 1,555,495 | 1,671,846 | 1,795,319 |
| Total Expenditures | 1,822,556 | 2,020,946 | 2,225,390 | 2,457,536 | 2,713,886 | 2,885,595 | 3,027,533 | 3,176,305 | 3,324,986 | 3,481,889 |
| REVENUES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Fire Hose (Standpipe) Charge | 8,003 | 8,803 | 9,683 | 10,651 | 11,716 | 12,431 | 12,990 | 13,574 | 14,184 | 14,821 |
| Hydrant Rental | 29,337 | 32,271 | 35,498 | 39,048 | 42,952 | 45,572 | 47,621 | 49,761 | 51,997 | 54,334 |
| Water on/off charge | 714 | 730 | 740 | 760 | 770 | 790 | 800 | 820 | 840 | 850 |
| Non-resident Surcharge | 604 | 664 | 731 | 804 | 884 | 938 | 980 | 1,024 | 1,070 | 1,118 |
| Miscellaneous Revenues (Penalties & Interest, Permits & Fees, Administrative Fees,) | 6,580 | 6,700 | 5,600 | 5,700 | 5,800 | 5,900 | 6,100 | 6,200 | 6,300 | 6,400 |
| Total Operating Revenue | 45,237 | 49,168 | 52,252 | 56,963 | 62,123 | 65,632 | 68,491 | 71,379 | 74,391 | 77,524 |



Table W-9
Town of Deep River
Water Services
Scenario 1
Operating Budget Forecast
 Inflated \$

| Description | Forecast | | | | | | | | | |
|------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Billing | | | | | | | | | | |
| Residential Billing | 1,146,804 | 1,278,213 | 1,410,216 | 1,561,358 | 1,728,627 | 1,840,516 | 1,935,576 | 2,035,463 | 2,133,067 | 2,236,614 |
| Multi-Residential Billing | 158,299 | 174,129 | 191,542 | 210,696 | 231,766 | 245,903 | 256,955 | 268,503 | 280,570 | 293,179 |
| Commercial Billing | 177,654 | 195,420 | 214,962 | 236,458 | 260,104 | 275,970 | 288,373 | 301,333 | 314,876 | 329,027 |
| Commercial Billing - CRL | 289,722 | 318,695 | 350,564 | 385,621 | 424,183 | 450,058 | 470,284 | 491,420 | 513,506 | 536,584 |
| Town Properties | 14,517 | 15,968 | 17,565 | 19,321 | 21,254 | 22,550 | 23,564 | 24,623 | 25,729 | 26,885 |
| Total Billing Revenue | 1,786,996 | 1,982,424 | 2,184,849 | 2,413,454 | 2,665,932 | 2,834,997 | 2,974,751 | 3,121,341 | 3,267,747 | 3,422,289 |
| Less: Water on/off Discount | 9,678 | 10,645 | 11,710 | 12,881 | 14,169 | 15,033 | 15,709 | 16,415 | 17,153 | 17,924 |
| Total Revenues | 1,822,556 | 2,020,946 | 2,225,390 | 2,457,536 | 2,713,886 | 2,885,595 | 3,027,533 | 3,176,305 | 3,324,986 | 3,481,889 |

Table W-10
Town of Deep River
Water Services
Scenario 1
Water Rate Forecast
 Inflated \$

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--|-----------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|-------------|-------------|
| Annual Flat Rate | \$ 691.26 | \$ 760.39 | \$ 836.43 | \$ 920.07 | \$ 1,012.08 | \$ 1,073.81 | \$ 1,122.07 | \$ 1,172.50 | \$ 1,225.20 | \$ 1,280.26 |
| Annual Percentage Change | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 6.1% | 4.5% | 4.5% | 4.5% | 4.5% |
| CNL Metered Rate (per m³) | \$ 0.97 | \$ 1.06 | \$ 1.17 | \$ 1.29 | \$ 1.42 | \$ 1.50 | \$ 1.57 | \$ 1.64 | \$ 1.72 | \$ 1.79 |
| Annual Percentage Change | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 6.1% | 4.5% | 4.5% | 4.5% | 4.5% |
| Fire Hose (Standpipe) Charge | \$ 541.93 | \$ 596.12 | \$ 655.73 | \$ 721.30 | \$ 793.43 | \$ 841.83 | \$ 879.67 | \$ 919.20 | \$ 960.51 | \$ 1,003.68 |
| Annual Percentage Change | 10.0% | 10.0% | 10.0% | 10.0% | 10.0% | 6.1% | 4.5% | 4.5% | 4.5% | 4.5% |
| Water connection/disconnection charge | \$ 20.40 | \$ 20.81 | \$ 21.22 | \$ 21.65 | \$ 22.08 | \$ 22.52 | \$ 22.97 | \$ 23.43 | \$ 23.90 | \$ 24.38 |
| Annual Percentage Change | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% |



SCENARIO 2



Table W-11
Town of Deep River
Water Service
Scenario 2
Capital Budget Forecast
 Inflated \$

| Description | Total | Forecast | | | | | | | | | |
|---|------------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Expenditures | | | | | | | | | | | |
| OCWA - Major Capital | | | | | | | | | | | |
| Update Capital Plan for WTP | 24,000 | - | 11,000 | - | - | - | - | 13,000 | - | - | - |
| Inspection of coatings, cathodic protection system, mixing system, every 5 years. | 5,000 | - | 5,000 | - | - | - | - | - | - | - | - |
| Intake Inspection every 5 years | 5,000 | - | - | - | 5,000 | - | - | - | - | - | - |
| Allowance for inspection and minor repairs | 7,000 | - | - | - | 7,000 | - | - | - | - | - | - |
| Generator refurbishment | 12,000 | - | - | - | - | 12,000 | - | - | - | - | - |
| Chemical feed pumps | - | - | - | - | - | - | - | - | - | - | - |
| Actuators | 37,000 | - | - | - | - | 12,000 | 12,000 | 13,000 | - | - | - |
| Chlorinator | 104,000 | - | 32,000 | - | 34,000 | - | - | 38,000 | - | - | - |
| Backwash sump pump | 23,000 | 10,000 | - | - | - | - | - | 13,000 | - | - | - |
| Painting / refurbish water tower | - | - | - | - | - | - | - | - | - | - | - |
| Process actuators | 128,000 | 41,000 | 43,000 | 44,000 | - | - | - | - | - | - | - |
| Process turbidimeters | 38,000 | 12,000 | 13,000 | 13,000 | - | - | - | - | - | - | - |
| Process Chlorine analyzers | 28,000 | 5,000 | 5,000 | 6,000 | 6,000 | 6,000 | - | - | - | - | - |
| Fluoride Analyzer | 12,000 | 12,000 | - | - | - | - | - | - | - | - | - |
| Filter #2 upgrade | 172,000 | - | - | - | 172,000 | - | - | - | - | - | - |
| Chemical feed pumps | 31,000 | 13,000 | - | - | - | - | 18,000 | - | - | - | - |
| Replace boilers | 128,000 | - | 128,000 | - | - | - | - | - | - | - | - |
| Other | | | | | | | | | | | |
| Water Treatment Plant Fire Alarm System | 20,000 | 20,000 | - | - | - | - | - | - | - | - | - |
| Water Tower Assessment and rehabilitation | 1,605,000 | - | 1,605,000 | - | - | - | - | - | - | - | - |
| Watermain Lining - Phase I | 603,000 | - | 603,000 | - | - | - | - | - | - | - | - |
| Watermain Lining - Phase II | 3,339,000 | - | - | 623,000 | 645,000 | 667,000 | 690,000 | 714,000 | - | - | - |
| Watermain Lining - Phase III | 2,293,000 | - | - | - | - | - | - | - | 739,000 | 764,000 | 790,000 |
| Brockhouse Way Construction | 856,000 | - | 856,000 | - | - | - | - | - | - | - | - |
| Total Capital Expenditures | 9,470,000 | 113,000 | 3,301,000 | 686,000 | 869,000 | 697,000 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |



