

# **A G E N D A**

## **THE SECOND MEETING OF THE SECONDARY WATER BOARD OF THE CITY OF ST. THOMAS - 2020**

### **MEETING ROOM**

Via ZOOM video conferencing

5:00 P.M.

**THURSDAY**

**SEPTEMBER 10, 2020**

### **DISCLOSURE OF INTEREST**

### **MINUTES**

Confirmation of the minutes of the meeting held on February 27, 2020.

### **REPORTS**

St. Thomas Area Secondary Water Supply System – Financial Plan and Rate Study

Report SWB03-20 of the Compliance Coordinator - APPENDIX A (pg. 2 -pg. 52)

DWQMS Management Review Meeting Minutes – Manager of Development & Compliance

Report SWB04-20 of the Manager of Development & Compliance - APPENDIX B (pg. 53- pg.57)

### **UNFINISHED BUSINESS**

EMPS Joint Occupancy and Use Agreement:

City Engineer to provide report to the committee on the EMPS Joint Occupancy and Use Agreement between the Primary and Secondary Boards at the upcoming 3<sup>rd</sup> meeting of 2020.

Lake Huron/Elgin Area Water System Workshop Update:

The workshop hosted by the Lake Huron/Elgin Area Water System on the proposed Municipal Agreement to establish Water Boards as a Municipal Services Board or Municipal Services Corporation under the Municipal Act was deferred due to COVID-19.

### **NEW BUSINESS**

none

Next Meeting

To be determined.

### **ADJOURNMENT**



# APPENDIX - A

Report No.  
SWB03-20

File No.

Directed to: **Members of Board of Management for the St. Thomas Area Secondary Water Supply System**

Date Authored: Aug 25 2020

Meeting Date: Sept 10 2020

Department: Environmental Services

Prepared By: Karel Kamerman  
Compliance Coordinator

## Attachment

#1 – 2021 - 2031 St. Thomas Area  
Secondary Water Supply System Rate  
Study

#2 – 2021 -2031 St. Thomas Area  
Secondary Water Supply System  
Financial Plan

Subject: **St. Thomas Area Secondary Water System Rate Study and Financial Plan 2021-2031**

### Recommendation:

THAT: Report SWB03-20, be received for information; and further,

THAT: The St. Thomas Area Secondary Water System Rate Study (2021-2031) and Water System Financial Plan (2021-2031), attached to report SWB03-20 be approved; and further,

THAT: The Financial Plan (2021 – 2031), the Board Resolution approving the Financial Plan, and the Water System Rate Study (2021-2031) underpinning the Financial Plan be submitted to the Ministry of Municipal Affairs and Housing; and further,

THAT: The Financial Plan (2021-2031), the Board Resolution approving the Financial Plan, and the Water System Rate Study (2021-2031) underpinning the Financial Plan be submitted to the Ministry of the Environment, Conservation and Parks, as part of a complete Municipal Drinking Water Licence Renewal Application; and further,

THAT: Notice be provided to users of the STASWSS of the availability of the Financial Plan through the benefiting municipalities websites.

### Background:

Municipal Drinking Water Licence (MDWL) 190-101, the legal instrument which provides the authority to own, modify, expand, operate and maintain the STASWSS, is up for renewal with the Ministry of the Environment, Conservation and Parks (MECP) in 2021. One of the requirements for licence renewal is the preparation and Board approval of a Financial Plan, consistent with the requirements set out in Ontario Regulation 453/07. A Water Rate Study has been completed in unison, in order to inform the Financial Plan of the capital and operational expenditures and revenues anticipated over the study period.

### Analysis:

#### **Water Rate Study**

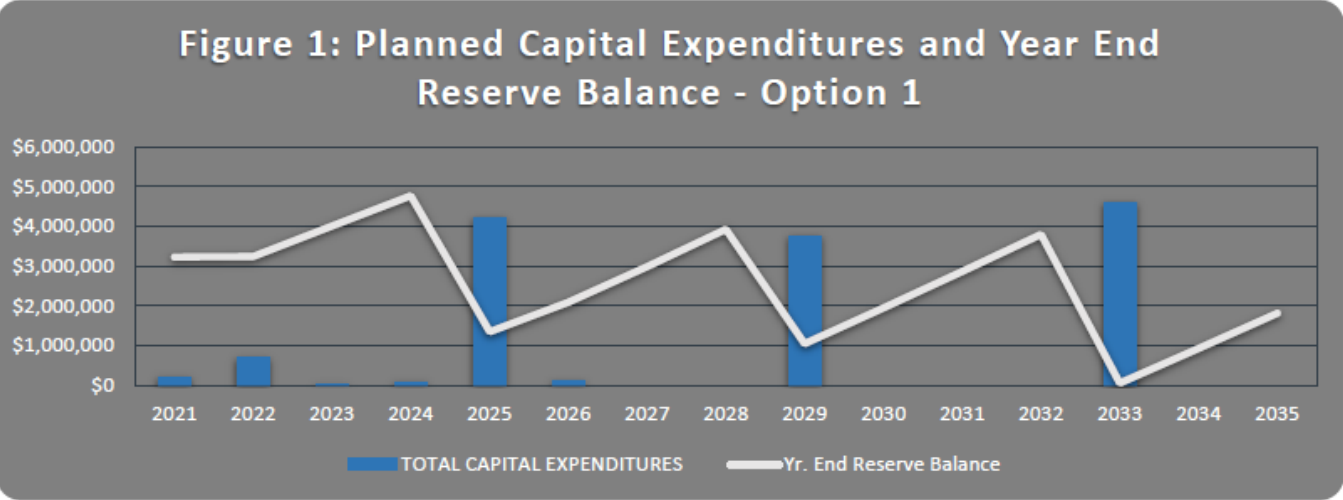
The attached Water Rate Study has been prepared by staff of the City of St. Thomas and reviewed by Watson and Associates. Recommendations made within their Peer Review Report were considered and reflected in subsequent versions, where deemed necessary and appropriate.

The Water Rate Study identifies the anticipated capital, operating and lifecycle expenditures forecasted over the 2021-2031 period. The STASWSS main transmission line is nearing the end of its theoretical useful life. This replacement of the transmission main will require significant financial investment representing nearly 80% of the systems total asset replacement value. Two scenarios for transmission main replacement were evaluated within the rate study:

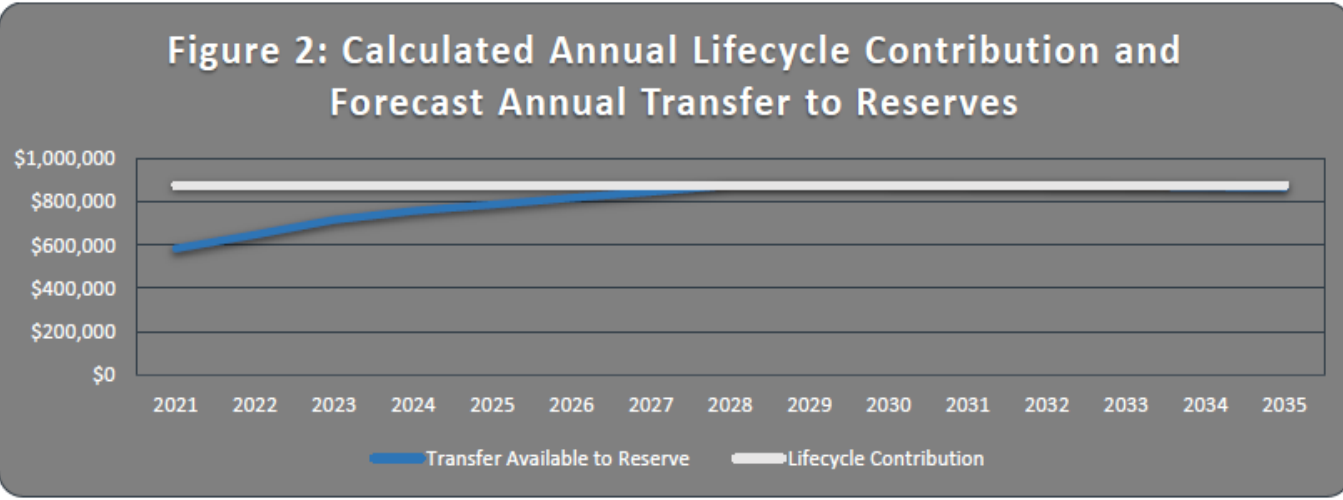
**Option 1: Initiate Transmission Main Project 2025:** Under this option, transmission main replacement would be initiated in 2025 and completed by 2042, the transmission mains theoretical end of useful life. The City of St. Thomas 10-Year Capital Plan indicates that South Edgeware Road is to be reconstructed in 2025. This option aligns the replacement project with the City's capital plan, providing some cost savings. This option results in reserve fund contributions consistent with the lifecycle contribution needs over the long-term forecast, by 2028.

**Option 2: Defer Transmission Main Project to 2036:** Under this option, initiation of the transmission main replacement would be deferred until 2036. This option allows the reserve fund to accumulate for 10 years prior to initiating the transmission main replacement project. The inherent risk with deferring the Transmission Main Replacement Project is increased prevalence of watermain breaks on the STASWSS. This option also results in reserve fund contributions consistent with the lifecycle contribution needs over the long-term forecast, by 2028.

Option 1, the staff recommended preferred scenario, outlines a capital plan that allows for replacement of the transmission main by 2042, and avoids the use of debt instruments over the study period of 2021-2031, as visually demonstrated in Figure 1.



A full cost recovery plan was also developed as part of the Water Rate Study. The cost recovery plan identifies the water rates required in order to fund the annual costs of services and accounts for the future rehabilitation and/or reconstruction of the system that will be necessary to ensure its sustainable operation. Figure 2 below visually demonstrates that the rates recommended within Option 1 of the Rate Study have been established such that the forecast annual transfer to reserves (what we collect to fund the capital program) is aligned with the calculated annual lifecycle contribution (what we should spend annually to maintain the system in a sustainable manner) by 2028.



**Financial Plan**

The attached Financial Plan has been prepared in accordance with the requirements of Ontario Regulation 453/07.

For further clarity, the plan includes a statement that the financial impacts of the drinking water system have been considered and the plan applies to the period spanning 2021 – 2031. 2021 being the year in which the STASWSS’s existing municipal drinking water licence will otherwise expire.

The prepared Financial Plan includes:

- Details of the proposed or projected financial position of the drinking water system
- Details of the proposed or projected financial operations of the drinking water system
- Details of the drinking water system’s proposed or projected gross cash receipts and gross cash payments
- Details of the extent to which the above information relates directly to the replacement of lead service pipes

**Financial Considerations:**

By approving the Financial Plan, the Joint Board of Management for the St. Thomas Area Secondary Water Supply System is demonstrating their commitment to the financial sustainability of the drinking water system. In developing the rate study, the strategy employed was to maximize cost savings, minimize risk of transmission main failure and increase rates just enough to avoid debt while maintaining rate increases that serve to align reserve contributions with theoretical lifecycle contributions. The rate increases proposed as part of the Rate Study are as follows:

| Required Rate Increases (2021 – 2031) |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------------------|------|------|------|------|------|------|------|------|------|------|------|
|                                       | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
| Option 1                              | 6.5% | 5.5% | 5.5% | 3.0% | 2.0% | 2.0% | 2.0% | 2.0% | 0.0% | 0.0% | 0.0% |

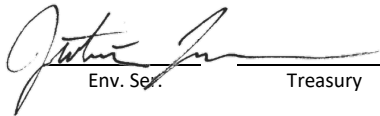
Each year, the Board has the chance to review and approve each annual increase. In the case that the existing transmission main has a longer lifespan, the rates may be adjusted downward.

Respectfully,



Karel Kamerman  
Compliance Coordinator

Reviewed By:

  
Env. Ser.

Treasury

City Manager

# ST. THOMAS AREA SECONDARY WATER SUPPLY SYSTEM

Water Rate Study  
2021 - 2031



TOWNSHIP OF  
**Southwold**

## St. Thomas Area Secondary Water Supply System

### 2021 - 2031 Water Rate Study

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## St. Thomas Area Secondary Water Supply System

### 2021 - 2031 Water Rate Study

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## **1 Introduction**

The St. Thomas Area Secondary Water Supply System (STASWSS) obtains treated drinking water from the Elgin Area Primary Water Supply System (EAPWSS) and transmits this drinking water to the City of St. Thomas, parts of the Municipality of Central Elgin, and the Township of Southwold, which allows pass-through to the Municipality of Dutton-Dunwich. The STASWSS recovers its costs from its municipal customers through a consumption rate that is applied to the metered volume of water consumed. The STASWSS rate is included in the St. Thomas DWS Water Supply Rate, as described below.

The STASWSS water rate is recovered as a portion of the overall St. Thomas DWS Water Supply Rate for the St. Thomas and Suburban Service Area. The current St. Thomas DWS Water Supply Rate is calculated to reflect 70% of the overall supply to the area being purchased directly from the EAPWSS with 30% being purchased from the STASWSS (i.e. a rate comprising both the Primary and STASWSS rates).

In addition to the St. Thomas DWS Water Supply Rate, the St. Thomas and Suburban Service Area Rate also includes the Common Water Rate and monthly base charge, which is designed to fund common water system infrastructure works over 300 mm in diameter within the St. Thomas Distribution System. Lastly, each municipality is responsible for funding their respective water systems' infrastructure needs smaller than 300 mm in diameter within their respective jurisdictions. The City of St. Thomas imposes a Capital Charge Rate for this funding component.

This study has been prepared to determine the water rates for the STASWSS that are required to fund the operational, maintenance, administrative, rehabilitation and renewals costs in a sustainable manner.

### **1.1 Background**

The City of St. Thomas, as the administering municipality for the Secondary System prepared this water rate study for the water system. This includes an assessment of the full costs of managing the water systems and recovery of those costs through consumption rates. The study period is for eleven (11) years, from 2021 to 2031, inclusive.

A condition of the existing municipal drinking water licence is that the application for renewal of the licence must be submitted to the Ministry of the Environment, Conservation and Parks (MECP) by December 27, 2020. The licence renewal process requires the preparation of an updated financial plan in accordance with O. Reg. 453/07. This document informs the update of the water systems financial plan.

### **1.2 Study Objectives**

The objectives of this study are as follows:

- Forecast future water demands on the St. Thomas Area Secondary Water Supply System (STASWSS) (2021-2031)
- Identify all current and future water system capital needs to assess the immediate and longer-term capital funding requirements

- Identify existing operating costs and estimate future operating costs over the next 10 years (2021-2031).
- Forecast STASWSS water rates for the 10-year forecast period (2021-2031)
- Present the information necessary for preparation of a financial plan in accordance with the requirements of Ontario Regulation 453/07 and the Safe Drinking Water Act 2002.
- Provide a report and presentation to the Board of Management, relative to the findings and recommendations

### **1.3 Regulatory Changes in Ontario**

Provincial requirements governing water services primarily include the following:

- The Safe Drinking Water Act (SDWA);
  - Financial Plan Regulation (O. Reg. 453/07)
  - Licencing of Municipal Drinking Water Systems (O. Reg. 188/07)
- The Municipal Act (MA);
- The Water Opportunities and Conservation Act, 2010 (WOA).
- Infrastructure for Jobs and Prosperity Act, 2015
  - Asset Management Planning for Municipal Infrastructure (O. Reg 588/17)

#### **1.3.1 Safe Drinking Water Act (2002)**

The Safe Drinking Water Act, 2002 (SDWA) has significant implications to daily operations as it sets out the water sampling and other operational requirements (in O. Reg. 170/03) for ensuring that the water delivered to consumers is of high quality and safe for consumption. The SDWA has been a major influence over the past decade in terms of adjustments to operational practices and water quality assurance. In addition, there is also a requirement under this Act (O. Reg. 188/07) for drinking water providers to establish a Drinking Water Quality Management System (DWQMS) and obtain licences for their respective water systems. As part of the DWQMS, and as required under O. Reg. 453/07 (Financial Plans Regulation), operating authorities must submit a financial plan for their respective water systems as a condition of licensing. There are also many regulations and guidelines that deal with design and operation standards that mandate certain activities be undertaken as part of service delivery.

##### **1.3.1.1 Financial Plan Regulation (O.Reg. 453/07)**

The Financial Plan Regulation (O.Reg. 453/07), under the Safe Drinking Water Act requires that owners of municipal drinking water systems prepare Financial Plans for the drinking water system as a pre-requisite for obtaining a Municipal Drinking Water Licence; a requirement to own, operate and maintain the infrastructure designed to deliver drinking water to homes and businesses. The plan and its approving resolution must be submitted to the Ministry of Municipal Affairs and Housing (MMAH) and must accompany the MDWL renewal application to the Ministry of the Environment, Conservation and Parks (MECP).

A guideline has been provided to assist municipalities in understanding the Provinces direction and provides a detailed discussion on possible approaches to sustainability. The Provinces 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 | Life-cycle 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.  |

The preparation of this Study and the accompanying Financial Plan are consistent with the principles of O. Reg. 453/07 with a flexible, locally-driven approach to achieving financial sustainability.

**1.3.1.2 Licensing of Municipal Drinking Water Systems (O.Reg.188/07)**

Regulation 188/07, under the Safe Drinking Water Act, 2002 requires Ontario municipalities to apply for and obtain a Municipal Drinking Water Licence (MDWL), which provides the approval and authority to own and operate the Drinking

Water System (DWS). One of the requirements for obtaining and renewing an MDWL is preparing a financial plan in accordance with O. Reg. 453/07. In general, the financial plan must include financial statements on the following:

- The proposed or projected financial position of the drinking water systems;
- The proposed or projected gross cash receipts and gross cash payments;
- The proposed or projected financial operations of the drinking water system; and
- Details on the extent to which the above information applies to the replacement of lead service pipes, if applicable.

### 1.3.2 The Municipal Act (2002)

The Municipal Act, Part VII, Section 293 requires municipalities to establish reserves for dealing with long-term liabilities. This applies directly to the water systems and the future liabilities associated with their age and condition. The Municipal Act also permits municipalities to establish fees for cost recovery and requires public input prior to any fee adjustments.

### 1.3.3 The Water Opportunities Act

The WOA was enacted in November 2010 and the regulations are pending. This legislation promotes water conservation and requires municipalities to develop:

- Water conservation plans;
- Sustainability plans for water, wastewater & stormwater management; and
- Asset management plans.

Financial plans are required as a component of the water sustainability and asset management plans.

### 1.3.4 Infrastructure for Jobs and Prosperity Act, 2015: Asset Management Planning for Municipal Infrastructure (O. Reg 588/17)

On December 13, 2017, the Province approved the regulation that took effect January 1, 2018. Although no provisions take immediate effect, O. Reg 588/2017 sets out new requirements for undertaking asset management planning. The preparation of the new asset management plans have phased-in timelines spanning 6 years.

- July 1, 2019 – all municipal governments to have a finalized initial strategic asset management policy. Section 3 of the regulation sets out 12 matters that this policy must include, and the policy must be reviewed every 5 years.
- July 1, 2021: all municipal governments to have an adopted asset management plan for core assets (roads, bridges and culverts, water, wastewater and stormwater management) that discusses current levels of service and the cost of maintaining those services. The regulation sets out both qualitative descriptions and technical metrics for each of the core assets.

- July 1, 2023: Municipal governments to an adopted asset management plan for all of its other municipal infrastructure assets, which also discusses current levels of service and the cost of maintaining those services. The municipality is to set the technical metrics and qualitative descriptions for its other assets (e.g., culture and recreation facilities).
- July 1, 2024: The asset management plans shall include a discussion of proposed levels of service, the assumptions related to the proposed levels of service, what activities will be required to meet proposed levels of service, and a strategy to fund the activities.

The City of St. Thomas passed resolution endorsing the Strategic Asset Management Policy on May 6, 2019. The Asset Management Policy makes commitments that the Asset Management Plan be utilized to inform the Financial Planning aspects of the Safe Drinking Water Act. This study has been prepared using the Water Asset Listing prepared for the purposes of satisfying O. Reg. 588/17.

## 2 Data Sources

The primary Sources of data used to prepare this financial plan are listed below. In addition, information was also developed from discussions with input from St. Thomas, Southwold, Central Elgin, and Dutton-Dunwich staff, as required.

| Item                             | Data Source   |
|----------------------------------|---|
| Asset Life Expectancy            | St. Thomas Asset Management Plan<br>Information provided by St. Thomas                              |
| Asset Replacement Costs          | Recent Construction or Historical Costs, where available, provided in 2014 study, inflated.         |
| Asset Values                     | St. Thomas Asset Management Plan<br>Information provided by St. Thomas                              |
| O&M Cost and Revenue Projections | 2020 Operating Budget   |
| Capital Cost Projections         | STASWSS 2021-2031 Capital Plan  |
| Investment/Debt/Reserve Balances | Information provided by St. Thomas  |
| Existing Customers               | Customer counts provided by Entegrus  |
| Growth                           | Information provided by St. Thomas, Southwold, and Central Elgin staff.                             |
| Water Volumes                    | Historical Demand Volumes provided by St. Thomas and OCWA. Billed Consumption provided by Entegrus. |

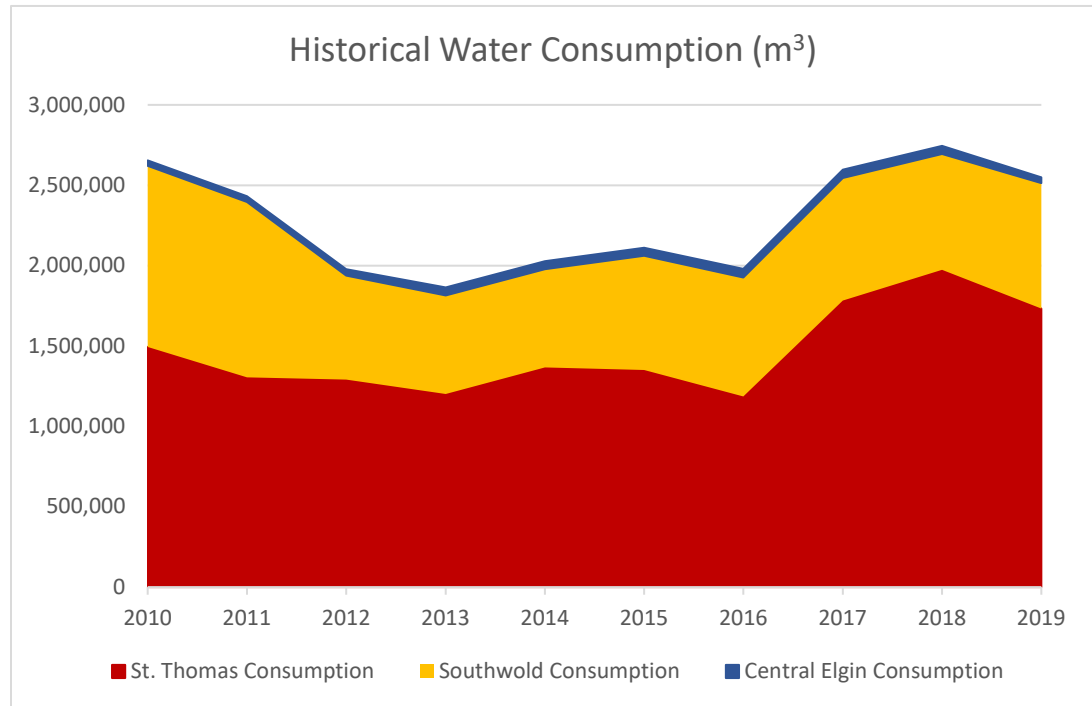
### 3 Forecasting Growth and Servicing Requirements

The St. Thomas Area Secondary Water Supply System (STASWSS) currently directly supplies water to three municipalities: The City of St. Thomas, The Municipality of Central Elgin and The Township of Southwold. The Municipality of Dutton-Dunwich receives water from the STASWSS through a connection to the Township of Southwold.

#### 3.1 Historical Water Consumption

Consumption data, obtained from Entegrus, for the period of 2010-2019 is summarized in Appendix A and is graphically represented below. As demonstrated in Appendix A, billed water consumption from the STASWSS has swung from a peak in 2010 of 2,655,427 m<sup>3</sup> to a low record within the period of 1,863,421 m<sup>3</sup> in 2013, returning to record flows in 2018 of 2,744,963 m<sup>3</sup>.

The decrease in use realized in 2012 is a result of the Ford Plant closure in 2011. The loss of flow resulting from the Ford Plant closure was intended to be offset to some degree by the extension of the service area to the Municipality of Dutton-Dunwich. The Municipality of Dutton-Dunwich is contractually obligated to take a minimum of 400 m<sup>3</sup> per day. Discussions with Dutton-Dunwich indicate that they do not intend to take any more than the contracted minimum for the forecast period. As such, this value has been carried forward within the demand forecast directed toward Southwold.



Increased consumption in 2017, 2018 and 2019 on St. Thomas' part is a result of an increased reliance on the STASWSS to feed their distribution system. The St. Thomas' distribution system is fed from the Elgin Area Primary Water Supply System (EAPWSS) and the St. Thomas Area Secondary Water Supply System (STASWSS). It is the City's intention to take 70% of the water demand directly from the EAPWSS and the remaining 30% from the STASWSS. As a result of failing infrastructure providing feed from the EAPWSS, this split has trended toward 50:50 in recent years. With the replacement of the pumps at the Albert Roberts Pumping Station in July 2019, it is the City's intention to return to a 70:30 split.

## 3.2 Growth and Servicing Requirements

This section summarizes the forecast water demands for the STASWSS for the period of 2021-2031. In developing this forecast, discussions were held with staff from each benefitting municipality to identify factors affecting future demand.

### 3.2.1 Southwold Demand Forecast

The Township of Southwold's average consumption over the 5-year period spanning 2015-2019 was 749,421 m<sup>3</sup>. Southwold is anticipating a period of significant growth over the forecast period. This growth is expected to add more than 500 homes over the 10-year period. At a rate of approximately 50 new homes per year, the new growth is expected that it will account for an additional 7,790 m<sup>3</sup> per year of consumption, year over year. As mentioned above, discussions with Dutton-Dunwich indicate that they do not intend to take any more than the contracted minimum for the forecast period. As such, this value has been carried forward within the demand forecast directed toward Southwold.

|  | Southwold Demand Forecast (m <sup>3</sup> ) |                |                |                |                |                |                |                |                |                |                |
|--|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
|  | 2021  | 2022           | 2023           | 2024           | 2025           | 2026           | 2027           | 2028           | 2029           | 2030           | 2031           |
| # of new homes                                 | 49  | 49             | 49             | 49             | 49             | 49             | 49             | 49             | 49             | 49             | 49             |
| Annual Consumption/home                        | 161   | 161            | 161            | 161            | 161            | 161            | 161            | 161            | 161            | 161            | 161            |
| Forecast Flow due to growth                    | 7,889                                       | 7,889          | 7,889          | 7,889          | 7,889          | 7,889          | 7,889          | 7,889          | 7,889          | 7,889          | 7,889          |
| <b>SW EMPS DEMAND FORECAST (m<sup>3</sup>)</b> | <b>765,199</b>                              | <b>773,088</b> | <b>780,977</b> | <b>788,866</b> | <b>796,755</b> | <b>804,644</b> | <b>812,533</b> | <b>820,422</b> | <b>828,311</b> | <b>836,200</b> | <b>844,089</b> |

### 3.2.2 St. Thomas Demand Forecast

The City of St. Thomas' total system demand is satisfied through feeds from the Elgin Area Primary Water Supply System, at the Albert Roberts Pumping Station and the St. Thomas Area Secondary Water Supply System, at 4 possible entry points throughout the city. City-wide consumption over the 5-year period spanning 2015-2019 averaged 3,269,112 m<sup>3</sup>. It is the City's intention to meet 70% of the demand with water directly from the EAPWSS and 30% from the STASWSS. In recent years this flow split has trended closer to 50:50, however, with the replacement of the pumps at the Albert Roberts Pumping Station in July 2019, it is the City's intention to return to a 70:30 water supply split for the study period. St. Thomas is conservatively anticipating growth at a rate of 1.50% annually for the forecast period. A calculation of Non-revenue water of 14% is included in the determination of total demands on the STASWSS. It should be noted that these water losses primarily occur within the St. Thomas distribution system and as such, do not represent a financial loss to the STASWSS; however are necessary to include, in order to calculate the total water needs being demanded by the St. Thomas DWS. City wide demands and operational strategies will influence the volumes of water delivered through the West and East Chambers. For the purposes of this study, it was assumed flow will be split evenly between two delivery points into the St. Thomas DWS (ie. East and West Chambers).

| St. Thomas DWS Demand Forecast (m <sup>3</sup> ) |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 2021             | 2022             | 2023             | 2024             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             | 2031             |
| <b>Consumption Total (m<sup>3</sup>/annum)</b>   | <b>3,431,365</b> | <b>3,482,835</b> | <b>3,535,078</b> | <b>3,588,104</b> | <b>3,641,925</b> | <b>3,696,554</b> | <b>3,752,003</b> | <b>3,808,283</b> | <b>3,865,407</b> | <b>3,923,388</b> | <b>3,982,239</b> |
| % NRW  | 14%              | 14%              | 14%              | 14%              | 14%              | 14%              | 14%              | 14%              | 14%              | 14%              | 14%              |
| NRW Forecast                                     | 485,768          | 493,055          | 500,451          | 507,957          | 515,577          | 523,310          | 531,160          | 539,127          | 547,214          | 555,423          | 563,754          |
| <b>STDWS Total Demand Forecast</b>               | <b>3,917,133</b> | <b>3,975,890</b> | <b>4,035,528</b> | <b>4,096,061</b> | <b>4,157,502</b> | <b>4,219,865</b> | <b>4,283,163</b> | <b>4,347,410</b> | <b>4,412,621</b> | <b>4,478,811</b> | <b>4,545,993</b> |
| ARBS Demand                                      | 2,741,993        | 2,783,123        | 2,824,870        | 2,867,243        | 2,910,252        | 2,953,905        | 2,998,214        | 3,043,187        | 3,088,835        | 3,135,167        | 3,182,195        |
| East Chamber                                     | 587,570          | 596,383          | 605,329          | 614,409          | 623,625          | 632,980          | 642,474          | 652,112          | 661,893          | 671,822          | 681,899          |
| West Chamber                                     | 587,570          | 596,383          | 605,329          | 614,409          | 623,625          | 632,980          | 642,474          | 652,112          | 661,893          | 671,822          | 681,899          |
| <b>STDWS EMPS DEMAND FORECAST</b>                | <b>1,175,140</b> | <b>1,192,767</b> | <b>1,210,658</b> | <b>1,228,818</b> | <b>1,247,251</b> | <b>1,265,959</b> | <b>1,284,949</b> | <b>1,304,223</b> | <b>1,323,786</b> | <b>1,343,643</b> | <b>1,363,798</b> |

### 3.2.3 Central Elgin Demand Forecast

The Municipality of Central Elgin's average consumption over the 5-year period spanning 2015-2019 was 48,508 m<sup>3</sup>. Central Elgin anticipates the addition of approximately 120 homes to the distribution system connected to the STASWSS over the study period.

| Central Elgin Demand Forecast (2020-2030) |               |               |               |               |               |               |               |               |               |               |               |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 2021          | 2022          | 2023          | 2024          | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
| # of new homes                            | 21            | 26            | 21            | 20            | 20            | 22            | 0             | 0             | 0             | 0             | 0             |
| Consumption/home (m3/annum)               | 161           | 161           | 161           | 161           | 161           | 161           | 161           | 161           | 161           | 161           | 161           |
| Forecast Flow due to growth (m3/annum)    | 3,381         | 4,186         | 3,381         | 3,220         | 3,220         | 3,542         | 0             | 0             | 0             | 0             | 0             |
| <b>CE EMPS DEMAND FORECAST</b>            | <b>57,685</b> | <b>61,871</b> | <b>65,252</b> | <b>68,472</b> | <b>71,692</b> | <b>75,234</b> | <b>75,234</b> | <b>75,234</b> | <b>75,234</b> | <b>75,234</b> | <b>75,234</b> |

### 3.3 Total STASWSS Demand Forecast

Annual water demands on the STASWSS are projected to increase approximately 285,000 m<sup>3</sup> over the forecast period, from a total demand of 1,998,025 m<sup>3</sup> in 2021 to 2,283,122 m<sup>3</sup> by 2031.

| TOTAL STASWSS DEMAND FORECAST (m <sup>3</sup> ) |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|   | 2021             | 2022             | 2023             | 2024             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             | 2031             |
| STDWS EMPS DEMAND                               | 1,175,140        | 1,192,767        | 1,210,658        | 1,228,818        | 1,247,251        | 1,265,959        | 1,284,949        | 1,304,223        | 1,323,786        | 1,343,643        | 1,363,798        |
| CE EMPS DEMAND                                  | 57,685           | 61,871           | 65,252           | 68,472           | 71,692           | 75,234           | 75,234           | 75,234           | 75,234           | 75,234           | 75,234           |
| SW EMPS DEMAND                                  | 765,199          | 773,088          | 780,977          | 788,866          | 796,755          | 804,644          | 812,533          | 820,422          | 828,311          | 836,200          | 844,089          |
| <b>TOTAL STASWSS DEMAND</b>                     | <b>1,998,025</b> | <b>2,027,727</b> | <b>2,056,888</b> | <b>2,086,157</b> | <b>2,115,698</b> | <b>2,145,838</b> | <b>2,172,717</b> | <b>2,199,880</b> | <b>2,227,332</b> | <b>2,255,078</b> | <b>2,283,122</b> |

## 4 Full Cost of Services

The full cost of services assessment identifies the current and future costs (i.e. the full costs) associated with the management of the water system. The key cost areas include:

- Capital Needs, based on the 10-year capital budget;
- Operations and Maintenance (O&M cost projections);
- Lifecycle Replacement Needs (Reserve Funding).