**Table W-11
Town of Deep River
Water Service
Scenario 2
Capital Budget Forecast
Inflated \$**

| Description | Total | Forecast | | | | | | | | | |
|--------------------------------|------------------|----------------|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Financing | | | | | | | | | | | |
| Provincial/Federal Grants | 2,262,667 | - | 972,667 | 415,333 | 430,000 | 444,667 | - | - | - | - | - |
| Debenture Requirements | 2,367,133 | - | 2,082,528 | 119,320 | 165,285 | - | - | - | - | - | - |
| Operating Contributions | - | - | - | - | - | - | - | - | - | - | - |
| Water Reserve | 4,840,200 | 113,000 | 245,806 | 151,346 | 273,715 | 252,333 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |
| Total Capital Financing | 9,470,000 | 113,000 | 3,301,000 | 686,000 | 869,000 | 697,000 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |

**Table W-12
Town of Deep River
Water Service
Scenario 2
Schedule of Debenture Repayments
Inflated \$**

| Debenture Year | Principal (Inflated) | Forecast | | | | | | | | | |
|----------------------------------|----------------------|----------|----------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| 2021 | - | | - | - | - | - | - | - | - | - | - |
| 2022 | 2,082,528 | | | 153,236 | 153,236 | 153,236 | 153,236 | 153,236 | 153,236 | 153,236 | 153,236 |
| 2023 | 119,320 | | | | 8,780 | 8,780 | 8,780 | 8,780 | 8,780 | 8,780 | 8,780 |
| 2024 | 165,285 | | | | | 12,162 | 12,162 | 12,162 | 12,162 | 12,162 | 12,162 |
| 2025 | - | | | | | | - | - | - | - | - |
| 2026 | - | | | | | | | - | - | - | - |
| 2027 | - | | | | | | | | - | - | - |
| 2028 | - | | | | | | | | | - | - |
| 2029 | - | | | | | | | | | | - |
| 2030 | - | | | | | | | | | | |
| Total Annual Debt Charges | 2,367,133 | - | - | 153,236 | 162,016 | 174,178 | 174,178 | 174,178 | 174,178 | 174,178 | 174,178 |



Table W-13
Town of Deep River
Water Service
Scenario 2
Water Reserves/ Reserve Funds Continuity
 Inflated \$

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|-------------------------|---------------|----------|----------|----------|----------------|---------------|---------------|----------------|----------------|------------------|
| Opening Balance | 202,869 | 93,591 | - | - | - | 155,291 | 41,605 | 11,444 | 204,057 | 551,260 |
| Transfer from Operating | 1,887 | 152,214 | 151,346 | 273,715 | 404,579 | 605,499 | 760,614 | 927,612 | 1,100,394 | 1,286,783 |
| Transfer to Capital | 113,000 | 245,806 | 151,346 | 273,715 | 252,333 | 720,000 | 791,000 | 739,000 | 764,000 | 790,000 |
| Transfer to Operating | - | - | - | - | - | - | - | - | - | - |
| Closing Balance | 91,756 | - | - | - | 152,246 | 40,789 | 11,220 | 200,056 | 540,451 | 1,048,043 |
| Interest | 1,835 | - | - | - | 3,045 | 816 | 224 | 4,001 | 10,809 | 20,961 |



Table W-14
Town of Deep River
Water Services
Scenario 2
Operating Budget Forecast
 Inflated \$

| Description | Forecast | | | | | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| EXPENDITURES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Administration - Corporate | - | - | - | - | - | - | - | - | - | - |
| Administration - Water | 66,166 | 67,510 | 68,720 | 70,330 | 71,640 | 73,050 | 74,560 | 76,070 | 77,490 | 79,100 |
| Water Treatment | 583,936 | 595,600 | 607,500 | 619,700 | 632,100 | 644,700 | 657,600 | 670,800 | 684,200 | 697,900 |
| Distribution/Transmission | 401,556 | 409,600 | 417,800 | 426,100 | 434,600 | 443,400 | 452,300 | 461,300 | 470,400 | 480,000 |
| Facility Maintenance | - | - | - | - | - | - | - | - | - | - |
| Facility Operations | 359,325 | 366,550 | 373,870 | 381,380 | 388,890 | 396,810 | 404,620 | 412,640 | 421,050 | 429,570 |
| Sub Total Operating | 1,410,983 | 1,439,260 | 1,467,890 | 1,497,510 | 1,527,230 | 1,557,960 | 1,589,080 | 1,620,810 | 1,653,140 | 1,686,570 |
| Capital-Related | | | | | | | | | | |
| Existing Debt (Principal) | 136,951 | 140,883 | 145,019 | 149,371 | 153,949 | 133,149 | 137,151 | 141,372 | 145,825 | 150,522 |
| Existing Debt (Interest) | 256,233 | 252,146 | 247,928 | 243,642 | 239,063 | 208,784 | 202,889 | 196,826 | 190,427 | 183,835 |
| New Debt (Principal) | - | - | 69,935 | 76,739 | 85,359 | 88,774 | 92,325 | 96,018 | 99,858 | 103,853 |
| New Debt (Interest) | - | - | 83,301 | 85,277 | 88,818 | 85,404 | 81,853 | 78,160 | 74,319 | 70,325 |
| Transfer to Capital | - | - | - | - | - | - | - | - | - | - |
| Transfer to Capital Reserve | 1,887 | 152,214 | 151,346 | 273,715 | 404,579 | 605,499 | 760,614 | 927,612 | 1,100,394 | 1,286,783 |
| Sub Total Capital Related | 395,070 | 545,243 | 697,529 | 828,743 | 971,768 | 1,121,610 | 1,274,831 | 1,439,987 | 1,610,823 | 1,795,319 |
| Total Expenditures | 1,806,053 | 1,984,503 | 2,165,419 | 2,326,253 | 2,498,998 | 2,679,570 | 2,863,911 | 3,060,797 | 3,263,963 | 3,481,889 |
| REVENUES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Fire Hose (Standpipe) Charge | 7,930 | 8,643 | 9,421 | 10,081 | 10,786 | 11,542 | 12,286 | 13,079 | 13,923 | 14,821 |
| Hydrant Rental | 29,070 | 31,687 | 34,538 | 36,956 | 39,543 | 42,311 | 45,041 | 47,947 | 51,041 | 54,334 |
| Water on/off charge | 714 | 730 | 740 | 760 | 770 | 790 | 800 | 820 | 840 | 850 |
| Non-resident Surcharge | 598 | 652 | 711 | 761 | 814 | 871 | 927 | 987 | 1,051 | 1,118 |
| Miscellaneous Revenues (Penalties & Interest, Permits & Fees, Administrative Fees,) | 6,580 | 6,700 | 5,600 | 5,700 | 5,800 | 5,900 | 6,100 | 6,200 | 6,300 | 6,400 |
| Total Operating Revenue | 44,892 | 48,412 | 51,011 | 54,258 | 57,714 | 61,414 | 65,154 | 69,033 | 73,154 | 77,524 |