This section of the study is formatted to address cost of water service requirements and supports the complimentary cost recovery plan provided in the subsequent section.

#### **4.1 STASWSS Capital Needs**

This section summarizes the capital needs assessments provided by St. Thomas and OCWA staff to ensure a sustainable system and provides a management plan for the long-term integrity of the water supply system. Two iterations of the capital needs forecast were considered by staff when assessing the short-term and long-term capital needs of the STASWSS. Staff indicate there is an upcoming need to begin replacement of the STASWSS transmission main. The Transmission Main Replacement Project represents approximately 80% of the STASWSS entire asset replacement value.

There is currently limited information available on the condition of the STASWSS transmission main. A condition assessment was conducted in 2009 by Echo-logics, however, the resulting report is generally inconclusive.

The STASWSS is in the planning stages of a project to remove the Ford Tower from service. The work required will allow staff to remove a section of the piping and have it analyzed by the manufacturer to gain better insight into the expected remaining life based on a condition assessment, rather than age alone. The main has not had any breaks to date, however, emergency response and recovery to a break on a transmission main of this nature is currently estimated at \$500,000 - \$750,000.

For this assignment, two options were considered to measure the impacts of the upcoming need to replace the STASWSS Transmission Main. Each option includes capital costs for the upgrade and maintenance of the system as identified in St. Thomas' Capital Plan (2021-2031) and OCWA's EMPS Capital Plan (2021-2031). The two (2) options prepared are as follows:

- **Option 1: Initiate Transmission Main Project 2025** (Detailed in Appendix B);
- **Option 2: Defer Transmission Main Project 2036** (Detailed in Appendix C);

##### **4.1.1 Level of Risk**

There is a level of risk or financial impact associated with each capital needs option. Inherent in each option are different levels of operational risks with varying financial impacts. The following section summarizes the risk assessment for each option:

**Option 1: Initiate Transmission Main Project 2025:** Under this option, transmission main replacement would be initiated as soon as practicable and aligned with City's 10-Year Capital Plan, indicating South Edgeware Road is to be reconstructed in 2025. This option requires more aggressive short-term rate increases in order to ensure adequate funds are available to complete the replacement project. Reserve Funds, for the most part, will be drained as they are accrued until 2042, when the transmission main replacement project is complete. This option results in reserve fund contributions consistent with the lifecycle contribution needs over the long-term forecast, by 2028.

**Option 2: Defer Transmission Main Project to 2036:** Under this option, initiation of the transmission main replacement would be deferred until 2036. This option allows the reserve fund to accumulate for 10 years prior to initiating the transmission main replacement project. The inherent risk with deferring the Transmission Main Replacement Project is increased prevalence of watermain breaks on the STASWSS. This option also results in reserve fund contributions consistent with the lifecycle contribution needs over the long-term forecast, by 2028.

The table below summarizes the rate increases that would be required under each option. Rate increases in each option are sufficient to allow a sustainable level of capital funding by 2028.

|          | Required Rate Increases (2021 – 2031) |      |      |      |      |      |      |      |      |      |      |
|----------|---------------------------------------|------|------|------|------|------|------|------|------|------|------|
|          | 2021                                  | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 |
| Option 1 | 6.5%                                  | 5.5% | 5.5% | 3.0% | 2.0% | 2.0% | 2.0% | 2.0% | 0.0% | 0.0% | 0.0% |
| Option 2 | 4.0%                                  | 4.0% | 4.0% | 4.0% | 4.0% | 4.0% | 2.0% | 2.0% | 0.0% | 0.0% | 0.0% |

#### 4.1.2 Preferred Scenario

The STASWSS transmission main is nearing its theoretical end of life. As such, STASWSS needs to plan for the replacement of the entire transmission main. This is a significant replacement project, representing nearly 80% of the systems total asset replacement value.

The City of St. Thomas 10-year Capital Plan recommends that South Edgeware Road be expanded around 2025. This represents an opportunity for the STASWSS to replace a large section of the main, where road reconstruction costs will already be planned for, representing a significant cost reduction. The replacement of the transmission main will need to be undertaken in sections, over the course of many years.

Staff Committee decided preferred scenario would be Option 1. This scenario provides some cost savings in the form of combining portions of the transmission main replacement with the South Edgeware Road Expansion Project and presents the least risk of occurrence of critical pipeline failures requiring emergency repairs. The Staff Committee also indicated a preference to avoid the use of debt, as historically the system has not done so. Rate increases have been recommended that align the forecast annual reserve fund contributions with the lifecycle contribution needs over the long-term forecast by 2028 and will allow for the 2021-2033 Capital Plan to be undertaken without the use of debt. There are numerous reasons that reserve funds may not accumulate as demonstrated herein. Debt use may be required to fund final phases of transmission main replacement.

## 4.2 Operations and Maintenance Expenditures

The 2020 Operating Budget was provided by City of St. Thomas. The budget identifies the operation and maintenance costs of the STASWSS. Future cost estimates were developed based on current operating and maintenance costs and the potential impact of future capital needs. It was determined that there would not be significant changes to operating or maintenance costs as a result of the implementation of the 2021-2031 Capital Plan, however, it should be noted that a new budget line item will be introduced in 2021, entitled "EMPS Rental". The EMPS Rental Fee is anticipated to be the result of the execution of an Occupancy Agreement to be initiated January 1, 2021. The Occupancy Agreement clearly identifies EAPWSS as the accountable entity for the operation, maintenance, and asset renewal for the EMPS property, both cells of the terminal reservoir, common EMPS site watermain, EMPS building envelope, facility electrical system, HVAC and septic systems and establishes an annual occupancy fee based on a comprehensive Asset Management Plan. Previously, shared asset renewal expenses required negotiation on each item. For the STASWSS, the overall financial result of the Agreement is more predictable annual operating expenses related to the EMPS. As part of the preparation of this report, anticipated capital expense related to the assets covered by the agreement were removed from the Capital Plan and the Annual Occupancy Fee was added to the Operating Budget.

The costs for each component of the operating budget have been reviewed with City staff to establish forecast inflationary adjustments. The Table below summarizes these assumptions.

| Inflation Assumptions               |                                       |   |
|-------------------------------------|---------------------------------------|---|
| Description                         | Inflation                             | Notes   |
| City Admin Costs                    | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| Job Costing Labour                  | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| CMMS Support Fee                    | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| Secondary Water System - Contractor | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| Misc. Contracted Services           | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| Job Costing Equipment               | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| Job Costing Subcontractors          | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| City Own Property Taxes             | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| Insurance Expense                   | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| Communications                      | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| SCADA Maintenance                   | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| Electricity (Hydro)                 | 5.00%                                 | Based on historical performance                             |
| Natural Gas - Heating               | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| Chemicals                           | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| Job Costing Materials               | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| EMPS Rental                         | 2.00%                                 | Modestly reduced value, based on 10-yr average CPI increase |
| Purchase of Water                   | Forecasted Consumption X Primary Rate | Based on discussions with RWS staff                         |

Costs for the purchase of water from the EAPWSS have been forecast based on the anticipated water demand, as determined in the section above and the forecasted EAPWSS water rates. The EAPWSS Rate Study currently prepared advises on rates to 2021. Discussions with staff at the EAPWSS indicates that they anticipate rates continuing to increase at a rate of 3% per year for this study period.

Appendix D summarizes the forecast operational, EMPS occupancy and water supply costs for the STASWSS. The cost of water supply is the most significant cost to the STASWSS, representing approximately 80% of Annual Total Operating Expenses. Over the course of the study period, annual water supply costs are anticipated to increase from \$1,791,253 to \$2,750,790.

### **4.3 Water Infrastructure Replacement (Lifecycle Analysis)**

The STASWSS has adopted a philosophy of full cost of servicing. Full cost of servicing, over and above operational and maintenance costs of servicing, includes the collection of funds at a level adequate to cover future system replacement costs, through the establishment of reserve funds.

An Asset Lifecycle Analysis based on asset information contained in the City of St. Thomas' Asset Management Plan was completed to determine the future asset replacement needs. This involved consideration of the following information for the respective assets:

- Historical cost;
- In- service or year of installation;
- Useful life expectancy and anticipated year of replacement
- Replacement costs in 2020 dollars (where recent construction costs estimates were not available, costs were developed by applying 2% inflation annually to the values presented in the System's 2015 Study); and
- Replacement costs in the future year of replacement (estimated by adjusting 2020 replacement costs using 2% inflation).

Detailed Tables are provided in Appendix E.

## **5 Full Cost Recovery Plan**

The Full Cost Recovery Plan, which addresses operation and maintenance, administrative, capital renewal/replacement (lifecycle), new capital, continuous supply, debt and reserve fund costs for the preferred option, Option 1, is presented in this section.

The STAWSS has the following funding sources available to them and are discussed further in the sections below:

- Grant Funding
- Debt Financing
- Reserve Financing
- Operating Revenues

### **5.1 Grant Funding**

Historically, federal/provincial level funding helped with major municipal infrastructure projects. In recent years, funding from these levels of government have dwindled, are typically allocated on a case-by-case basis and are assigned to “shovel-ready” projects. In developing the Cost Recovery Plan, no grant funding has been identified.

### **5.2 Debt Financing**

Issuance of debt allows for financing to be available in the year the project is required, and repayment occurs over the future years. Financing from the Reserve Fund requires that enough funds be available in the reserve in the year the project is undertaken, through annual contributions to the reserve in prior years. Without debt or reserve financing, major rate increases or “spikes” would be required in the project year to raise sufficient funds to cover the project expenditures. As there is no recommendation to use debt as a tool over the planning period, there are no financial costs to the cost recovery plan presented within this study.

### **5.3 Reserve Financing**

Municipalities in Ontario use fund accounting as the basis for budgeting and recording their financial matters. There are two funds, those being the operating fund (to address day-to-day expenditures) and Reserve/Reserve Funds (accumulation of funds set aside for specific purposes).

In its simplest form, a reserve represents monies which are set aside for future known expenditures or for contingent purposes. The establishment of a reserve is at the discretion of Council (or the Board) and represents a financial management tool for smoothing out fluctuations in rates over a period of time.

### 5.3.1 Capital Funding

Direct Capital Recoveries through the water rate and indirectly through reserves will be the funding sources for the STASWSS Capital Needs and Lifecycle Analysis forecast. Appendix F summarizes the capital funding plan for STASWSS under the preferred option, with approximately \$ 9,048,106 in contributions required from the reserve funds.

### 5.3.2 Reserve Fund Continuity Forecast

The Board has established a reserve fund for the STASWSS. The projected year-end for 2020 is estimated at \$2,794,768. Consistent with the principles of full cost pricing, the rate analysis assumes that the Board will make these discretionary reserves obligatory reserve funds, so that the fund will be utilized exclusively for this purpose and that the interest will be accumulated on reserve fund balances. As such, the rate analysis assumes an annual interest rate for reserve fund balances in determining the annual lifecycle reserve fund contributions of 2%, a modest reduction of past investment performance of 2.1% over the last 5 years.

The Table below provides the forecast reserve fund continuity statement for the forecast period.

| Reserve Fund Continuity (2021-2031) |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |                    |
|-------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                                     | 2021               | 2022               | 2023               | 2024               | 2025               | 2026               | 2027               | 2028               | 2029               | 2030               | 2031               |
| <b>Opening Balance</b>              | <b>2,794,768</b>   | <b>3,234,982</b>   | <b>3,245,962</b>   | <b>4,014,266</b>   | <b>4,778,013</b>   | <b>1,362,118</b>   | <b>2,107,673</b>   | <b>2,999,418</b>   | <b>3,939,156</b>   | <b>1,068,986</b>   | <b>1,969,883</b>   |
| Less: Planned Capital Expenditures  | 197,667            | 689,999            | 15,000             | 75,000             | 4,216,692          | 100,000            | -                  | -                  | 3,753,748          | -                  | -                  |
| Transfer to Capital                 | 585,939            | 650,080            | 718,685            | 759,962            | 789,571            | 820,312            | 849,592            | 879,749            | 879,870            | 879,517            | 878,664            |
| Interest                            | 51,942             | 50,900             | 64,619             | 78,785             | 11,226             | 25,242             | 42,153             | 59,988             | 3,708              | 21,380             | 39,398             |
| <b>Closing Balance</b>              | <b>\$3,234,982</b> | <b>\$3,245,962</b> | <b>\$4,014,266</b> | <b>\$4,778,013</b> | <b>\$1,362,118</b> | <b>\$2,107,673</b> | <b>\$2,999,418</b> | <b>\$3,939,156</b> | <b>\$1,068,986</b> | <b>\$1,969,883</b> | <b>\$2,887,944</b> |

## 5.4 Operating Budget and Water Rate Forecast

Annual Operating expenditures have been forecast based on the 2020 STASWSS operating budget with adjustment for cost inflation. Water Supply costs were forecasted based on Primary Rate Study, discussions with RWS staff, and projected water demands based on anticipated growth in the area.

Capital related expenditures and lifecycle reserve fund contributions have been forecast to provide funding for the capital needs for the 10-year forecast period, and to align reserve fund contributions with the theoretical lifecycle contributions to address the capital replacement needs beyond 2031.

Operating Expenditures are anticipated to increase from \$2,323,524 to \$3,457,728 over the forecast period. Appendix G summarizes the forecast annual operating budget and net water billing recovery annually.

## St. Thomas Area Secondary Water Supply System

### 2021 - 2031 Water Rate Study

The table below demonstrates the forecast total STASWSS water billing recovery annually and divides this amount by the forecast water consumption to calculate the STASWSS bulk billing rates. It is noted that this rate comprises both the EAPWSS Water Rate and the STASWSS Water Rate. As noted above, the EAPWSS is forecast to increase at an annual rate of 3% annually.. Thus, the STASWSS Water Rate is forecast to increase by 6.5% in 2021; 5.5% for 2022 and 2023; 3.0% for 2024; 2% for the years 2025-2028, followed by 3 years of no anticipated rate increase. The forecast rate increases take the rates from \$0.5597 in 2021 to \$0.6945 by 2028, which is anticipated to remain in place for 4 years.

|  | Water Rate Forecast (2021 - 2031) |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|--|-----------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|  | 2021                              | 2022             | 2023             | 2024             | 2025             | 2026             | 2027             | 2028             | 2029             | 2030             | 2031             |
| Total Billing Recoveries   | \$2,909,463                       | \$3,069,666      | \$3,237,588      | \$3,382,168      | \$3,519,389      | \$3,662,568      | 3,805,195        | \$3,953,372      | \$4,076,381      | \$4,203,992      | \$4,336,392      |
| STASWSS Demand Forecast (m <sup>3</sup> )                          | 1,998,025                         | 2,027,727        | 2,056,888        | 2,086,157        | 2,115,698        | 2,145,838        | 2,172,717        | 2,199,880        | 2,227,332        | 2,255,078        | 2,283,122        |
| <b>Secondary Bulk Billing Rate (Primary Rate + Secondary Rate)</b> | <b>\$ 1.4562</b>                  | <b>\$ 1.5138</b> | <b>\$ 1.5740</b> | <b>\$ 1.6212</b> | <b>\$ 1.6635</b> | <b>\$ 1.7068</b> | <b>\$ 1.7514</b> | <b>\$ 1.7971</b> | <b>\$ 1.8302</b> | <b>\$ 1.8642</b> | <b>\$ 1.8993</b> |
| Primary Water Rate Forecast  | \$ 0.8965                         | \$ 0.9234        | \$ 0.9511        | \$ 0.9796        | \$ 1.0090        | \$ 1.0393        | \$ 1.0705        | \$ 1.1026        | \$ 1.1357        | \$ 1.1697        | \$ 1.2048        |
| <b>PROPOSED Secondary Rate</b>                                     | <b>\$ 0.5597</b>                  | <b>\$ 0.5904</b> | <b>\$ 0.6229</b> | <b>\$ 0.6416</b> | <b>\$ 0.6544</b> | <b>\$ 0.6675</b> | <b>\$ 0.6809</b> | <b>\$ 0.6945</b> | <b>\$ 0.6945</b> | <b>\$ 0.6945</b> | <b>\$ 0.6945</b> |

## 5.5 Water Rate Impact

As noted in the introduction, the STASWSS water rate is applied as a portion of the overall St. Thomas DWS Water Supply Rate for the St. Thomas and Suburban Service Area. The forecast St. Thomas DWS Water Supply Rate is calculated to reflect 70% of the overall supply to the area being purchased directly from the Primary System with 30% being purchased from the Secondary System (i.e. a rate comprising both the EAPWSS and STASWSS rates).

In addition to the St. Thomas DWS Water Supply Rate, the St. Thomas and Suburban Service Area Rate also includes the Common Water Rate and monthly base charge, which is designed to fund common water system infrastructure works over 300 mm in diameter. Lastly, each municipality is responsible for funding their respective infrastructure needs smaller than 300 mm in diameter within their respective jurisdictions. The City of St. Thomas imposes a Capital Charge Rate for this funding component.

The Table below summarizes the impact of the forecast STASWSS rate on typical residential customers in the City of St. Thomas. For illustration purposes, it is assumed that the typical residential customer consumes 167 m<sup>3</sup> annually. Focusing on the St. Thomas and Suburban Service Area component of the overall rate, which is comprised of the St. Thomas DWS Water Supply Rate and the Common Water Rate, the impact on a typical residential customer is forecast to increase at 3-% annually (or approximately \$6.00 per customer annually). However, the annual water bill increase attributable to increases in the STASWSS water rate amount to approximately \$1.00 - \$1.50 annually of the total bill average annual increase of \$7.48, representing an increase of less than 1% of a residents overall annual bill each year.

**St. Thomas Area Secondary Water Supply System**  
*2021 - 2031 Water Rate Study*

|   | Residential Customer –Water Rate Impact |               |               |               |               |               |               |               |               |               |               |
|---|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|   | 2021                                    | 2022          | 2023          | 2024          | 2025          | 2026          | 2027          | 2028          | 2029          | 2030          | 2031          |
| Primary Water Rate Forecast   | 0.8965                                  | 0.9234        | 0.9511        | 0.9796        | 1.0090        | 1.0393        | 1.0705        | 1.1026        | 1.1357        | 1.1697        | 1.2048        |
| PROPOSED Secondary Rate   | 0.5597                                  | 0.5904        | 0.6229        | 0.6416        | 0.6544        | 0.6675        | 0.6809        | 0.6945        | 0.6945        | 0.6945        | 0.6945        |
| <b>St. Thomas DWS Water Supply Rate (Blended; 100% Primary 30% Secondary)</b> | <b>1.0644</b>                           | <b>1.1005</b> | <b>1.1380</b> | <b>1.1721</b> | <b>1.2054</b> | <b>1.2396</b> | <b>1.2747</b> | <b>1.3109</b> | <b>1.3440</b> | <b>1.3781</b> | <b>1.4132</b> |
| Annual Water Bill (167 m3/yr)   | 177.76                                  | 183.79        | 190.04        | 195.74        | 201.30        | 207.01        | 212.88        | 218.93        | 224.45        | 230.14        | 236.00        |
| Annual Water Bill Attributable to STASWSS                                     | 28.04                                   | 29.58         | 31.21         | 32.14         | 32.79         | 33.44         | 34.11         | 34.79         | 34.79         | 34.79         | 34.79         |
| Total Water Bill Increase   | 6.07                                    | 6.03          | 6.25          | 5.70          | 5.55          | 5.71          | 5.88          | 6.05          | 5.52          | 5.69          | 5.86          |
| Annual Water Bill Increase (attributable to STASWSS)                          | 1.71                                    | 1.54          | 1.63          | 0.94          | 0.64          | 0.66          | 0.67          | 0.68          | 0.00          | 0.00          | 0.00          |
| Total Annual Bill % Increase  | 0.96%                                   | 0.84%         | 0.86%         | 0.48%         | 0.32%         | 0.32%         | 0.31%         | 0.31%         | 0.00%         | 0.00%         | 0.00%         |

## 6 Recommendations

**That the Board consider and adopt the recommended STASWSS Water Rates provided to fund the costs of water supply for the STASWSS**

**That the Board consider the capital plan for water as provided in Section 2 and the associated capital funding plan as set out in section 3.**

Appendix A: Historical Water Consumption (2010-2019)

|   | 2010<br>Actual | 2011<br>Actual | 2012<br>Actual | 2013<br>Actual | 2014<br>Actual | 2015<br>Actual | 2016<br>Actual | 2017<br>Actual | 2018<br>Actual | 2019<br>Actual |
|---|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| Reading from EMPS (m³)                    | 2,611,264      | 2,488,557      | 2,082,008      | 1,947,745      | 2,289,430      | 2,227,571      | 2,137,710      | 2,756,129      | 2,904,229      | 2,808,875      |
| ~ St. Thomas Consumption ~                |                |                |                |                |                |                |                |                |                |                |
| East Chamber                              | 794,010        | 753,174        | 720,048        | 573,379        | 877,249        | 826,797        | 731,909        | 1,040,776      | 1,061,278      | 1,218,526      |
| West Chamber                              | 700,478        | 551,244        | 571,127        | 628,418        | 481,110        | 524,012        | 453,929        | 742,299        | 903,519        | 487,921        |
| St. George and Lynhurst Park              | ---            | ---            | 75             | 110            | 115            | 10             | 185            | 245            | 375            | 45             |
| Fingal Line (Southwold WDS)               | ---            | ---            | ---            | ---            | 7,507          | ---            | ---            | ---            | 8,958          | 25,610         |
| Subtotal - St. T Consumption (m³)         | 1,494,488      | 1,304,418      | 1,291,250      | 1,201,907      | 1,365,981      | 1,350,819      | 1,186,023      | 1,783,320      | 1,974,130      | 1,732,102      |
| ~ Southwold Consumption ~                 |                |                |                |                |                |                |                |                |                |                |
| Home on Wellington - 1 meter              | 109            | 125            | 101            | 113            | 155            | 158            | 205            | 165            | 107            | 87             |
| Wellington transmission main              | 655            | 1,580          | 1,275          | 1,010          | 1,475          | 695            | 1,070          | 1,570          | 1,155          | 850            |
| St. George St. and Lynhurst Park - credit | 0              | 0              | 75             | -115           | -115           | -10            | -185           | -245           | -375           | -45            |
| Homes - 7 - on Ford Line                  | 1,195          | 1,170          | 1,095          | 790            | 805            | 1,030          | 875            | 820            | 940            | 1,180          |
| Ferndale Subdivision - Large              | 10             | 5              | 10             | 10             | 15             | 0              | 35             | 105            | 30             | 25             |
| Ferndale Subdivision - Small              | 30,880         | 27,460         | 27,390         | 25,855         | 29,815         | 24,625         | 24,810         | 25,860         | 24,390         | 23,740         |
| New Ford Line Chamber                     |                |                | 702            | 436            | 331            | 527            | 631            | 592            | 592            | 605            |
| Talbotville                               | 87,690         | 64,675         | 48,435         | 52,230         | 51,980         | 57,695         | 61,715         | 63,655         | 62,375         | 65,000         |
| Northstar Windows                         | 3,939          | 3,416          | 3,811          | 4,245          | 4,940          | 5,802          | 6,164          | 6,466          | 7,757          | 5,657          |
| Shedden/Fingal                            | 414,933        | 451,925        | 469,249        | 442,962        | 443,892        | 494,976        | 532,450        | 551,220        | 534,903        | 599,774        |
| Homes - 3 - ... - 1 meter                 | 3,668          | 3,894          | 3,501          | 2,363          | 3,476          | 2,531          | 2,923          | 2,736          | 1,920          | 1,698          |
| JRI - 2" meter                            | 2,253          | 1,293          | 1,211          | 1,263          | 859            | 421            | 265            | 127            | 73             | 101            |
| JRI - 5/8" meter                          | 68             | 190            | 139            | 99             | 135            | 384            | 66             | 59             | 160            | 86             |
| Homes - 3 - 1 meter                       | 520            | 740            | 760            | 950            | 650            | 810            | 1,030          | 1,520          | 575            | 20             |
| Home - Bradish - 1 meter                  | 466            | 302            | 341            | 290            | 240            | 230            | 226            | 298            | 491            | 333            |
| Clinton Line (Ford)                       | 579,387        | 534,405        | 87,582         | 79,951         | 81,248         | 119,766        | 108,374        | 106,205        | 93,924         | 107,532        |
| Fingal Line (Return to St. Thomas)        | ---            | ---            | ---            | ---            | -7,507         | ---            | ---            | ---            | -8,958         | -25,610        |
| Subtotal - SW Consumption (m³)            | 1,125,887      | 1,091,289      | 645,677        | 612,452        | 612,394        | 709,640        | 740,654        | 761,153        | 720,059        | 781,033        |
| ~ Central Elgin Consumption ~             |                |                |                |                |                |                |                |                |                |                |
| Lynhurst Subdivision - Lower              | 889            | 1,716          | 1,470          | 440            | 337            | 373            | 520            | 465            | 655            | 610            |
| Lynhurst Subdivision - Upper              | 28,415         | 27,885         | 34,450         | 43,721         | 42,514         | 43,255         | 43,740         | 43,595         | 44,385         | 30,082         |
| Dalewood Conservation Area                | 2,765          | 3,485          | 1,895          | 2,005          | 2,275          | 3,625          | 7,190          | 4,400          | 2,550          | 2,695          |
| Homes - 4 including "castle" - 1 meter    | 655            | 665            | 685            | 605            | 695            | 510            | 435            | 790            | 675            | 635            |
| Turner Rd - 11 homes -meter 1             | 182            | 171            | 154            | 138            | 122            | 108            | 114            | 105            | 101            | 96             |
| Turner Rd - 11 homes -meter 2             | 358            | 335            | 382            | 382            | 391            | 443            | 241            | 242            | 348            | 401            |
| Turner Rd - 11 homes -meter 3             | 350            | 322            | 394            | 412            | 436            | 356            | 360            | 293            | 324            | 346            |
| Turner Rd - 11 homes -meter 4             | 398            | 299            | 325            | 378            | 474            | 253            | 300            | 293            | 388            | 260            |
| Turner Rd - 11 homes -meter 5             | 147            | 132            | 124            | 154            | 160            | 216            | 199            | 181            | 202            | 197            |
| Turner Rd - 11 homes -meter 6             | 243            | 220            | 409            | 299            | 271            | 199            | 193            | 201            | 213            | 174            |
| Turner Rd - 11 homes -meter 7             | ---            | ---            | ---            | ---            | ---            | ---            | ---            | 133            | 86             | 79             |
| Turner Rd - 11 homes -meter 8             | 154            | 95             | 87             | 81             | 79             | 70             | 84             | 60             | 54             | 50             |
| Turner Rd - 11 homes -meter 9             | 243            | 224            | 259            | 251            | 334            | 301            | 263            | 277            | 388            | 286            |
| Turner Rd - 11 homes -meter 10            | ---            | ---            | ---            | ---            | ---            | ---            | ---            | 186            | 115            | 196            |
| Turner Rd - 11 homes -meter 11            | ---            | ---            | ---            | ---            | ---            | ---            | ---            | 174            | 164            | 165            |
| Homes - 2 - 1 meter                       | 253            | 202            | 194            | 196            | 175            | 158            | 140            | 184            | 126            | 144            |
| Subtotal - CE Consumption (m³)            | 35,052         | 35,751         | 40,828         | 49,062         | 48,263         | 49,867         | 53,779         | 51,579         | 50,774         | 36,416         |
| Total Billed Consumption (m³)             | 2,655,427      | 2,431,458      | 1,977,755      | 1,863,421      | 2,026,638      | 2,110,326      | 1,980,456      | 2,596,052      | 2,744,963      | 2,549,551      |

Appendix B: 2021-2031 Capital Plan (Option 1)

|                      |   | Total     | 2021    | 2022    | 2023   | 2024   | 2025      | 2026    | 2027 | 2028 | 2029      | 2030 | 2031 |
|----------------------|---|-----------|---------|---------|--------|--------|-----------|---------|------|------|-----------|------|------|
| Pumps 1,2,3          | Pump 1 Discharge Control Valve Rebuilding and PRV Surge | 3,333     |         | 3,333   |        |        |           |         |      |      |           |      |      |
|                      | Pump 2 Discharge Control Valve Rebuilding and PRV Surge | 3,333     |         | 3,333   |        |        |           |         |      |      |           |      |      |
|                      | Pump 3 Discharge Control Valve Rebuilding and PRV Surge | 3,333     |         | 3,333   |        |        |           |         |      |      |           |      |      |
|                      | Pump 1 Suction Valve                                    | 10,000    |         | 10,000  |        |        |           |         |      |      |           |      |      |
|                      | Pump 2 Suction Valve                                    | 10,000    |         | 10,000  |        |        |           |         |      |      |           |      |      |
|                      | Pump 3 Suction Valve                                    | 10,000    |         | 10,000  |        |        |           |         |      |      |           |      |      |
|                      | Total Pump 1  | 13,333    | 0       | 13,333  | 0      | 0      | 0         | 0       | 0    | 0    | 0         | 0    | 0    |
|                      | Total Pump 2  | 13,333    | 0       | 13,333  | 0      | 0      | 0         | 0       | 0    | 0    | 0         | 0    | 0    |
|                      | Total Pump 3  | 13,333    | 0       | 13,333  | 0      | 0      | 0         | 0       | 0    | 0    | 0         | 0    | 0    |
| Generator            | Generator Engine Major Reconditioning                   | 25,000    |         |         |        | 25,000 |           |         |      |      |           |      |      |
|                      | Diesel Demo and make good                               | 15,000    |         |         | 15,000 |        |           |         |      |      |           |      |      |
|                      | Total Generator   | 40,000    | 0       | 0       | 15,000 | 25,000 | 0         | 0       | 0    | 0    | 0         | 0    | 0    |
| Chlorination         | Chlorinator System Upgrade - Eng.                       | 20,000    |         |         |        |        | 20,000    |         |      |      |           |      |      |
|                      | Chlorinator System Upgrade                              | 100,000   |         |         |        |        |           | 100,000 |      |      |           |      |      |
|                      | Total Chlorination                                      | 120,000   | 0       | 0       | 0      | 0      | 20,000    | 100,000 | 0    | 0    | 0         | 0    | 0    |
| Internal Piping      | Steel Piping Replacement                                | 50,000    |         |         |        | 50,000 |           |         |      |      |           |      |      |
|                      | Total Internal Piping                                   | 50,000    | 0       | 0       | 0      | 50,000 | 0         | 0       | 0    | 0    | 0         | 0    | 0    |
| Chambers             | WCC Secondary Chamber                                   | 65,307    |         |         |        |        | 65,307    |         |      |      |           |      |      |
|                      | WCF001 Chamber #46                                      | 65,307    |         |         |        |        | 65,307    |         |      |      |           |      |      |
|                      | WCF002 Chamber #47                                      | 65,307    |         |         |        |        | 65,307    |         |      |      |           |      |      |
|                      | WCF003 Chamber #48                                      | 65,307    |         |         |        |        | 65,307    |         |      |      |           |      |      |
|                      | WCF004 Chamber #49                                      | 65,307    |         |         |        |        | 65,307    |         |      |      |           |      |      |
|                      | WCF005 Chamber #50                                      | 70,690    |         |         |        |        |           |         |      |      | 70,690    |      |      |
|                      | WCF006 Chamber #51                                      | 70,690    |         |         |        |        |           |         |      |      | 70,690    |      |      |
|                      | WCF012 Chamber #2A                                      | 60,334    | 60,334  |         |        |        |           |         |      |      |           |      |      |
|                      | WCF013 Chamber #3                                       | 60,334    | 60,334  |         |        |        |           |         |      |      |           |      |      |
|                      | Total Chambers  | 588,583   | 120,667 | 0       | 0      | 0      | 326,535   | 0       | 0    | 0    | 141,381   | 0    | 0    |
| Ford Tower           | Valves  | 77,000    | 77,000  |         |        |        |           |         |      |      |           |      |      |
|                      | Ford Tower Decommissioning                              | 500,000   |         | 500,000 |        |        |           |         |      |      |           |      |      |
|                      | Total Ford Tower  | 577,000   | 77,000  | 500,000 | 0      | 0      | 0         | 0       | 0    | 0    | 0         | 0    | 0    |
| E & W Chambers       | East Chamber  | 139,943   |         |         |        |        | 139,943   |         |      |      |           |      |      |
|                      | West Chamber  | 151,479   |         |         |        |        |           |         |      |      | 151,479   |      |      |
|                      | Total E & W Chambers                                    | 291,422   | 0       | 0       | 0      | 0      | 139,943   | 0       | 0    | 0    | 151,479   | 0    | 0    |
| Transmission Main    | Transmission Main (500 mm)                              | 0         |         |         |        |        |           |         |      |      |           |      |      |
|                      | Transmission Main (750 mm)                              | 7,191,103 |         |         |        |        | 3,730,214 |         |      |      | 3,460,889 |      |      |
|                      | Total Transmission Main                                 | 7,191,103 | 0       | 0       | 0      | 0      | 3,730,214 | 0       | 0    | 0    | 3,460,889 | 0    | 0    |
| Planning and Studies | Watermain Replacement Study                             | 150,000   |         | 150,000 |        |        |           |         |      |      |           |      |      |
|                      | Total Planning and Studies                              | 150,000   |         | 150,000 | 0      | 0      | 0         | 0       | 0    | 0    | 0         | 0    | 0    |