Table W-14
Town of Deep River
Water Services
Scenario 2
Operating Budget Forecast
 Inflated \$

| Description | Forecast | | | | | | | | | |
|------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Billing | | | | | | | | | | |
| Residential Billing | 1,136,378 | 1,255,078 | 1,372,104 | 1,477,730 | 1,591,420 | 1,708,802 | 1,830,730 | 1,961,278 | 2,093,835 | 2,236,614 |
| Multi-Residential Billing | 156,860 | 170,977 | 186,365 | 199,411 | 213,370 | 228,305 | 243,036 | 258,717 | 275,410 | 293,179 |
| Commercial Billing | 176,039 | 191,883 | 209,152 | 223,793 | 239,458 | 256,221 | 272,752 | 290,350 | 309,084 | 329,027 |
| Commercial Billing - CRL | 287,089 | 312,927 | 341,090 | 364,966 | 390,514 | 417,850 | 444,810 | 473,510 | 504,061 | 536,584 |
| Town Properties | 14,385 | 15,679 | 17,090 | 18,287 | 19,567 | 20,936 | 22,287 | 23,725 | 25,256 | 26,885 |
| Total Billing Revenue | 1,770,750 | 1,946,544 | 2,125,802 | 2,284,187 | 2,454,329 | 2,632,114 | 2,813,615 | 3,007,580 | 3,207,646 | 3,422,289 |
| Less: Water on/off Discount | 9,590 | 10,453 | 11,394 | 12,191 | 13,044 | 13,958 | 14,858 | 15,817 | 16,837 | 17,924 |
| Total Revenues | 1,806,053 | 1,984,503 | 2,165,419 | 2,326,253 | 2,498,998 | 2,679,570 | 2,863,911 | 3,060,797 | 3,263,963 | 3,481,889 |

Table W-15
Town of Deep River
Water Services
Scenario 2
Water Rate Forecast
 Inflated \$

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-------------|-------------|-------------|-------------|
| Annual Flat Rate | \$ 684.98 | \$ 746.63 | \$ 813.82 | \$ 870.79 | \$ 931.74 | \$ 996.97 | \$ 1,061.29 | \$ 1,129.77 | \$ 1,202.66 | \$ 1,280.26 |
| Annual Percentage Change | 9.0% | 9.0% | 9.0% | 7.0% | 7.0% | 7.0% | 6.5% | 6.5% | 6.5% | 6.5% |
| CNL Metered Rate (per m³) | \$ 0.96 | \$ 1.05 | \$ 1.14 | \$ 1.22 | \$ 1.30 | \$ 1.40 | \$ 1.49 | \$ 1.58 | \$ 1.68 | \$ 1.79 |
| Annual Percentage Change | 9.0% | 9.0% | 9.0% | 7.0% | 7.0% | 7.0% | 6.5% | 6.5% | 6.5% | 6.5% |
| Fire Hose (Standpipe) Charge | \$ 537.00 | \$ 585.33 | \$ 638.01 | \$ 682.67 | \$ 730.46 | \$ 781.59 | \$ 832.02 | \$ 885.70 | \$ 942.85 | \$ 1,003.68 |
| Annual Percentage Change | 9.0% | 9.0% | 9.0% | 7.0% | 7.0% | 7.0% | 6.5% | 6.5% | 6.5% | 6.5% |
| Water connection/disconnection charge | \$ 20.40 | \$ 20.81 | \$ 21.22 | \$ 21.65 | \$ 22.08 | \$ 22.52 | \$ 22.97 | \$ 23.43 | \$ 23.90 | \$ 24.38 |
| Annual Percentage Change | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% | 2.0% |



Appendix B

Wastewater Services



**Table WW-1a
Town of Deep River
Wastewater Service
Capital Budget Forecast
Uninflated \$**

| Description | Total | Forecast | | | | | | | | | |
|---|------------------|------------------|------------------|---------------|----------------|----------------|----------|---------------|----------|----------|----------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Expenditures | | | | | | | | | | | |
| OCWA - Major Capital | - | | | | | | | | | | |
| Plant expansion project - add one more SBR unit | 1,900,000 | 380,000 | 1,520,000 | | | | | | | | |
| Plant expansion project - add tertiary filtration units (if req'd by MOECC) | 1,600,000 | 320,000 | 1,280,000 | | | | | | | | |
| Plant expansion project - additional aerobic digestion tankage and sludge storage | 1,800,000 | 360,000 | 1,440,000 | | | | | | | | |
| Lifting equipment improvements | 25,000 | 25,000 | | | | | | | | | |
| Roof Ice guards | 30,000 | 30,000 | | | | | | | | | |
| SCADA Upgrade | 25,000 | | | | 25,000 | | | | | | |
| Raw Sewage pump | 35,000 | | | 35,000 | | | | | | | |
| Grinder | 60,000 | 30,000 | | | | | | 30,000 | | | |
| Upgrade aeration lines in EQ tank | 100,000 | | 100,000 | | | | | | | | |
| Refurbish existing SBR units (one unit per year) | 225,000 | | 75,000 | 75,000 | 75,000 | | | | | | |
| Update O&M manual including SOPs | 40,000 | | 40,000 | | | | | | | | |
| UV replacement (if not included as part of plant expansion work) | 500,000 | | | | | 500,000 | | | | | |
| Other | | | | | | | | | | | |
| Brockhouse Way Construction | 800,000 | | 800,000 | | | | | | | | |
| Total Capital Expenditures | 7,140,000 | 1,145,000 | 5,255,000 | 75,000 | 110,000 | 525,000 | - | 30,000 | - | - | - |



BASE SCENARIO



**Table WW-1
Town of Deep River
Wastewater Service
Base Scenario
Capital Budget Forecast
Inflated \$**

| Description | Total | Forecast | | | | | | | | | |
|---|------------------|------------------|------------------|---------------|----------------|----------------|----------|---------------|----------|----------|----------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Expenditures | | | | | | | | | | | |
| OCWA - Major Capital | | | | | | | | | | | |
| Plant expansion project - add one more SBR unit | 2,020,000 | 393,000 | 1,627,000 | - | - | - | - | - | - | - | - |
| Plant expansion project - add tertiary filtration units (if req'd by MOECC) | 1,701,000 | 331,000 | 1,370,000 | - | - | - | - | - | - | - | - |
| Plant expansion project - additional aerobic digestion tankage and sludge storage | 1,913,000 | 372,000 | 1,541,000 | - | - | - | - | - | - | - | - |
| Lifting equipment improvements | 26,000 | 26,000 | - | - | - | - | - | - | - | - | - |
| Roof Ice guards | 31,000 | 31,000 | - | - | - | - | - | - | - | - | - |
| SCADA Upgrade | 30,000 | - | - | - | - | 30,000 | - | - | - | - | - |
| Raw Sewage pump | 40,000 | - | - | - | 40,000 | - | - | - | - | - | - |
| Grinder | 69,000 | 31,000 | - | - | - | - | - | 38,000 | - | - | - |
| Upgrade aeration lines in EQ tank | 107,000 | - | 107,000 | - | - | - | - | - | - | - | - |
| Refurbish existing SBR units (one unit per year) | 249,000 | - | 80,000 | 83,000 | 86,000 | - | - | - | - | - | - |
| Update O&M manual including SOPs | 43,000 | - | 43,000 | - | - | - | - | - | - | - | - |
| UV replacement (if not included as part of plant expansion work) | 592,000 | - | - | - | - | 592,000 | - | - | - | - | - |
| Other | | | | | | | | | | | |
| Brockhouse Way Construction | 856,000 | - | 856,000 | - | - | - | - | - | - | - | - |
| Total Capital Expenditures | 7,677,000 | 1,184,000 | 5,624,000 | 83,000 | 126,000 | 622,000 | - | 38,000 | - | - | - |
| Capital Financing | | | | | | | | | | | |
| Provincial/Federal Grants | 570,667 | - | 570,667 | - | - | - | - | - | - | - | - |
| Debenture Requirements | 5,468,933 | 460,026 | 4,708,112 | - | - | 300,796 | - | - | - | - | - |
| Operating Contributions | - | - | - | - | - | - | - | - | - | - | - |
| Wastewater Reserve | 1,637,400 | 723,974 | 345,221 | 83,000 | 126,000 | 321,204 | - | 38,000 | - | - | - |
| Total Capital Financing | 7,677,000 | 1,184,000 | 5,624,000 | 83,000 | 126,000 | 622,000 | - | 38,000 | - | - | - |



Table WW-2
Town of Deep River
Wastewater Service
Base Scenario
Schedule of Non-Growth Related Debenture Repayments
 Inflated \$

| Debenture Year | Principal (Inflated) | Forecast | | | | | | | | | |
|----------------------------------|----------------------|----------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| 2021 | 460,026 | | 33,849 | 33,849 | 33,849 | 33,849 | 33,849 | 33,849 | 33,849 | 33,849 | 33,849 |
| 2022 | 4,708,112 | | | 346,431 | 346,431 | 346,431 | 346,431 | 346,431 | 346,431 | 346,431 | 346,431 |
| 2023 | - | | | | - | - | - | - | - | - | - |
| 2024 | - | | | | | - | - | - | - | - | - |
| 2025 | 300,796 | | | | | | 22,133 | 22,133 | 22,133 | 22,133 | 22,133 |
| 2026 | - | | | | | | | - | - | - | - |
| 2027 | - | | | | | | | | - | - | - |
| 2028 | - | | | | | | | | | - | - |
| 2029 | - | | | | | | | | | | - |
| 2030 | - | | | | | | | | | | |
| Total Annual Debt Charges | 5,468,933 | - | 33,849 | 380,281 | 380,281 | 380,281 | 402,414 | 402,414 | 402,414 | 402,414 | 402,414 |

Table WW-3
Town of Deep River
Wastewater Service
Base Scenario
Wastewater Reserves/ Reserve Funds Continuity
 Inflated \$

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|-------------------------|---------|---------|------------|---------------|---------|----------------|----------------|------------------|------------------|------------------|
| Opening Balance | 539,509 | - | - | 515 | 54,639 | - | 392,936 | 859,285 | 1,729,970 | 2,732,072 |
| Transfer from Operating | 184,465 | 345,221 | 83,505 | 179,052 | 266,566 | 385,231 | 487,500 | 836,764 | 948,532 | 1,068,767 |
| Transfer to Capital | 723,974 | 345,221 | 83,000 | 126,000 | 321,204 | - | 38,000 | - | - | - |
| Transfer to Operating | - | - | - | - | - | - | - | - | - | - |
| Closing Balance | - | - | 505 | 53,567 | - | 385,231 | 842,436 | 1,696,049 | 2,678,502 | 3,800,839 |
| Interest | - | - | 10 | 1,071 | - | 7,705 | 16,849 | 33,921 | 53,570 | 76,017 |



Table WW-4
Town of Deep River
Wastewater Services
Base Scenario
Operating Budget Forecast
 Inflated \$