Appendix C: 2021-2031 Capital Plan (Option 2)

|                      |   | Total   | 2021    | 2022    | 2023   | 2024   | 2025   | 2026    | 2027 | 2028 | 2029 | 2030 | 2031 |
|----------------------|---|---------|---------|---------|--------|--------|--------|---------|------|------|------|------|------|
| Pumps 1,2,3          | Pump 1 Discharge Control Valve Rebuilding and PRV Surge | 3,333   |         | 3,333   |        |        |        |         |      |      |      |      |      |
|                      | Pump 2 Discharge Control Valve Rebuilding and PRV Surge | 3,333   |         | 3,333   |        |        |        |         |      |      |      |      |      |
|                      | Pump 3 Discharge Control Valve Rebuilding and PRV Surge | 3,333   |         | 3,333   |        |        |        |         |      |      |      |      |      |
|                      | Pump 1 Suction Valve                                    | 10,000  |         | 10,000  |        |        |        |         |      |      |      |      |      |
|                      | Pump 2 Suction Valve                                    | 10,000  |         | 10,000  |        |        |        |         |      |      |      |      |      |
|                      | Pump 3 Suction Valve                                    | 10,000  |         | 10,000  |        |        |        |         |      |      |      |      |      |
|                      | Total Pump 1  | 13,333  | 0       | 13,333  | 0      | 0      | 0      | 0       | 0    | 0    | 0    | 0    | 0    |
|                      | Total Pump 2  | 13,333  | 0       | 13,333  | 0      | 0      | 0      | 0       | 0    | 0    | 0    | 0    | 0    |
|                      | Total Pump 3  | 13,333  | 0       | 13,333  | 0      | 0      | 0      | 0       | 0    | 0    | 0    | 0    | 0    |
| Generator            | Generator Engine Major Reconditioning                   | 25,000  |         |         |        | 25,000 |        |         |      |      |      |      |      |
|                      | Diesel Demo and make good                               | 15,000  |         |         | 15,000 |        |        |         |      |      |      |      |      |
|                      | Total Generator   | 40,000  | 0       | 0       | 15,000 | 25,000 | 0      | 0       | 0    | 0    | 0    | 0    | 0    |
| Chlorination         | Chlorinator System Upgrade - Eng.                       | 20,000  |         |         |        |        | 20,000 |         |      |      |      |      |      |
|                      | Chlorinator System Upgrade                              | 100,000 |         |         |        |        |        | 100,000 |      |      |      |      |      |
|                      | Total Chlorination                                      | 120,000 | 0       | 0       | 0      | 0      | 20,000 | 100,000 | 0    | 0    | 0    | 0    | 0    |
| Internal Piping      | Steel Piping Replacement                                | 50,000  |         |         |        | 50,000 |        |         |      |      |      |      |      |
|                      | Internal Piping   | 50,000  | 0       | 0       | 0      | 50,000 | 0      | 0       | 0    | 0    | 0    | 0    | 0    |
| Chambers             | WCF012 Chamber #2A                                      | 60,334  | 60,334  |         |        |        |        |         |      |      |      |      |      |
|                      | WCF013 Chamber #3                                       | 60,334  | 60,334  |         |        |        |        |         |      |      |      |      |      |
|                      | Total Chambers  | 120,667 | 120,667 | 0       | 0      | 0      | 0      | 0       | 0    | 0    | 0    | 0    | 0    |
| Ford Tower           | Valves  | 77,000  | 77,000  |         |        |        |        |         |      |      |      |      |      |
|                      | Ford Tower Decommissioning                              | 500,000 |         | 500,000 |        |        |        |         |      |      |      |      |      |
|                      | Total Ford Tower  | 577,000 | 77,000  | 500,000 | 0      | 0      | 0      | 0       | 0    | 0    | 0    | 0    | 0    |
| E & W Chambers       | East Chamber  | 0       |         |         |        |        |        |         |      |      |      |      |      |
|                      | West Chamber  | 0       |         |         |        |        |        |         |      |      |      |      |      |
|                      | Total E & W Chambers                                    | 0       | 0       | 0       | 0      | 0      | 0      | 0       | 0    | 0    | 0    | 0    | 0    |
| Transmission Main    | Transmission Main (500 mm)                              | 0       |         |         |        |        |        |         |      |      |      |      |      |
|                      | Transmission Main (750 mm)                              | 0       |         |         |        |        |        |         |      |      |      |      |      |
|                      | Total Transmission Main                                 | 0       | 0       | 0       | 0      | 0      | 0      | 0       | 0    | 0    | 0    | 0    | 0    |
| Planning and Studies | Watermain Replacement Study                             | 150,000 |         | 150,000 |        |        |        |         |      |      |      |      |      |
|                      | Total Planning and Studies                              | 150,000 |         | 150,000 | 0      | 0      | 0      | 0       | 0    | 0    | 0    | 0    | 0    |

Appendix D: Operating Budget Forecast

| DESCRIPTION                         | STASWSS Operating Budget Forecast (Inflated) |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
|-------------------------------------|--|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
|                                     | 2021<br>FORECAST                             | 2022<br>FORECAST | 2023<br>FORECAST | 2024<br>FORECAST | 2025<br>FORECAST | 2026<br>FORECAST | 2027<br>FORECAST | 2028<br>FORECAST | 2029<br>FORECAST | 2030<br>FORECAST | 2031<br>FORECAST |
| <b><u>Operating</u></b>             |  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| E/S Wage Allocation                 | 47,195                                       | 48,139           | 49,102           | 50,084           | 51,086           | 52,108           | 53,150           | 54,213           | 55,297           | 56,403           | 57,531           |
| Job Costing Labour                  | 48,960                                       | 49,939           | 50,938           | 51,957           | 52,996           | 54,056           | 55,137           | 56,240           | 57,364           | 58,512           | 59,682           |
| CMMS Support Fee                    | 3,009  | 3,069            | 3,131            | 3,193            | 3,257            | 3,322            | 3,389            | 3,456            | 3,526            | 3,596            | 3,668            |
| Secondary Water System - Contractor | 102,000                                      | 104,040          | 106,121          | 108,243          | 110,408          | 112,616          | 114,869          | 117,166          | 119,509          | 121,899          | 124,337          |
| Misc. Contracted Services           | 35,700                                       | 36,414           | 37,142           | 37,885           | 38,643           | 39,416           | 40,204           | 41,008           | 41,828           | 42,665           | 43,518           |
| Job Costing Equipment               | 8,670  | 8,843            | 9,020            | 9,201            | 9,385            | 9,572            | 9,764            | 9,959            | 10,158           | 10,361           | 10,569           |
| Job Costing Subcontractors          | 20,400                                       | 20,808           | 21,224           | 21,649           | 22,082           | 22,523           | 22,974           | 23,433           | 23,902           | 24,380           | 24,867           |
| City Own Property Taxes             | 4,998  | 5,098            | 5,200            | 5,304            | 5,410            | 5,518            | 5,629            | 5,741            | 5,856            | 5,973            | 6,093            |
| Insurance Expense                   | 17,768                                       | 18,124           | 18,486           | 18,856           | 19,233           | 19,618           | 20,010           | 20,410           | 20,819           | 21,235           | 21,660           |
| Communications                      | 20,400                                       | 20,808           | 21,224           | 21,649           | 22,082           | 22,523           | 22,974           | 23,433           | 23,902           | 24,380           | 24,867           |
| SCADA Maintenance                   | 10,200                                       | 10,404           | 10,612           | 10,824           | 11,041           | 11,262           | 11,487           | 11,717           | 11,951           | 12,190           | 12,434           |
| Electricity (Hydro)                 | 141,750                                      | 148,838          | 156,279          | 164,093          | 172,298          | 180,913          | 189,959          | 199,456          | 209,429          | 219,901          | 230,896          |
| Natural Gas - Heating               | 5,100  | 5,202            | 5,306            | 5,412            | 5,520            | 5,631            | 5,743            | 5,858            | 5,975            | 6,095            | 6,217            |
| Chemicals                           | 5,100  | 5,202            | 5,306            | 5,412            | 5,520            | 5,631            | 5,743            | 5,858            | 5,975            | 6,095            | 6,217            |
| Job Costing Materials               | 1,020  | 1,040            | 1,061            | 1,082            | 1,104            | 1,126            | 1,149            | 1,172            | 1,195            | 1,219            | 1,243            |
| Subtotal Operating                  | \$472,271                                    | \$485,969        | \$500,153        | \$514,845        | \$530,064        | \$545,835        | \$562,179        | \$579,121        | \$596,687        | \$614,904        | \$633,799        |
| <b><u>Purchase of Water</u></b>     |  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Primary Supply Rate Forecast        | 0.8965                                       | 0.9234           | 0.9511           | 0.9796           | 1.0090           | 1.0393           | 1.0705           | 1.1026           | 1.1357           | 1.1697           | 1.2048           |
| Forecasted Water Demand (m3)        | 1,998,025                                    | 2,027,727        | 2,056,888        | 2,086,157        | 2,115,698        | 2,145,838        | 2,172,717        | 2,199,880        | 2,227,332        | 2,255,078        | 2,283,122        |
| Subtotal Purchase of Water          | \$1,791,253                                  | \$1,872,418      | \$1,956,326      | \$2,043,689      | \$2,134,808      | \$2,230,176      | \$2,325,854      | \$2,425,580      | \$2,529,525      | \$2,637,866      | \$2,750,790      |
| <b><u>EMPS Rental</u></b>           |  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Elgin Rental Fee                    | 60,000                                       | 61,200           | 62,424           | 63,672           | 64,946           | 66,245           | 67,570           | 68,921           | 70,300           | 71,706           | 73,140           |
| Subtotal EMPS Rental                | \$60,000                                     | \$61,200         | \$62,424         | \$63,672         | \$64,946         | \$66,245         | \$67,570         | \$68,921         | \$70,300         | \$71,706         | \$73,140         |
| TOTAL OPERATING EXPENDITURES        | \$2,323,524                                  | \$2,419,587      | \$2,518,903      | \$2,622,206      | \$2,729,818      | \$2,842,256      | \$2,955,603      | \$3,073,622      | \$3,196,511      | \$3,324,475      | \$3,457,728      |

Appendix E: STASWSS Lifecycle Analysis

|                              | Replacement Value<br>(Inflated) | Useful<br>Life | Next Renewal<br>year | Replacement<br>Value (2020) | 2021-2031 Annual<br>Lifecycle Contribution |
|------------------------------|---------------------------------|----------------|----------------------|-----------------------------|--|
| <b>EMPS</b>                  |                                 |                |                      |                             |  |
| Pump No 1 (now with VFD)     | 190,992                         | 40             | 2098                 | 89,993                      | 3,030                                      |
| Pump No 2 (now with VFD)     | 190,992                         | 40             | 2098                 | 89,993                      | 3,030                                      |
| Pump No 3 (now with VFD)     | 190,992                         | 40             | 2098                 | 89,993                      | 3,030                                      |
| Generator                    | 839,467                         | 25             | 2043                 | 532,353                     | 25,343                                     |
| MCC/SCADA                    | 280,192                         | 30             | 2053                 | 145,764                     | 6,659                                      |
| Chlorination Equipment       | 559,741                         | 25             | 2060                 | 253,501                     | 16,898                                     |
| Subtotal (EMPS)              |                                 |                |                      | 1,201,596                   | 57,992                                     |
| <b>Meter Chambers/Tower</b>  |                                 |                |                      |                             |  |
| Secondary Chamber            | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #46                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #47                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #48                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #49                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #50                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #51                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #1                   | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #2                   | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #2A                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #3                   | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #4                   | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #5                   | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #6                   | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #7                   | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #8                   | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #9                   | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #10                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #11                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #12                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #13                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Wellington Transmission Main | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Lynhurst Subdivision         | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| St. George Street            | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| F023D                        | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #14                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| No chamber number            | 261,154                         | 70             | 2037                 | 165,612                     | 1,636                                      |
| Chamber #15                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #16                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #17                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| F027A                        | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #18                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #19                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #20                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| F030A                        | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #21                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #22                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| F033                         | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #23                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| F033B                        | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #24                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber #25                  | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| C.N. Chamber                 | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Chamber                      | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Southwold #1                 | 93,274                          | 70             | 2037                 | 59,151                      | 584  |
| Subtotal (Meter Chambers)    |                                 |                |                      | 2,768,237                   | 27,344                                     |
| <b>E&amp;W</b>               |                                 |                |                      |                             |  |
| East Chamber                 | 441,328                         | 55             | 2083                 | 126,751                     | 4,249                                      |
| West Chamber                 | 441,328                         | 55             | 2083                 | 126,751                     | 4,249                                      |
| Subtotal (E&W Chambers)      |                                 |                |                      | 253,501                     | 8,498                                      |
| <b>Transmission Main</b>     |                                 |                |                      |                             |  |
| Transmission Main (500mm)    | 22,373,172                      | 75             | 2118                 | 3,213,000                   | 122,628                                    |
| Transmission main (750 mm)   | 120,991,309                     | 75             | 2118                 | 17,375,501                  | 663,157                                    |
| Subtotal (Transmission Main) |                                 |                |                      | 20,588,501                  | 785,785                                    |
| Total                        |                                 |                |                      | \$24,811,835                | \$879,619                                  |