| Description | Forecast | | | | | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| EXPENDITURES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Administration | 52,347 | 53,400 | 54,410 | 55,620 | 56,640 | 57,750 | 59,060 | 60,070 | 61,290 | 62,600 |
| Wastewater Collection | 77,836 | 79,400 | 80,800 | 82,700 | 84,200 | 85,900 | 87,700 | 89,400 | 91,200 | 93,100 |
| Wastewater Treatment | 60,000 | 61,200 | 62,400 | 63,700 | 64,900 | 66,200 | 67,600 | 68,900 | 70,300 | 71,700 |
| Facility Maintenance | - | - | - | - | - | - | - | - | - | - |
| Facility Operations | 428,739 | 437,360 | 446,080 | 455,010 | 464,130 | 473,360 | 482,790 | 492,510 | 502,330 | 512,370 |
| Capital Projects | 72,500 | 74,000 | 75,400 | 76,900 | 78,500 | 80,000 | 81,600 | 83,300 | 84,900 | 86,600 |
| Sub Total Operating | 691,422 | 705,360 | 719,090 | 733,930 | 748,370 | 763,210 | 778,750 | 794,180 | 810,020 | 826,370 |
| Capital-Related | | | | | | | | | | |
| Existing Debt (Principal) | 215,670 | 222,784 | 230,134 | 237,652 | 245,572 | 228,063 | 235,374 | - | - | - |
| Existing Debt (Interest) | 65,394 | 60,020 | 54,481 | 48,850 | 42,896 | 11,220 | 3,909 | - | - | - |
| New Debt (Principal) | - | 15,448 | 174,173 | 181,140 | 188,386 | 206,022 | 214,263 | 222,834 | 231,747 | 241,017 |
| New Debt (Interest) | - | 18,401 | 206,108 | 199,141 | 191,895 | 196,391 | 188,151 | 179,580 | 170,667 | 161,397 |
| Transfer to Capital | - | - | - | - | - | - | - | - | - | - |
| Transfer to Capital Reserve | 184,465 | 345,221 | 83,505 | 179,052 | 266,566 | 385,231 | 487,500 | 836,764 | 948,532 | 1,068,767 |
| Sub Total Capital Related | 465,530 | 661,874 | 748,401 | 845,835 | 935,314 | 1,026,927 | 1,129,197 | 1,239,178 | 1,350,945 | 1,471,181 |
| Total Expenditures | 1,156,952 | 1,367,234 | 1,467,491 | 1,579,765 | 1,683,684 | 1,790,137 | 1,907,947 | 2,033,358 | 2,160,965 | 2,297,551 |
| REVENUES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Miscellaneous Revenues (Sewage Disposal Fees, Penalties & Interest, Permits & Fees) | 6,376 | 6,500 | 6,600 | 6,800 | 6,900 | 7,000 | 7,200 | 7,300 | 7,500 | 7,600 |
| Total Operating Revenue | 6,376 | 6,500 | 6,600 | 6,800 | 6,900 | 7,000 | 7,200 | 7,300 | 7,500 | 7,600 |
| Billing | | | | | | | | | | |
| Residential Billing | 877,922 | 1,041,730 | 1,119,236 | 1,207,053 | 1,288,781 | 1,371,710 | 1,464,480 | 1,563,452 | 1,662,931 | 1,769,802 |
| Multi-Residential Billing | 129,539 | 151,560 | 162,321 | 173,846 | 184,342 | 195,471 | 207,272 | 219,786 | 233,055 | 247,125 |
| Commercial Billing | 139,155 | 162,812 | 174,371 | 186,752 | 198,026 | 209,982 | 222,659 | 236,101 | 250,356 | 265,470 |
| Town Properties | 9,051 | 10,589 | 11,341 | 12,146 | 12,880 | 13,657 | 14,482 | 15,356 | 16,283 | 17,266 |
| Total Billing Revenue | 1,155,667 | 1,366,691 | 1,467,270 | 1,579,797 | 1,684,029 | 1,790,820 | 1,908,893 | 2,034,696 | 2,162,625 | 2,299,663 |
| Less: Water on/off Discount | 5,091 | 5,957 | 6,379 | 6,832 | 7,245 | 7,682 | 8,146 | 8,638 | 9,159 | 9,712 |
| Total Revenues | 1,156,952 | 1,367,234 | 1,467,491 | 1,579,765 | 1,683,684 | 1,790,137 | 1,907,947 | 2,033,358 | 2,160,965 | 2,297,551 |



Table WW-5
Town of Deep River
Wastewater Services
Base Scenario
Wastewater Rate Forecast
Inflated \$

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|----------|----------|
| Annual Flat Rate | 565.67 | 661.84 | 708.83 | 759.15 | 804.98 | 853.58 | 905.12 | 959.76 | 1,017.71 | 1,079.15 |
| Annual Percentage Change | 17.0% | 17.0% | 7.1% | 7.1% | 6.0% | 6.0% | 6.0% | 6.0% | 6.0% | 6.0% |



SCENARIO 1



Table WW-6
Town of Deep River
Wastewater Service
Scenario 1
Capital Budget Forecast
 Inflated \$

| Description | Total | Forecast | | | | | | | | | |
|---|------------------|------------------|------------------|---------------|----------------|----------------|----------|---------------|----------|----------|----------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Expenditures | | | | | | | | | | | |
| OCWA - Major Capital | | | | | | | | | | | |
| Plant expansion project - add one more SBR unit | 2,020,000 | 393,000 | 1,627,000 | - | - | - | - | - | - | - | - |
| Plant expansion project - add tertiary filtration units (if req'd by MOECC) | 1,701,000 | 331,000 | 1,370,000 | - | - | - | - | - | - | - | - |
| Plant expansion project - additional aerobic digestion tankage and sludge storage | 1,913,000 | 372,000 | 1,541,000 | - | - | - | - | - | - | - | - |
| Lifting equipment improvements | 26,000 | 26,000 | - | - | - | - | - | - | - | - | - |
| Roof Ice guards | 31,000 | 31,000 | - | - | - | - | - | - | - | - | - |
| SCADA Upgrade | 30,000 | - | - | - | - | 30,000 | - | - | - | - | - |
| Raw Sewage pump | 40,000 | - | - | - | 40,000 | - | - | - | - | - | - |
| Grinder | 69,000 | 31,000 | - | - | - | - | - | 38,000 | - | - | - |
| Upgrade aeration lines in EQ tank | 107,000 | - | 107,000 | - | - | - | - | - | - | - | - |
| Refurbish existing SBR units (one unit per year) | 249,000 | - | 80,000 | 83,000 | 86,000 | - | - | - | - | - | - |
| Update O&M manual including SOPs | 43,000 | - | 43,000 | - | - | - | - | - | - | - | - |
| UV replacement (if not included as part of plant expansion work) | 592,000 | - | - | - | - | 592,000 | - | - | - | - | - |
| Other | | | | | | | | | | | |
| Brockhouse Way Construction | 856,000 | - | 856,000 | - | - | - | - | - | - | - | - |
| Total Capital Expenditures | 7,677,000 | 1,184,000 | 5,624,000 | 83,000 | 126,000 | 622,000 | - | 38,000 | - | - | - |
| Capital Financing | | | | | | | | | | | |
| Provincial/Federal Grants | 570,667 | - | 570,667 | - | - | - | - | - | - | - | - |
| Debenture Requirements | 5,468,933 | 460,026 | 4,708,112 | - | - | 300,796 | - | - | - | - | - |
| Operating Contributions | - | - | - | - | - | - | - | - | - | - | - |
| Wastewater Reserve | 1,637,400 | 723,974 | 345,221 | 83,000 | 126,000 | 321,204 | - | 38,000 | - | - | - |
| Total Capital Financing | 7,677,000 | 1,184,000 | 5,624,000 | 83,000 | 126,000 | 622,000 | - | 38,000 | - | - | - |