Appendix F: 2021 - 2031 Capital Works and Financing Plan

|                        |   | Total     | 2021    | 2022    | 2023   | 2024   | 2025      | 2026    | 2027 | 2028 | 2029      | 2030 | 2031 |
|------------------------|---|-----------|---------|---------|--------|--------|-----------|---------|------|------|-----------|------|------|
| Pumps 1,2,3            | Pump 1 Discharge Control Valve Rebuilding and PRV Surge | 3,333     |         | 3,333   |        |        |           |         |      |      |           |      |      |
|                        | Pump 2 Discharge Control Valve Rebuilding and PRV Surge | 3,333     |         | 3,333   |        |        |           |         |      |      |           |      |      |
|                        | Pump 3 Discharge Control Valve Rebuilding and PRV Surge | 3,333     |         | 3,333   |        |        |           |         |      |      |           |      |      |
|                        | Pump 1 Suction Valve                                    | 10,000    |         | 10,000  |        |        |           |         |      |      |           |      |      |
|                        | Pump 2 Suction Valve                                    | 10,000    |         | 10,000  |        |        |           |         |      |      |           |      |      |
|                        | Pump 3 Suction Valve                                    | 10,000    |         | 10,000  |        |        |           |         |      |      |           |      |      |
|                        | Total Pump 1  | 13,333    | 0       | 13,333  | 0      | 0      | 0         | 0       | 0    | 0    | 0         | 0    | 0    |
|                        | Total Pump 2  | 13,333    | 0       | 13,333  | 0      | 0      | 0         | 0       | 0    | 0    | 0         | 0    | 0    |
|                        | Total Pump 3  | 13,333    | 0       | 13,333  | 0      | 0      | 0         | 0       | 0    | 0    | 0         | 0    | 0    |
| Generator              | Generator Engine Major Reconditioning                   | 25,000    |         |         |        | 25,000 |           |         |      |      |           |      |      |
|                        | Diesel Demo and make good                               | 15,000    |         |         | 15,000 |        |           |         |      |      |           |      |      |
|                        | Total Generator   | 40,000    | 0       | 0       | 15,000 | 25,000 | 0         | 0       | 0    | 0    | 0         | 0    | 0    |
| Chlorination           | Chlorinator System Upgrade - Eng.                       | 20,000    |         |         |        |        | 20,000    |         |      |      |           |      |      |
|                        | Chlorinator System Upgrade                              | 100,000   |         |         |        |        |           | 100,000 |      |      |           |      |      |
|                        | Total Chlorination                                      | 120,000   | 0       | 0       | 0      | 0      | 20,000    | 100,000 | 0    | 0    | 0         | 0    | 0    |
| Internal Piping        | Steel Piping Replacement                                | 50,000    |         |         |        | 50,000 |           |         |      |      |           |      |      |
|                        | Total Internal Piping                                   | 50,000    | 0       | 0       | 0      | 50,000 | 0         | 0       | 0    | 0    | 0         | 0    | 0    |
| Chambers               | WCC Secondary Chamber                                   | 65,307    |         |         |        |        | 65,307    |         |      |      |           |      |      |
|                        | WCF001 Chamber #46                                      | 65,307    |         |         |        |        | 65,307    |         |      |      |           |      |      |
|                        | WCF002 Chamber #47                                      | 65,307    |         |         |        |        | 65,307    |         |      |      |           |      |      |
|                        | WCF003 Chamber #48                                      | 65,307    |         |         |        |        | 65,307    |         |      |      |           |      |      |
|                        | WCF004 Chamber #49                                      | 65,307    |         |         |        |        | 65,307    |         |      |      |           |      |      |
|                        | WCF005 Chamber #50                                      | 70,690    |         |         |        |        |           |         |      |      | 70,690    |      |      |
|                        | WCF006 Chamber #51                                      | 70,690    |         |         |        |        |           |         |      |      | 70,690    |      |      |
|                        | WCF012 Chamber #2A                                      | 60,334    | 60,334  |         |        |        |           |         |      |      |           |      |      |
|                        | WCF013 Chamber #3                                       | 60,334    | 60,334  |         |        |        |           |         |      |      |           |      |      |
|                        | Total Chambers  | 588,583   | 120,667 | 0       | 0      | 0      | 326,535   | 0       | 0    | 0    | 141,381   | 0    | 0    |
| Ford Tower             | Valves  | 77,000    | 77,000  |         |        |        |           |         |      |      |           |      |      |
|                        | Ford Tower Decommissioning                              | 500,000   |         | 500,000 |        |        |           |         |      |      |           |      |      |
|                        | Total Ford Tower  | 577,000   | 77,000  | 500,000 | 0      | 0      | 0         | 0       | 0    | 0    | 0         | 0    | 0    |
| E & W Chambers         | East Chamber  | 139,943   |         |         |        |        | 139,943   |         |      |      |           |      |      |
|                        | West Chamber  | 151,479   |         |         |        |        |           |         |      |      | 151,479   |      |      |
|                        | Total E & W Chambers                                    | 291,422   | 0       | 0       | 0      | 0      | 139,943   | 0       | 0    | 0    | 151,479   | 0    | 0    |
| Transmission Main      | Transmission Main (500 mm)                              | 0         |         |         |        |        |           |         |      |      |           |      |      |
|                        | Transmission Main (750 mm)                              | 7,191,103 |         |         |        |        | 3,730,214 |         |      |      | 3,460,889 |      |      |
|                        | Total Transmission Main                                 | 7,191,103 | 0       | 0       | 0      | 0      | 3,730,214 | 0       | 0    | 0    | 3,460,889 | 0    | 0    |
| Planning and Studies   | Watermain Replacement Study                             | 150,000   |         | 150,000 |        |        |           |         |      |      |           |      |      |
|                        | Total Planning and Studies                              | 150,000   |         | 150,000 | 0      | 0      | 0         | 0       | 0    | 0    | 0         | 0    | 0    |
| Capital Plan Financing | Provincial/Federal Grants                               | -         | -       | -       | -      | -      | -         | -       | -    | -    | -         | -    | -    |
|                        | Debentures  | -         | -       | -       | -      | -      | -         | -       | -    | -    | -         | -    | -    |
|                        | Water Reserve   | 9,048,106 | 197,667 | 689,999 | 15,000 | 75,000 | 4,216,692 | 100,000 | -    | -    | 3,753,748 | -    | -    |
|                        | Total Capital Plan Financing                            | 9,048,106 | 197,667 | 689,999 | 15,000 | 75,000 | 4,216,692 | 100,000 | -    | -    | 3,753,748 | -    | -    |

Appendix G: STASWSS Operating Expense and Revenue Forecast

| DESCRIPTION                         | 2021<br>FORECAST | 2022<br>FORECAST | 2023<br>FORECAST | 2024<br>FORECAST | 2025<br>FORECAST | 2026<br>FORECAST | 2027<br>FORECAST | 2028<br>FORECAST | 2029<br>FORECAST | 2030<br>FORECAST | 2031<br>FORECAST |
|-------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| <b><u>Operating</u></b>             |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| E/S Wage Allocation                 | 47,195           | 48,139           | 49,102           | 50,084           | 51,086           | 52,108           | 53,150           | 54,213           | 55,297           | 56,403           | 57,531           |
| Job Costing Labour                  | 48,960           | 49,939           | 50,938           | 51,957           | 52,996           | 54,056           | 55,137           | 56,240           | 57,364           | 58,512           | 59,682           |
| CMMS Support Fee                    | 3,009            | 3,069            | 3,131            | 3,193            | 3,257            | 3,322            | 3,389            | 3,456            | 3,526            | 3,596            | 3,668            |
| Secondary Water System - Contractor | 102,000          | 104,040          | 106,121          | 108,243          | 110,408          | 112,616          | 114,869          | 117,166          | 119,509          | 121,899          | 124,337          |
| Misc. Contracted Services           | 35,700           | 36,414           | 37,142           | 37,885           | 38,643           | 39,416           | 40,204           | 41,008           | 41,828           | 42,665           | 43,518           |
| Job Costing Equipment               | 8,670            | 8,843            | 9,020            | 9,201            | 9,385            | 9,572            | 9,764            | 9,959            | 10,158           | 10,361           | 10,569           |
| Job Costing Subcontractors          | 20,400           | 20,808           | 21,224           | 21,649           | 22,082           | 22,523           | 22,974           | 23,433           | 23,902           | 24,380           | 24,867           |
| City Own Property Taxes             | 4,998            | 5,098            | 5,200            | 5,304            | 5,410            | 5,518            | 5,629            | 5,741            | 5,856            | 5,973            | 6,093            |
| Insurance Expense                   | 17,768           | 18,124           | 18,486           | 18,856           | 19,233           | 19,618           | 20,010           | 20,410           | 20,819           | 21,235           | 21,660           |
| Communications                      | 20,400           | 20,808           | 21,224           | 21,649           | 22,082           | 22,523           | 22,974           | 23,433           | 23,902           | 24,380           | 24,867           |
| SCADA Maintenance                   | 10,200           | 10,404           | 10,612           | 10,824           | 11,041           | 11,262           | 11,487           | 11,717           | 11,951           | 12,190           | 12,434           |
| Electricity (Hydro)                 | 141,750          | 148,838          | 156,279          | 164,093          | 172,298          | 180,913          | 189,959          | 199,456          | 209,429          | 219,901          | 230,896          |
| Natural Gas - Heating               | 5,100            | 5,202            | 5,306            | 5,412            | 5,520            | 5,631            | 5,743            | 5,858            | 5,975            | 6,095            | 6,217            |
| Chemicals                           | 5,100            | 5,202            | 5,306            | 5,412            | 5,520            | 5,631            | 5,743            | 5,858            | 5,975            | 6,095            | 6,217            |
| Job Costing Materials               | 1,020            | 1,040            | 1,061            | 1,082            | 1,104            | 1,126            | 1,149            | 1,172            | 1,195            | 1,219            | 1,243            |
| Subtotal Operating                  | \$472,271        | \$485,969        | \$500,153        | \$514,845        | \$530,064        | \$545,835        | \$562,179        | \$579,121        | \$596,687        | \$614,904        | \$633,799        |
| <b><u>Purchase of Water</u></b>     |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Primary Supply Rate Forecast        | 0.8965           | 0.9234           | 0.9511           | 0.9796           | 1.0090           | 1.0393           | 1.0705           | 1.1026           | 1.1357           | 1.1697           | 1.2048           |
| Forecasted Water Demand (m3)        | 1,998,025        | 2,027,727        | 2,056,888        | 2,086,157        | 2,115,698        | 2,145,838        | 2,172,717        | 2,199,880        | 2,227,332        | 2,255,078        | 2,283,122        |
| Subtotal Purchase of Water          | \$1,791,253      | \$1,872,418      | \$1,956,326      | \$2,043,689      | \$2,134,808      | \$2,230,176      | \$2,325,854      | \$2,425,580      | \$2,529,525      | \$2,637,866      | \$2,750,790      |
| <b><u>EMPS Rental</u></b>           |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Elgin Rental Fee                    | 60,000           | 61,200           | 62,424           | 63,672           | 64,946           | 66,245           | 67,570           | 68,921           | 70,300           | 71,706           | 73,140           |
| Subtotal EMPS Rental                | \$60,000         | \$61,200         | \$62,424         | \$63,672         | \$64,946         | \$66,245         | \$67,570         | \$68,921         | \$70,300         | \$71,706         | \$73,140         |
| <br>TOTAL OPERATING EXPENDITURES    | <br>\$2,323,524  | <br>\$2,419,587  | <br>\$2,518,903  | <br>\$2,622,206  | <br>\$2,729,818  | <br>\$2,842,256  | <br>\$2,955,603  | <br>\$3,073,622  | <br>\$3,196,511  | <br>\$3,324,475  | <br>\$3,457,728  |
| <br><b><u>Revenues</u></b>          |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |                  |
| Total Operating Revenue             | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                |
| Water Billing Recovery              | 2,909,463        | 3,069,666        | 3,237,588        | 3,382,168        | 3,519,389        | 3,662,568        | 3,805,195        | 3,953,372        | 4,076,381        | 4,203,992        | 4,336,392        |
| Reserve Fund Interest               | 51,942           | 50,900           | 64,619           | 78,785           | 11,226           | 25,242           | 42,153           | 59,988           | 3,708            | 21,380           | 39,398           |
| TOTAL REVENUE                       | \$2,961,405      | \$3,120,566      | \$3,302,207      | \$3,460,953      | \$3,530,615      | \$3,687,810      | \$3,847,348      | \$4,013,360      | \$4,080,090      | \$4,225,372      | \$4,375,789      |

# ST. THOMAS AREA SECONDARY WATER SUPPLY SYSTEM

Financial Plan #190-301  
2021 - 2031



TOWNSHIP OF  
**Southwold**

# St. Thomas Area Secondary Water Supply System

2021 - 2031 Financial Plan #190-301

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## 1 Introduction

The objective of the report provided herein is to convert the findings of the “St. Thomas Area Secondary Water Supply System Water Rate Study, 2021-2031” (2020 Rate Study) into the prescribed reporting requirements for a financial plan as defined by Ontario Regulation 453/07 (O.Reg. 453/07). In general, a financial plan requires an in-depth analysis of capital and operating needs, a review of current and future demand versus supply, and consideration of available funding sources. The detailed financial planning and forecasting for the STASWSS has been completed and documented by City staff within the 2020 Rate Study.

## 2 Legislative Drivers

### 2.1 Safe Drinking Water Act, 2002

The Safe Drinking Water Act, 2002 (SDWA) requires that all providers of municipal drinking water obtain a Municipal Drinking Water Licence (MDWL). In order to become licensed, a municipal water provider must satisfy five key requirements as per section 44 (1):

1. Obtain a Drinking Water Works Permit (DWWP).
2. Acceptance of the operational plan for the system based on the Drinking Water Quality Management Standard (DWQMS).
3. Accreditation of the Operating Authority.
4. Prepare and provide a financial plan.
5. Obtain Permit To Take Water (if applicable).

The preparation of a financial plan is a key requirement for licensing and as such, must be undertaken by all municipal drinking water system owners.

### 2.2 Ontario Regulation 453/07 – Financial Plans

O.Reg. 453/07, under the SDWA, 2002, provides details relating to the preparation of water system Financial Plans. The regulation sets out general Financial Plan requirements and specific requirements for existing water systems.

#### 2.2.1 Financial Plan Requirements – Existing System

The requirements for existing systems are summarized as follows:

- The plans must be approved by Council resolution (or governing body);
- The plans must include a statement that the financial impacts have been considered and apply for a minimum six-year period (commencing in the year of licence expiry);
- The plans must include detail regarding proposed or projected financial operations itemized by total revenues, total expenses, annual surplus/deficit and accumulated surplus/deficit (i.e. the components of a “Statement of Operations” as per the P.S.A.B.) for each year in which the financial plans apply;
- The plans must present financial position itemized by total financial assets, total liabilities, net debt, non-financial assets, and tangible capital assets (i.e. the components of a “Statement of Financial Position” as per P.S.A.B.) for each year in which the financial plans apply;
- Gross cash receipts/payments itemized by operating transactions, capital transactions, investing transactions and financial transactions (i.e. the components of a “Statement of Cash Flow” as per P.S.A.B.) for each year in which the financial plans apply;
- Financial plans applicable to two or more solely-owned drinking water systems can be prepared as if they are for one drinking water system;

- Financial plans are to be made available to the public upon request and at no charge;
- If a website is maintained, financial plans are to be made available to the public through publication on the Internet at no charge;
- Notice of the availability of the financial plans is to be given to the public; and
- Financial plan is to be submitted to the Ministry of Municipal Affairs and Housing.

#### 2.2.2 Financial Plan Requirements - General

The financial plans shall be for a forecast period of at least six years but longer planning horizons are encouraged. The financial plan is to be completed, approved and submitted at the time of licence renewal (i.e. six months prior to licence expiry). Financial plans may be amended and additional information beyond what is prescribed can be included if deemed necessary.

The financial plan must contain on the front page, the appropriate financial plan number as set out in Schedule A of the Municipal Drinking Water Licence document.

#### 2.2.3 Public Sector Accounting Board (PSAB) Requirements

The components of the financial plans indicated by the regulation are consistent with the requirements for financial statement presentation as set out in section PS1200 of the Canadian Institute of Chartered Accountants (C.I.C.A.) Public Sector Accounting Handbook:

“Financial statements should include a Statement of Financial Position, a Statement of Operations, a Statement of Change in Net Debt, and a Statement of Cash Flow.”

The plan has been prepared in accordance with the requirements of PS1200 and PS3150.

## 3 Sustainable Financial Planning

### 3.1 Introduction

In general, sustainability refers to the ability to maintain a certain position over time. While the SDWA, 2002 requires a declaration of the financial plan's sustainability, it does not give a clear definition of what would be considered sustainable. The Ministry of the Environment, Conservation and Parks (MECP) released a guideline entitled “Towards Financially Sustainable Drinking-Water and Wastewater Systems”, that provides the following guiding principles to achieving sustainability:

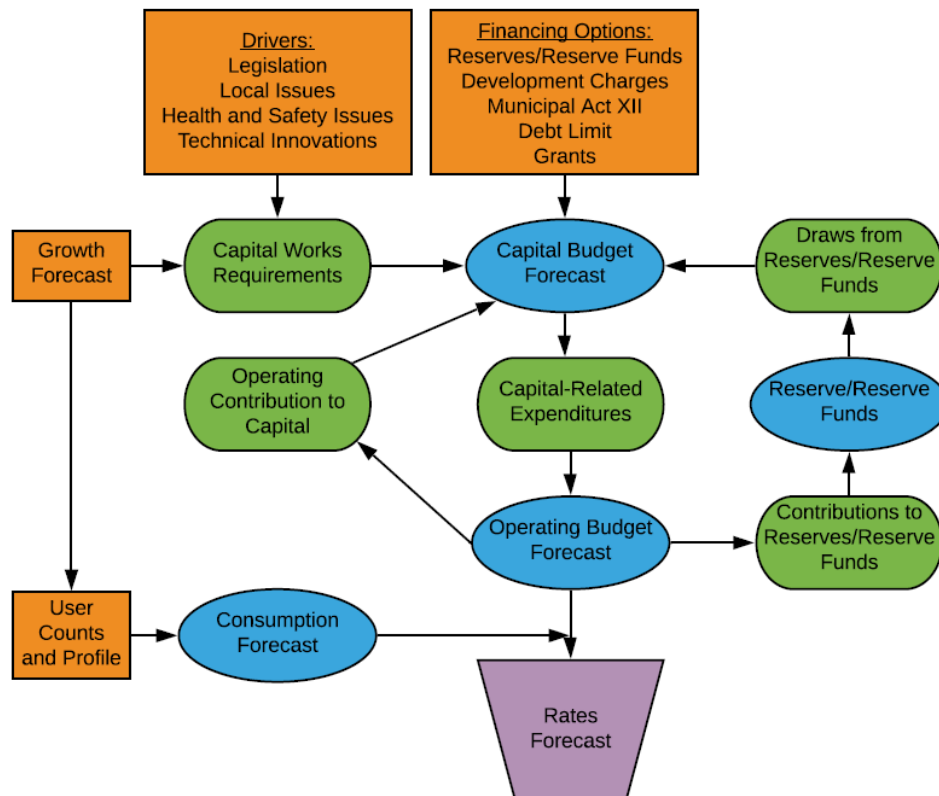
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|--------------|--|
| Principle #1 | Ongoing public engagement and transparency can build support for, and confidence in, financial plans and the system(s) to which they relate.   |
| Principle #2 | An integrated approach to planning among water, wastewater, 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 | Life-cycle 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.

### 3.2 Water Rate Study

City of St. Thomas Staff have completed extensive financial planning, as documented in the 2020 Rate Study, conducted on behalf of the STASWSS. The study process was designed to address “full cost” principles and reflect the guiding principles toward sustainable financial planning. Figure 3-1 below summarizes the process.