Table WW-7
Town of Deep River
Wastewater Service
Scenario 1
Schedule of Non-Growth Related Debenture Repayments
 Inflated \$

| Debenture Year | Principal (Inflated) | Forecast | | | | | | | | | |
|----------------------------------|----------------------|----------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| 2021 | 460,026 | | 33,849 | 33,849 | 33,849 | 33,849 | 33,849 | 33,849 | 33,849 | 33,849 | 33,849 |
| 2022 | 4,708,112 | | | 346,431 | 346,431 | 346,431 | 346,431 | 346,431 | 346,431 | 346,431 | 346,431 |
| 2023 | - | | | | - | - | - | - | - | - | - |
| 2024 | - | | | | | - | - | - | - | - | - |
| 2025 | 300,796 | | | | | | 22,133 | 22,133 | 22,133 | 22,133 | 22,133 |
| 2026 | - | | | | | | | - | - | - | - |
| 2027 | - | | | | | | | | - | - | - |
| 2028 | - | | | | | | | | | - | - |
| 2029 | - | | | | | | | | | | - |
| 2030 | - | | | | | | | | | | |
| Total Annual Debt Charges | 5,468,933 | - | 33,849 | 380,281 | 380,281 | 380,281 | 402,414 | 402,414 | 402,414 | 402,414 | 402,414 |

Table WW-8
Town of Deep River
Wastewater Service
Scenario 1
Wastewater Reserves/ Reserve Funds Continuity
 Inflated \$

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|-------------------------|---------|---------|------------|---------------|---------|----------------|----------------|------------------|------------------|------------------|
| Opening Balance | 539,509 | - | - | 515 | 54,639 | - | 368,941 | 783,993 | 1,572,457 | 2,457,770 |
| Transfer from Operating | 184,465 | 345,221 | 83,505 | 179,052 | 266,566 | 361,707 | 437,680 | 757,631 | 837,122 | 921,649 |
| Transfer to Capital | 723,974 | 345,221 | 83,000 | 126,000 | 321,204 | - | 38,000 | - | - | - |
| Transfer to Operating | - | - | - | - | - | - | - | - | - | - |
| Closing Balance | - | - | 505 | 53,567 | - | 361,707 | 768,621 | 1,541,624 | 2,409,579 | 3,379,420 |
| Interest | - | - | 10 | 1,071 | - | 7,234 | 15,372 | 30,832 | 48,192 | 67,588 |



Table WW-9
Town of Deep River
Wastewater Services
Scenario 1
Operating Budget Forecast
 Inflated \$

| Description | Forecast | | | | | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| EXPENDITURES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Administration | 52,347 | 53,400 | 54,410 | 55,620 | 56,640 | 57,750 | 59,060 | 60,070 | 61,290 | 62,600 |
| Wastewater Collection | 77,836 | 79,400 | 80,800 | 82,700 | 84,200 | 85,900 | 87,700 | 89,400 | 91,200 | 93,100 |
| Wastewater Treatment | 60,000 | 61,200 | 62,400 | 63,700 | 64,900 | 66,200 | 67,600 | 68,900 | 70,300 | 71,700 |
| Facility Maintenance | - | - | - | - | - | - | - | - | - | - |
| Facility Operations | 428,739 | 437,360 | 446,080 | 455,010 | 464,130 | 473,360 | 482,790 | 492,510 | 502,330 | 512,370 |
| Capital Projects | 72,500 | 74,000 | 75,400 | 76,900 | 78,500 | 80,000 | 81,600 | 83,300 | 84,900 | 86,600 |
| Sub Total Operating | 691,422 | 705,360 | 719,090 | 733,930 | 748,370 | 763,210 | 778,750 | 794,180 | 810,020 | 826,370 |
| Capital-Related | | | | | | | | | | |
| Existing Debt (Principal) | 215,670 | 222,784 | 230,134 | 237,652 | 245,572 | 228,063 | 235,374 | - | - | - |
| Existing Debt (Interest) | 65,394 | 60,020 | 54,481 | 48,850 | 42,896 | 11,220 | 3,909 | - | - | - |
| New Debt (Principal) | - | 15,448 | 174,173 | 181,140 | 188,386 | 206,022 | 214,263 | 222,834 | 231,747 | 241,017 |
| New Debt (Interest) | - | 18,401 | 206,108 | 199,141 | 191,895 | 196,391 | 188,151 | 179,580 | 170,667 | 161,397 |
| Transfer to Capital | - | - | - | - | - | - | - | - | - | - |
| Transfer to Capital Reserve | 184,465 | 345,221 | 83,505 | 179,052 | 266,566 | 361,707 | 437,680 | 757,631 | 837,122 | 921,649 |
| Sub Total Capital Related | 465,530 | 661,874 | 748,401 | 845,835 | 935,314 | 1,003,403 | 1,079,376 | 1,160,045 | 1,239,536 | 1,324,063 |
| Total Expenditures | 1,156,952 | 1,367,234 | 1,467,491 | 1,579,765 | 1,683,684 | 1,766,613 | 1,858,126 | 1,954,225 | 2,049,556 | 2,150,433 |
| REVENUES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Miscellaneous Revenues (Sewage Disposal Fees, Penalties & Interest, Permits & Fees) | 6,376 | 6,500 | 6,600 | 6,800 | 6,900 | 7,000 | 7,200 | 7,300 | 7,500 | 7,600 |
| Total Operating Revenue | 6,376 | 6,500 | 6,600 | 6,800 | 6,900 | 7,000 | 7,200 | 7,300 | 7,500 | 7,600 |
| Billing | | | | | | | | | | |
| Residential Billing | 877,922 | 1,041,730 | 1,119,236 | 1,207,053 | 1,288,781 | 1,353,614 | 1,426,095 | 1,502,388 | 1,576,899 | 1,656,101 |
| Multi-Residential Billing | 129,539 | 151,560 | 162,321 | 173,846 | 184,342 | 192,892 | 201,839 | 211,201 | 220,998 | 231,248 |
| Commercial Billing | 139,155 | 162,812 | 174,371 | 186,752 | 198,026 | 207,212 | 216,823 | 226,880 | 237,403 | 248,415 |
| Town Properties | 9,051 | 10,589 | 11,341 | 12,146 | 12,880 | 13,477 | 14,102 | 14,756 | 15,441 | 16,157 |
| Total Billing Revenue | 1,155,667 | 1,366,691 | 1,467,270 | 1,579,797 | 1,684,029 | 1,767,194 | 1,858,859 | 1,955,225 | 2,050,741 | 2,151,921 |
| Less: Water on/off Discount | 5,091 | 5,957 | 6,379 | 6,832 | 7,245 | 7,581 | 7,933 | 8,300 | 8,685 | 9,088 |
| Total Revenues | 1,156,952 | 1,367,234 | 1,467,491 | 1,579,765 | 1,683,684 | 1,766,613 | 1,858,126 | 1,954,225 | 2,049,556 | 2,150,433 |



Table WW-10
Town of Deep River
Wastewater Services
Scenario 1
Wastewater Rate Forecast
Inflated \$

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| Annual Flat Rate | 565.67 | 661.84 | 708.83 | 759.15 | 804.98 | 842.32 | 881.39 | 922.28 | 965.05 | 1,009.82 |
| Annual Percentage Change | 17.0% | 17.0% | 7.1% | 7.1% | 6.0% | 4.6% | 4.6% | 4.6% | 4.6% | 4.6% |



SCENARIO 2



Table WW-11
Town of Deep River
Wastewater Service
Scenario 2
Capital Budget Forecast
 Inflated \$

| Description | Total | Forecast | | | | | | | | | |
|---|------------------|------------------|------------------|---------------|----------------|----------------|----------|---------------|----------|----------|----------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| Capital Expenditures | | | | | | | | | | | |
| OCWA - Major Capital | | | | | | | | | | | |
| Plant expansion project - add one more SBR unit | 2,020,000 | 393,000 | 1,627,000 | - | - | - | - | - | - | - | - |
| Plant expansion project - add tertiary filtration units (if req'd by MOECC) | 1,701,000 | 331,000 | 1,370,000 | - | - | - | - | - | - | - | - |
| Plant expansion project - additional aerobic digestion tankage and sludge storage | 1,913,000 | 372,000 | 1,541,000 | - | - | - | - | - | - | - | - |
| Lifting equipment improvements | 26,000 | 26,000 | - | - | - | - | - | - | - | - | - |
| Roof Ice guards | 31,000 | 31,000 | - | - | - | - | - | - | - | - | - |
| SCADA Upgrade | 30,000 | - | - | - | - | 30,000 | - | - | - | - | - |
| Raw Sewage pump | 40,000 | - | - | - | 40,000 | - | - | - | - | - | - |
| Grinder | 69,000 | 31,000 | - | - | - | - | - | 38,000 | - | - | - |
| Upgrade aeration lines in EQ tank | 107,000 | - | 107,000 | - | - | - | - | - | - | - | - |
| Refurbish existing SBR units (one unit per year) | 249,000 | - | 80,000 | 83,000 | 86,000 | - | - | - | - | - | - |
| Update O&M manual including SOPs | 43,000 | - | 43,000 | - | - | - | - | - | - | - | - |
| UV replacement (if not included as part of plant expansion work) | 592,000 | - | - | - | - | 592,000 | - | - | - | - | - |
| Other | | | | | | | | | | | |
| Brockhouse Way Construction | 856,000 | - | 856,000 | - | - | - | - | - | - | - | - |
| Total Capital Expenditures | 7,677,000 | 1,184,000 | 5,624,000 | 83,000 | 126,000 | 622,000 | - | 38,000 | - | - | - |
| Capital Financing | | | | | | | | | | | |
| Provincial/Federal Grants | 4,326,667 | 730,667 | 3,596,000 | - | - | - | - | - | - | - | - |
| Development Charges Reserve Fund | - | - | - | - | - | - | - | - | - | - | - |
| Debtenture Requirements | 305,797 | - | 305,797 | - | - | - | - | - | - | - | - |
| Growth Related Debtenture Requirements | 1,364,565 | 265,453 | 1,099,112 | - | - | - | - | - | - | - | - |
| Operating Contributions | - | - | - | - | - | - | - | - | - | - | - |
| Wastewater Reserve | 1,679,971 | 187,880 | 623,091 | 83,000 | 126,000 | 622,000 | - | 38,000 | - | - | - |
| Total Capital Financing | 7,677,000 | 1,184,000 | 5,624,000 | 83,000 | 126,000 | 622,000 | - | 38,000 | - | - | - |



Table WW-12
Town of Deep River
Wastewater Service
Scenario 2
Schedule of Non-Growth Related Debenture Repayments
 Inflated \$

| Debenture Year | Principal (Inflated) | Forecast | | | | | | | | | |
|----------------------------------|-------------------------|----------|------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| 2021 | - | | - | - | - | - | - | - | - | - | - |
| 2022 | 305,797 | | | 22,501 | 22,501 | 22,501 | 22,501 | 22,501 | 22,501 | 22,501 | 22,501 |
| 2023 | - | | | | - | - | - | - | - | - | - |
| 2024 | - | | | | | - | - | - | - | - | - |
| 2025 | - | | | | | | - | - | - | - | - |
| 2026 | - | | | | | | | - | - | - | - |
| 2027 | - | | | | | | | | - | - | - |
| 2028 | - | | | | | | | | | - | - |
| 2029 | - | | | | | | | | | | - |
| 2030 | - | | | | | | | | | | |
| Total Annual Debt Charges | 305,797 | - | - | 22,501 | 22,501 | 22,501 | 22,501 | 22,501 | 22,501 | 22,501 | 22,501 |



Table WW-13
Town of Deep River
Wastewater Service
Scenario 2
Schedule of Growth Related Debenture Repayments
 Inflated \$

| Debenture Year | Principal (Inflated) | Forecast | | | | | | | | | |
|----------------------------------|----------------------|----------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| 2021 | 265,453 | | 19,533 | 19,533 | 19,533 | 19,533 | 19,533 | 19,533 | 19,533 | 19,533 | 19,533 |
| 2022 | 1,099,112 | | | 80,875 | 80,875 | 80,875 | 80,875 | 80,875 | 80,875 | 80,875 | 80,875 |
| 2023 | - | | | | - | - | - | - | - | - | - |
| 2024 | - | | | | | - | - | - | - | - | - |
| 2025 | - | | | | | | - | - | - | - | - |
| 2026 | - | | | | | | | - | - | - | - |
| 2027 | - | | | | | | | | - | - | - |
| 2028 | - | | | | | | | | | - | - |
| 2029 | - | | | | | | | | | | - |
| 2030 | - | | | | | | | | | | |
| Total Annual Debt Charges | 1,364,565 | - | 19,533 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 |

Table WW-14
Town of Deep River
Wastewater Service
Scenario 2
Wastewater Reserves/ Reserve Funds Continuity
 Inflated \$

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|-------------------------|----------------|----------|----------------|----------------|----------------|----------------|------------------|------------------|------------------|------------------|
| Opening Balance | 539,509 | 452,961 | - | 143,040 | 332,399 | 115,689 | 682,288 | 1,337,389 | 2,415,111 | 3,646,646 |
| Transfer from Operating | 92,450 | 170,130 | 223,236 | 308,841 | 403,021 | 553,221 | 666,877 | 1,030,367 | 1,160,032 | 1,301,562 |
| Transfer to Capital | 187,880 | 623,091 | 83,000 | 126,000 | 622,000 | - | 38,000 | - | - | - |
| Transfer to Operating | - | - | - | - | - | - | - | - | - | - |
| Closing Balance | 444,079 | - | 140,236 | 325,882 | 113,420 | 668,910 | 1,311,165 | 2,367,755 | 3,575,143 | 4,948,207 |
| Interest | 8,882 | - | 2,805 | 6,518 | 2,268 | 13,378 | 26,223 | 47,355 | 71,503 | 98,964 |