*Figure 3-1: Water Rate Calculation Process*



As a result of employing this process, the 2020 Rate Study provides a sound financial plan for the STASWSS by providing:

- A detailed assessment of current and future capital needs including an analysis of potential funding sources;
- An analysis of fixed and variable operating costs in order to determine how they will be impacted by evolving infrastructure needs and system growth;
- A review and recommendation on rate structures that ensure revenues are equitable and sufficient to meet system needs; and
- A public process that involves ongoing consultation with the main stakeholders

including staff, the Joint Board of Management, the general public (specifically the users of the system) and others with the aim of gaining input and collaboration on the sustainability of the financial plan.

The details of the financial plan arising from the 2020 Rate Study are contained in Appendices A, B and C.

## **4 Approach**

### **4.1 Overview**

The 2020 Rate Study has been prepared on a modified cash basis; therefore, a conversion was required in order to present a full accrual financial plan for the purposes of this report. The conversion process used will help to establish the structure of the financial plan along with the opening balances that will underpin the forecast. The following section outlines the conversion process utilized and summarizes the adjustments made to prepare the financial plan.

### **4.2 Conversion Process**

The conversion from the existing modified cash basis financial plan to the full accrual reporting format required under O.Reg. 453/07 can be summarized in the following steps:

1. Calculate Tangible Capital Asset Balances
2. Convert Statement of Operations
3. Convert Statement of Financial Position
4. Convert Statement of Cash Flow and Net Assets/Debt
5. Verification and Note Preparation

#### **4.2.1 Calculate Tangible Capital Asset Balances**

In calculating tangible capital asset balances, existing and future purchased, developed, and/or contributed assets have been considered. For existing water assets, an inventory has already been compiled and summarized within the 2020 Rate Study. Given the prospective nature of the 2020 Rate Study, replacement cost is provided for each asset. However, historical cost (which is the original cost to purchase, develop, or construct each asset) is required for financial reporting purposes. Historical costs were provided by City of St. Thomas staff.

Future water capital needs have also been determined and summarized within the 2020 Rate Study. The STASWSS does not anticipate any assets to be contributed by developers and other parties (at no or partial cost to the STASWSS).

For all assets, existing and planned the following formula has been used to calculate the tangible capital asset balances for each year of the forecast period for this water financial plan.

- Historical Cost (to end of prior year)
- Plus – Acquisition Cost of New Assets
- Plus – Gain on Disposal(s)
- Less – Accumulated Amortization to end of prior year
- Less – Current Year Amortization
- Less – Loss on Disposal(s)
- Net Book Value

The TCA balances are reported on the Statement of Financial Position and Schedule of Tangible Capital Assets.

#### 4.2.2 Convert Statement of Operations

To convert the Statement of Operations from a modified cash to full accrual basis, a number of adjustments are required.

- Debt Repayment
  - The principal portion of the payment needs to be removed under the accrual basis
  - The principal payments are reported on the Statement of Financial Position
- Transfers to and from Reserves
  - These transfers are represented by changes in cash and cash equivalents and accumulated surplus
- Tangible Capital Asset related Transactions
  - Amortization and gains/losses on disposals are reported on the Statement of Operations in order to include the costs related to their operating activities over their useful lives

#### 4.2.3 Convert Statement of Financial Position

As outlined in PS1200, the opening balances for the remaining accounts: accounts receivable, accounts payable, outstanding debt (principal only) and deferred revenue; have been recorded and classified.

It is noted that for accounts payable, it is difficult to isolate the water only portion. Refer to Projected Statement of Financial Position under the Financial Plan section of this report for more information.

#### 4.2.4 Convert Statement of Cash Flow and Net Financial Assets/Debt

The Statement of Cash Flow summarizes how the STASWSS financed its activities. The statement relies on Statement of Financial Position, the Statement of Operations and other available data.

The Statement of Change in Net Financial Assets/Debt reconciles the difference between the surplus or deficit from current operations and the change in net financial assets/debt for the year. Although the Statement of Change in Net Financial Assets/Debt is not required under O.Reg. 453/07, it has been included in this report as a further indicator of financial viability.

#### 4.2.5 Verification and Note Preparation

The final step in the conversion process is to ensure that all of the statements created by the previous steps are in balance. The Statement of Financial Position summarizes the resources and obligations of the STASWSS at a set point in time. The Statement of Operations summarizes how these resources and obligations changed over the reporting period. To this end, the accumulated surplus/deficit reported on the Statement of Financial Position should equal the accumulated surplus/deficit reported on the Statement of Operations.

The Statement of Change in Net Financial Assets/Debt and the Statement of Financial Position are also linked in terms of reporting on net financial assets/debt. On the Statement of Financial Position, net financial assets/debt is equal to the difference between financial assets and liabilities and should equal net financial assets/debt as calculated on the Statement of Net Financial Assets/Debt.

## **5 Financial Plan**

### **5.1 Introduction**

The following tables provide the complete financial plan for the STASWSS for the periods ending from December 31, 2020 projected to December 31, 2031. As required, these statements are prepared in accordance with the Public Sector Accounting Standards. A brief description and analysis of each table is provided below.

It is important to note that the financial statements included are projected based on assumptions determined by financial and operational managers of the water system. These statements are not audited and contain various estimates as described in the “Notes to the Financial Plan” section below. Actual financial results will vary from the projections herein and the differences may be material.

### **5.2 Water Financial Plan**

#### **5.2.1 Statement of Financial Position**

The Statement of Financial Position includes a number of financial indicators for financial sustainability. The first important indicator is net financial assets/(debt), which provides an indication of the system’s future revenue requirement. A net financial asset position is where financial assets are greater than liabilities and implies that the system has the resources to finance future operations. Conversely, a net debt position implies that the future revenues generated by the system will be needed to finance past transactions, as well as future operations. The Statement of Financial Position, included in Appendix D indicates that at the end of 2021, the STASWSS will be in a net financial asset position of approximately \$3,232,500. The financial plan forecasts that net financial asset position will vary over the period, as the STASWSS is planning to initiate replacement of the Transmission main within the period, requiring significant investment from reserves, however no use of debt is considered. Net financial assets are projected to grow by approximately \$76,000 over the forecast period.

Another important indicator on the Statement of Financial Position is the tangible capital asset balance. In general terms, an increase in the tangible capital asset balance indicates that assets may have been acquired either through purchase by the STASWSS or donation/contribution by a third party. A decrease in the tangible capital asset balance can indicate a disposal, write down, or use of assets. A use of assets is usually represented by an increase in accumulated amortization due to annual amortization expenses arising as a result of allocating the cost of the asset to operations over the asset’s useful life. The Statement of Financial Position included in Appendix D shows that tangible capital assets are expected to increase by approximately \$7.3 million over the forecast period. This indicates that the STASWSS has plans to invest in tangible capital assets in excess of the anticipated use of existing assets over the forecast period.

#### **5.2.2 Statement of Operations and Accumulated Surplus/(Deficit)**

The Statement of Operations included in Appendix E summarizes the revenues and expenses generated by the water system. The annual surplus/deficit measures whether the revenues generated were sufficient to cover the expenses incurred and in turn, whether net financial assets have been maintained or depleted. The Statement of Operations, included in Appendix E illustrates the ratio of expenses to revenues hovering in the 77 – 83% range for the majority of the period, indicating that revenues are sufficient to cover the expenses incurred. The exception to the statement above, is 2021 (101%), in which, a significant one-time non-TCA related expense is anticipated. Annual surplus increases from approximately \$607,000 in 2021 to \$765,500 in 2031. It is important to

note that an annual surplus is beneficial to ensure funding is available to non-expense costs such as tangible capital asset acquisitions, reserve/reserve fund transfers and debt principal payments.

Another important indicator on this statement is accumulated surplus/deficit. An accumulated surplus indicates that the available net resources are sufficient to provide future water services. An accumulated deficit indicates that resources are insufficient to provide future services and that borrowing, or rate increases are required to finance annual deficits. The Statement of Operations included in Appendix E, proposes to add approximately \$7.4 million to a 2021 opening accumulated surplus of \$3.7 million over the forecast period. This accumulated surplus, as indicated in The Statement of Operations, is predominantly made up of reserve and reserve fund balances as well as planned and historical investments in tangible capital assets.

### **5.2.3 Statement of Change in Net Financial Assets/Debts**

The Statement of Change in Net Financial Assets/Debt indicates whether revenue generated was sufficient to cover operating and non-financial asset costs (i.e. inventory supplies, prepaid expenses, tangible capital assets, etc.) and in so doing, explains the difference between the annual surplus/deficit and the change in net financial assets/debt for the period. The Statement of Change in Net Financial Assets/Debt indicates that in 2025 and 2029, forecasted tangible capital asset acquisitions (net of amortization) exceed forecasted annual surpluses resulting in decreases in net financial assets/(debt). In the remaining years forecasted annual surplus exceeds forecasted tangible capital asset acquisitions (net of amortization) resulting in annual increases in net financial assets/(debt). Overall, this allows for a long-term plan of funding capital through accumulated surplus (i.e. reserves and reserve funds). This is evidenced by the ratio of cumulative annual surplus before amortization to cumulative tangible capital asset acquisitions, after initially increasing from 3.22 in 2021 to 6.92 in 2024, the ratio dips to 0.66 in 2025 as Transmission Main replacement initiates. The ratio subsequently increases to a value of 0.99 in 2031, to round out the forecast period.

### **5.2.4 Statement of Cash Flow**

The Statement of Cash Flow included as Appendix H summarizes how water systems are expected to generate and use cash resources during the forecast period. The statement of cash flows focuses on the cash aspects of the activities of a water system; it is the link between the cash based and accrual-based accounting. The Statement of Cash Flow indicates that cash from operations will be used to fund capital transactions (i.e. tangible capital asset acquisitions) and build internal reserves and reserve funds over the forecast period.

The financial plan projects the cash position of the water system to vary throughout the period as a result of significant investment in tangible capital assets. Cash positions move from a 2021 balance of approximately \$3.0 million, increasing to nearly \$4.5 in 2024, followed by a decrease in 2025 due to TCA acquisition. The cash balance will increase again to 2028, and be depleted to just over \$1.0 million in 2029, again due to TCA acquisition. The balance at period end, 2031, is anticipated to be approximately \$2.5 million. For further discussion on projected cash balances please refer to the Notes to the Financial Plan.

## **6 Notes to Financial Plan**

The financial plan format as outlined in section 4 closely approximates the full accrual format used by the public sector on their audited financial statements. However, the financial plan is not an audited document and contains various estimates. In this regard, Section 3 (2) of O.Reg. 453/07 states the following:

“Each of the following sub-subparagraphs applies only if the information referred to in the sub-subparagraph is known to the owner at the time the financial plans are prepared:

1. Sub-subparagraphs 4 i A, B and C of subsection (1)
2. Sub-subparagraphs 4 iii A, C, E and F of subsection (1).”

The information referred to in sub-subparagraphs 4 i A, B and C of subsection (1) includes:

- A. Total financial assets (i.e. cash and receivables);
- B. Total liabilities (i.e. payables, debt and deferred revenue);
- C. Net debt (i.e. the difference between A and B above).

The information referred to in sub-subparagraphs 4 iii A, C, E and F of subsection (1) includes:

- A. Operating transactions that are cash received from revenues, cash paid for operating expenses and finance charges
- B. Investing transactions that are acquisitions and disposal of investments
- C. Change in cash and cash equivalents during the year
- D. Cash and cash equivalents at the beginning and end of the year

The assumptions used in creating this financial plan have been documented below:

### **1. Cash, Receivables and Payables**

It is assumed that the opening cash balances required to complete the financial plan are equal to:

Ending Reserve/Reserve Fund Balance  
Plus: Ending Accounts Payable Balance  
Less: Ending Accounts Receivable Balance  
Equals: *Approximate Ending Cash Balance*

For the St. Thomas Area Secondary Water Supply System, receivable and payable balances were estimated for each year of the forecast period based on the following factors:

- a) Receivables: Based on historical levels of system-wide payables, as a proportion of revenues; and
- b) Payables: Based on historical levels of system-wide payables, as a proportion of expenses.

### **2. Debt**

STASWSS had no outstanding water related debt at the end of 2021, and no debt proceeds are anticipated during the forecast period.

For financial reporting purposes, debt principal payments represent a decrease in debt liability and the interest payments represent a current year operating expense.

### **3. Deferred Revenue**

Deferred revenue is typically made up of water development charge reserve fund balances which are considered to be a liability for financial reporting purposes until the funds are used to emplace the works for which they have been collected.

The St. Thomas Area Secondary Water Supply System does not collect water development charges, therefore deferred revenue is assumed to be zero over the forecast period.

#### **4. Tangible Capital Assets**

- Opening net book value of tangible capital assets includes water related assets in the following categories:
  - i. Linear Assets (i.e. mains)
  - ii. Facilities
- Amortization is calculated based on the straight-line approach.
- Given the planned asset replacement forecast in the 2020 Rate Study, useful life on acquisitions of facility-related assets is assumed to be equal to the weighted average useful life for all assets on hand.
- Write-offs are assumed to equal \$0 for each year in the forecast period.
- Tangible capital assets are shown on a net basis. It is assumed that disposals occur when the asset is being replaced, unless the asset is documented as a new asset. The value of each asset disposal is calculated by estimating the original purchase/construction date and deflating current replacement cost values to those estimated dates in order to calculate original historical cost.
- Residual value is assumed to be \$0 for all assets contained within the forecast period.
- Contributed Assets are deemed to be insignificant/unknown during the forecast period and are, therefore, assumed to be \$0.
- The STASWSS is unaware of any specific lead service piping in the municipal water system. However, when older portions of the water main system are replaced as part of the ongoing replacement program, any lead service pipes will be replaced if and when found.

The balance of tangible capital assets is summarized in Appendix I:

#### **5. Accumulated Surplus**

Opening accumulated surplus for the forecast period is reconciled as follows:

##### **OPENING ACCUMULATED SURPLUS, 2021**

###### **Reserve Balances**

|                              |                  |
|------------------------------|------------------|
| Reserves: Capital/Other      | 2,793,454        |
| <b>Total Reserve Balance</b> | <b>2,793,454</b> |
| Add: Tangible Capital Assets | 912,902          |
| <b>Total Opening Balance</b> | <b>3,706,356</b> |

The accumulated surplus reconciliation for all years within the forecast period is contained in Appendix E.

#### **6. Other Revenue**

Other revenue typically includes grants, late payment charges and other non- operating

general revenues.

**7. Operating Expenses**

Capital expenditures for items not meeting the definition of tangible capital assets have been reclassified as operating expenses and have been expensed in the year in which they occur.