Table WW-15
Town of Deep River
Wastewater Service
Scenario 2
Wastewater Development Charges Reserve Fund Continuity
 Inflated \$

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|-----------------------------------|---------|--------------|-----------------|-----------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Opening Balance | - | - | 3,310 | (75,005) | (94,384) | (167,821) | (246,984) | (260,747) | (339,901) | (413,764) |
| Development Charge Proceeds | - | 22,777 | 23,563 | 82,879 | 30,261 | 26,087 | 91,756 | 27,918 | 34,658 | 29,878 |
| Transfer to Capital | - | - | - | - | - | - | - | - | - | - |
| Transfer to Operating | - | 19,533 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 |
| Closing Balance | - | 3,245 | (73,534) | (92,533) | (164,530) | (242,141) | (255,635) | (333,236) | (405,651) | (484,293) |
| Interest | - | 65 | (1,471) | (1,851) | (3,291) | (4,843) | (5,113) | (6,665) | (8,113) | (9,686) |
| Required from Development Charges | 265,453 | 1,099,112 | - | - | - | - | - | - | - | - |



Table WW-16
Town of Deep River
Wastewater Services
Scenario 2
Operating Budget Forecast
 Inflated \$

| Description | Forecast | | | | | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
| EXPENDITURES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Administration | 52,347 | 53,400 | 54,410 | 55,620 | 56,640 | 57,750 | 59,060 | 60,070 | 61,290 | 62,600 |
| Wastewater Collection | 77,836 | 79,400 | 80,800 | 82,700 | 84,200 | 85,900 | 87,700 | 89,400 | 91,200 | 93,100 |
| Wastewater Treatment | 60,000 | 61,200 | 62,400 | 63,700 | 64,900 | 66,200 | 67,600 | 68,900 | 70,300 | 71,700 |
| Facility Maintenance | - | - | - | - | - | - | - | - | - | - |
| Facility Operations | 428,739 | 437,360 | 446,080 | 455,010 | 464,130 | 473,360 | 482,790 | 492,510 | 502,330 | 512,370 |
| Capital Projects | 72,500 | 74,000 | 75,400 | 76,900 | 78,500 | 80,000 | 81,600 | 83,300 | 84,900 | 86,600 |
| Sub Total Operating | 691,422 | 705,360 | 719,090 | 733,930 | 748,370 | 763,210 | 778,750 | 794,180 | 810,020 | 826,370 |
| Capital-Related | | | | | | | | | | |
| New Growth Related Debt (Principal) | - | 8,914 | 46,181 | 48,028 | 49,949 | 51,947 | 54,025 | 56,186 | 58,434 | 60,771 |
| New Growth Related Debt (Interest) | - | 10,618 | 54,226 | 52,379 | 50,458 | 48,460 | 46,382 | 44,221 | 41,973 | 39,636 |
| Existing Debt (Principal) | 215,670 | 222,784 | 230,134 | 237,652 | 245,572 | 228,063 | 235,374 | - | - | - |
| Existing Debt (Interest) | 65,394 | 60,020 | 54,481 | 48,850 | 42,896 | 11,220 | 3,909 | - | - | - |
| New Debt (Principal) | - | - | 10,269 | 10,680 | 11,107 | 11,551 | 12,014 | 12,494 | 12,994 | 13,514 |
| New Debt (Interest) | - | - | 12,232 | 11,821 | 11,394 | 10,950 | 10,488 | 10,007 | 9,507 | 8,988 |
| Transfer to Capital | - | - | - | - | - | - | - | - | - | - |
| Transfer to Capital Reserve | 92,450 | 170,130 | 223,236 | 308,841 | 403,021 | 553,221 | 666,877 | 1,030,367 | 1,160,032 | 1,301,562 |
| Sub Total Capital Related | 373,515 | 472,466 | 630,759 | 718,252 | 814,396 | 915,412 | 1,029,068 | 1,153,275 | 1,282,940 | 1,424,470 |
| Total Expenditures | 1,064,937 | 1,177,826 | 1,349,849 | 1,452,182 | 1,562,766 | 1,678,622 | 1,807,818 | 1,947,455 | 2,092,960 | 2,250,840 |
| REVENUES | | | | | | | | | | |
| Operating | | | | | | | | | | |
| Miscellaneous Revenues (Sewage Disposal Fees, Penalties & Interest, Permits & Fees) | 6,376 | 6,500 | 6,600 | 6,800 | 6,900 | 7,000 | 7,200 | 7,300 | 7,500 | 7,600 |
| Contributions from Development Charges Reserve Fund | - | 19,533 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 | 100,407 |
| Total Operating Revenue | 6,376 | 26,033 | 107,007 | 107,207 | 107,307 | 107,407 | 107,607 | 107,707 | 107,907 | 108,007 |
| Billing | | | | | | | | | | |
| Residential Billing | 807,712 | 881,772 | 952,182 | 1,032,099 | 1,118,670 | 1,208,685 | 1,309,972 | 1,419,682 | 1,532,881 | 1,656,101 |
| Multi-Residential Billing | 119,179 | 128,288 | 138,094 | 148,648 | 160,010 | 172,239 | 185,404 | 199,575 | 214,829 | 231,248 |
| Commercial Billing | 128,027 | 137,812 | 148,345 | 159,683 | 171,888 | 185,026 | 199,168 | 214,390 | 230,777 | 248,415 |
| Town Properties | 8,327 | 8,963 | 9,648 | 10,386 | 11,180 | 12,034 | 12,954 | 13,944 | 15,010 | 16,157 |
| Total Billing Revenue | 1,063,245 | 1,156,835 | 1,248,269 | 1,350,817 | 1,461,748 | 1,577,984 | 1,707,498 | 1,847,591 | 1,993,496 | 2,151,921 |
| Less: Water on/off Discount | 4,684 | 5,042 | 5,427 | 5,842 | 6,289 | 6,769 | 7,287 | 7,844 | 8,443 | 9,088 |
| Total Revenues | 1,064,937 | 1,177,826 | 1,349,849 | 1,452,182 | 1,562,766 | 1,678,622 | 1,807,818 | 1,947,455 | 2,092,960 | 2,250,840 |



Table WW-17
Town of Deep River
Wastewater Services
Scenario 2
Wastewater Rate Forecast
Inflated \$

| Description | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----------|
| Annual Flat Rate | 520.43 | 560.21 | 603.03 | 649.12 | 698.73 | 752.14 | 809.62 | 871.51 | 938.12 | 1,009.82 |
| Annual Percentage Change | 7.6% | 7.6% | 7.6% | 7.6% | 7.6% | 7.6% | 7.6% | 7.6% | 7.6% | 7.6% |