**7 Process for Financial Plan Approval and Submission to the Province**

As mentioned in section 1.2, the requirement to prepare the financial plan is provided in Section 32 (5) 2 ii of the S.D.W.A. Proof of the preparation of a financial plan is one of the submission requirements for municipal drinking water licensing and upon completion, must be submitted to the Ministry of the Environment, Conservation and Parks. As part of O.Reg. 453/07, the process established for plan approval, public circulation and filing is set out as follows:

1. The financial plan must be approved by resolution of the municipality who owns the drinking water system or the governing body of the owner. (O.Reg. 453/07, Section 3 (1) 1)
2. The owner of the drinking water system must provide notice advertising the availability of the financial plan. The plans will be made available to the public upon request and without charge. The plans must also be made available to the public on the municipality's website. (O.Reg. 453/07, Section 3 (1) 5)
3. The owner of the drinking water system must provide a copy of the financial plan to the Director of Policy Branch, Ministry of Municipal Affairs and Housing. (O.Reg. 453/07, Section 3 (1) 6)
4. The owner of the drinking water system must provide proof satisfactory to the Ministry of the Environment, Conservation and Parks that the financial plans for the system satisfy the requirements under the Safe Drinking Water Act. (S.D.W.A. Section 32 (5) 2 ii)

**8 Recommendations**

This report presents the water financial plan for the St. Thomas Area Secondary Water Supply System in accordance with the mandatory reporting formats for water systems as detailed in O.Reg. 453/07. It is important to note that while mandatory, the financial plan is provided for the Joint Board of Management's interest and approval however, for decision making purposes, it may be more informative to rely on the information contained within the 2020 Rate Study. Nevertheless, the Joint Board of Management is required to pass certain resolutions with regard to this plan and regulations and it is recommended that:

1. The St. Thomas Area Secondary Water Supply System Water Financial Plan prepared by City of St. Thomas Staff, for the period of 2021-2031 be approved.
2. Notice of availability of the Financial Plan be advertised.
3. The Financial Plan, the Board Resolution approving the Financial Plan, and the 2020 Water Rate Study underpinning the Financial Plan be submitted to the Ministry of Municipal Affairs and Housing. (O.Reg. 453/07, Section 3 (1) 6)
4. The Financial Plan, the Board Resolution approving the Financial Plan, and the 2020 Water Rate Study underpinning the Financial Plan be submitted to the Ministry of the Environment, Conservation and Parks, satisfying the requirements under the Safe Drinking Water Act. (S.D.W.A. Section 32 (5) 2 ii)

Appendix A: Rate Study – Capital Budget Forecast (2021 – 2031) INFLATED \$

|   | Total            | 2021           | 2022           | 2023          | 2024          | 2025             | 2026           | 2027        | 2028        | 2029             | 2030        | 2031        |
|---|------------------|----------------|----------------|---------------|---------------|------------------|----------------|-------------|-------------|------------------|-------------|-------------|
| Pump 1 Discharge Control Valve PRV Surge                                | 3,333            |                | 3,333          |               |               |                  |                |             |             |                  |             |             |
| Pump 2 Discharge Control Valve PRV Surge                                | 3,333            |                | 3,333          |               |               |                  |                |             |             |                  |             |             |
| Pump 3 Discharge Control Valve PRV Surge                                | 3,333            |                | 3,333          |               |               |                  |                |             |             |                  |             |             |
| Pump 1 Suction Valve  | 10,100           |                | 10,100         |               |               |                  |                |             |             |                  |             |             |
| Pump 2 Suction Valve  | 10,100           |                | 10,100         |               |               |                  |                |             |             |                  |             |             |
| Pump 3 Suction Valve  | 10,100           |                | 10,100         |               |               |                  |                |             |             |                  |             |             |
| <b>Total Pump 1</b>   | <b>13,433</b>    | <b>0</b>       | <b>13,433</b>  | <b>0</b>      | <b>0</b>      | <b>0</b>         | <b>0</b>       | <b>0</b>    | <b>0</b>    | <b>0</b>         | <b>0</b>    | <b>0</b>    |
| <b>Total Pump 2</b>   | <b>13,433</b>    | <b>0</b>       | <b>13,433</b>  | <b>0</b>      | <b>0</b>      | <b>0</b>         | <b>0</b>       | <b>0</b>    | <b>0</b>    | <b>0</b>         | <b>0</b>    | <b>0</b>    |
| <b>Total Pump 3</b>   | <b>13,433</b>    | <b>0</b>       | <b>13,433</b>  | <b>0</b>      | <b>0</b>      | <b>0</b>         | <b>0</b>       | <b>0</b>    | <b>0</b>    | <b>0</b>         | <b>0</b>    | <b>0</b>    |
| Generator Multilin Controller Replacement                               | 0                |                |                |               |               |                  |                |             |             |                  |             |             |
| Generator Engine Major Reconditioning                                   | 25,000           |                |                |               | 25,000        |                  |                |             |             |                  |             |             |
| Diesel Demo and make good   | 15,000           |                |                | 15,000        |               |                  |                |             |             |                  |             |             |
| Generator Load Testing Connection Panel                                 | 0                |                |                |               |               |                  |                |             |             |                  |             |             |
| <b>Total Generator</b>  | <b>40,000</b>    | <b>0</b>       | <b>0</b>       | <b>15,000</b> | <b>25,000</b> | <b>0</b>         | <b>0</b>       | <b>0</b>    | <b>0</b>    | <b>0</b>         | <b>0</b>    | <b>0</b>    |
| Chlorinator System Upgrade - Eng.                                       | 20,000           |                |                |               |               | 20,000           |                |             |             |                  |             |             |
| Chlorinator System Upgrade  | 101,000          |                |                |               |               |                  | 101,000        |             |             |                  |             |             |
| <b>Total Chlorination</b>   | <b>121,000</b>   | <b>0</b>       | <b>0</b>       | <b>0</b>      | <b>0</b>      | <b>20,000</b>    | <b>101,000</b> | <b>0</b>    | <b>0</b>    | <b>0</b>         | <b>0</b>    | <b>0</b>    |
| PLC Control Panel Wiring  | 0                |                |                |               |               |                  |                |             |             |                  |             |             |
| Replacement of Underground Primary Cables from Ple to Metal Clad Switch | 0                |                |                |               |               |                  |                |             |             |                  |             |             |
| Steel Piping Replacement  | 50,000           |                |                |               | 50,000        |                  |                |             |             |                  |             |             |
| <b>Total Misc. Process/HVAC/Electrical</b>                              | <b>50,000</b>    | <b>0</b>       | <b>0</b>       | <b>0</b>      | <b>50,000</b> | <b>0</b>         | <b>0</b>       | <b>0</b>    | <b>0</b>    | <b>0</b>         | <b>0</b>    | <b>0</b>    |
| WCC Secondary Chamber   | 65,307           |                |                |               |               | 65,307           |                |             |             |                  |             |             |
| WCF001 Chamber #46  | 65,307           |                |                |               |               | 65,307           |                |             |             |                  |             |             |
| WCF002 Chamber #47  | 65,307           |                |                |               |               | 65,307           |                |             |             |                  |             |             |
| WCF003 Chamber #48  | 65,307           |                |                |               |               | 65,307           |                |             |             |                  |             |             |
| WCF004 Chamber #49  | 65,307           |                |                |               |               | 65,307           |                |             |             |                  |             |             |
| WCF005 Chamber #50  | 70,690           |                |                |               |               |                  |                |             |             | 70,690           |             |             |
| WCF006 Chamber #51  | 70,690           |                |                |               |               |                  |                |             |             | 70,690           |             |             |
| WCF012 Chamber #2A  | 60,334           | 60,334         |                |               |               |                  |                |             |             |                  |             |             |
| WCF013 Chamber #3   | 60,334           | 60,334         |                |               |               |                  |                |             |             |                  |             |             |
| <b>Total Chambers</b>   | <b>588,583</b>   | <b>120,667</b> | <b>0</b>       | <b>0</b>      | <b>0</b>      | <b>326,535</b>   | <b>0</b>       | <b>0</b>    | <b>0</b>    | <b>141,381</b>   | <b>0</b>    | <b>0</b>    |
| Valves  | 77,000           | 77,000         |                |               |               |                  |                |             |             |                  |             |             |
| Ford Tower Decommissioning  | 500,000          |                | 500,000        |               |               |                  |                |             |             |                  |             |             |
| <b>Total Ford Tower</b>   | <b>577,000</b>   | <b>77,000</b>  | <b>500,000</b> | <b>0</b>      | <b>0</b>      | <b>0</b>         | <b>0</b>       | <b>0</b>    | <b>0</b>    | <b>0</b>         | <b>0</b>    | <b>0</b>    |
| East Chamber  | 139,943          |                |                |               |               | 139,943          |                |             |             |                  |             |             |
| West Chamber  | 151,479          |                |                |               |               |                  |                |             |             | 151,479          |             |             |
| <b>Total E &amp; W Chambers</b>   | <b>291,422</b>   | <b>0</b>       | <b>0</b>       | <b>0</b>      | <b>0</b>      | <b>139,943</b>   | <b>0</b>       | <b>0</b>    | <b>0</b>    | <b>151,479</b>   | <b>0</b>    | <b>0</b>    |
| Transmission Main (500 mm)  | 0                |                |                |               |               |                  |                |             |             |                  |             |             |
| Transmission Main (750 mm)  | 7,191,103        |                |                |               |               | 3,730,214        |                |             |             | 3,460,889        |             |             |
| <b>Total Transmission Main</b>  | <b>7,191,103</b> | <b>0</b>       | <b>0</b>       | <b>0</b>      | <b>0</b>      | <b>3,730,214</b> | <b>0</b>       | <b>0</b>    | <b>0</b>    | <b>3,460,889</b> | <b>0</b>    | <b>0</b>    |
| Review and Test SCADA alarms  | 0                |                |                |               |               |                  |                |             |             |                  |             |             |
| Review and Update O&M manual  | 0                |                |                |               |               |                  |                |             |             |                  |             |             |
| Drawing Revisions   | 0                |                |                |               |               |                  |                |             |             |                  |             |             |
| Watermain Replacement Study   | 150,000          |                | 150,000        |               |               |                  |                |             |             |                  |             |             |
| <b>Total Planning and Studies</b>                                       | <b>150,000</b>   | <b>-</b>       | <b>150,000</b> | <b>0</b>      | <b>0</b>      | <b>0</b>         | <b>0</b>       | <b>0</b>    | <b>0</b>    | <b>0</b>         | <b>0</b>    | <b>0</b>    |
| <b>Total Capital Expenditures</b>                                       |                  | <b>197,667</b> | <b>690,299</b> | <b>15,000</b> | <b>75,000</b> | <b>4,216,692</b> | <b>101,000</b> | <b>-</b>    | <b>-</b>    | <b>3,753,748</b> | <b>-</b>    | <b>-</b>    |
| <b>Capital Plan Funding</b>   |                  | <b>2021</b>    | <b>2022</b>    | <b>2023</b>   | <b>2024</b>   | <b>2025</b>      | <b>2026</b>    | <b>2027</b> | <b>2028</b> | <b>2029</b>      | <b>2030</b> | <b>2031</b> |
| Provincial/Federal Grants   |                  | -              | -              | -             | -             | -                | -              | -           | -           | -                | -           | -           |
| Debentures  |                  | -              | -              | -             | -             | -                | -              | -           | -           | -                | -           | -           |
| Secondary Water Reserve   |                  | 197,667        | 690,299        | 15,000        | 75,000        | 4,216,692        | 101,000        | -           | -           | 3,753,748        | -           | -           |
| <b>Total Capital Plan Funds</b>   |                  | <b>197,667</b> | <b>690,299</b> | <b>15,000</b> | <b>75,000</b> | <b>4,216,692</b> | <b>101,000</b> | <b>-</b>    | <b>-</b>    | <b>3,753,748</b> | <b>-</b>    | <b>-</b>    |

Appendix B: Rate Study – Water Reserve Fund Continuity (2021 – 2031) INFLATED \$

|                                     | 2021        | 2022        | 2023        | 2024        | 2025        | 2026        | 2027        | 2028        | 2029        | 2030        | 2031        |
|-------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Reserve Balance (beginning of year) | 2,793,454   | 3,232,509   | 3,241,979   | 4,009,026   | 4,771,466   | 1,354,215   | 2,097,342   | 2,987,605   | 3,925,806   | 1,054,043   | 1,953,287   |
| Transfer to Capital                 | 197,667     | 690,299     | 15,000      | 75,000      | 4,216,692   | 101,000     | -           | -           | 3,753,748   | -           | -           |
| Transfer from Operating             | 584,807     | 648,925     | 717,507     | 758,760     | 788,345     | 819,062     | 848,317     | 878,449     | 878,544     | 878,164     | 877,283     |
| Interest                            | 51,916      | 50,844      | 64,540      | 78,681      | 11,095      | 25,064      | 41,947      | 59,752      | 3,441       | 21,081      | 39,066      |
| Reserve Balance (End of Year)       | \$3,232,509 | \$3,241,979 | \$4,009,026 | \$4,771,466 | \$1,354,215 | \$2,097,342 | \$2,987,605 | \$3,925,806 | \$1,054,043 | \$1,953,287 | \$2,869,637 |

Appendix C: Rate Study – Operating Budget Forecast (2021 – 2031) INFLATED \$

| DESCRIPTION                             | 2021<br>FORECAST       | 2022<br>FORECAST       | 2023<br>FORECAST       | 2024<br>FORECAST       | 2025<br>FORECAST       | 2026<br>FORECAST       | 2027<br>FORECAST       | 2028<br>FORECAST       | 2029<br>FORECAST       | 2030<br>FORECAST       | 2031<br>FORECAST       |
|---|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| <b><u>Operating</u></b>                 |                        |                        |                        |                        |                        |                        |                        |                        |                        |                        |                        |
| E/S Wage Allocation                     | 47,195                 | 48,139                 | 49,102                 | 50,084                 | 51,086                 | 52,108                 | 53,150                 | 54,213                 | 55,297                 | 56,403                 | 57,531                 |
| Job Costing Labour                      | 48,960                 | 49,939                 | 50,938                 | 51,957                 | 52,996                 | 54,056                 | 55,137                 | 56,240                 | 57,364                 | 58,512                 | 59,682                 |
| CMMS Support Fee                        | 3,009                  | 3,069                  | 3,131                  | 3,193                  | 3,257                  | 3,322                  | 3,389                  | 3,456                  | 3,526                  | 3,596                  | 3,668                  |
| Secondary Water System - Contractor     | 103,020                | 105,080                | 107,182                | 109,326                | 111,512                | 113,742                | 116,017                | 118,338                | 120,704                | 123,118                | 125,581                |
| Misc. Contracted Services               | 35,700                 | 36,414                 | 37,142                 | 37,885                 | 38,643                 | 39,416                 | 40,204                 | 41,008                 | 41,828                 | 42,665                 | 43,518                 |
| Job Costing Equipment                   | 8,670                  | 8,843                  | 9,020                  | 9,201                  | 9,385                  | 9,572                  | 9,764                  | 9,959                  | 10,158                 | 10,361                 | 10,569                 |
| Job Costing Subcontractors              | 20,400                 | 20,808                 | 21,224                 | 21,649                 | 22,082                 | 22,523                 | 22,974                 | 23,433                 | 23,902                 | 24,380                 | 24,867                 |
| City Own Property Taxes                 | 4,998                  | 5,098                  | 5,200                  | 5,304                  | 5,410                  | 5,518                  | 5,629                  | 5,741                  | 5,856                  | 5,973                  | 6,093                  |
| Insurance Expense                       | 17,768                 | 18,124                 | 18,486                 | 18,856                 | 19,233                 | 19,618                 | 20,010                 | 20,410                 | 20,819                 | 21,235                 | 21,660                 |
| Communications                          | 20,400                 | 20,808                 | 21,224                 | 21,649                 | 22,082                 | 22,523                 | 22,974                 | 23,433                 | 23,902                 | 24,380                 | 24,867                 |
| SCADA Maintenance                       | 10,302                 | 10,508                 | 10,718                 | 10,933                 | 11,151                 | 11,374                 | 11,602                 | 11,834                 | 12,070                 | 12,312                 | 12,558                 |
| Electricity (Hydro)                     | 141,750                | 148,838                | 156,279                | 164,093                | 172,298                | 180,913                | 189,959                | 199,456                | 209,429                | 219,901                | 230,896                |
| Natural Gas - Heating                   | 5,100                  | 5,202                  | 5,306                  | 5,412                  | 5,520                  | 5,631                  | 5,743                  | 5,858                  | 5,975                  | 6,095                  | 6,217                  |
| Chemicals                               | 5,100                  | 5,202                  | 5,306                  | 5,412                  | 5,520                  | 5,631                  | 5,743                  | 5,858                  | 5,975                  | 6,095                  | 6,217                  |
| Job Costing Materials                   | 1,030                  | 1,051                  | 1,072                  | 1,093                  | 1,115                  | 1,137                  | 1,160                  | 1,183                  | 1,207                  | 1,231                  | 1,256                  |
| <b>SubTotal Operating</b>               | <b>\$473,403</b>       | <b>\$487,124</b>       | <b>\$501,331</b>       | <b>\$516,046</b>       | <b>\$531,290</b>       | <b>\$547,085</b>       | <b>\$563,454</b>       | <b>\$580,422</b>       | <b>\$598,014</b>       | <b>\$616,257</b>       | <b>\$635,179</b>       |
| <b><u>Purchase of Water</u></b>         |                        |                        |                        |                        |                        |                        |                        |                        |                        |                        |                        |
| Primary Supply Rate Forecast            | 0.8965                 | 0.9234                 | 0.9511                 | 0.9796                 | 1.0090                 | 1.0393                 | 1.0705                 | 1.1026                 | 1.1357                 | 1.1697                 | 1.2048                 |
| Forecasted Water Demand (m3)            | 1,998,025              | 2,027,727              | 2,056,888              | 2,086,157              | 2,115,698              | 2,145,838              | 2,172,717              | 2,199,880              | 2,227,332              | 2,255,078              | 2,283,122              |
| <b>SubTotal Purchase of Water</b>       | <b>\$1,791,253</b>     | <b>\$1,872,418</b>     | <b>\$1,956,326</b>     | <b>\$2,043,689</b>     | <b>\$2,134,808</b>     | <b>\$2,230,176</b>     | <b>\$2,325,854</b>     | <b>\$2,425,580</b>     | <b>\$2,529,525</b>     | <b>\$2,637,866</b>     | <b>\$2,750,790</b>     |
| <b><u>EMPS Occupancy</u></b>            |                        |                        |                        |                        |                        |                        |                        |                        |                        |                        |                        |
| EMPS Occupancy Fee                      | 60,000                 | 61,200                 | 62,424                 | 63,672                 | 64,946                 | 66,245                 | 67,570                 | 68,921                 | 70,300                 | 71,706                 | 73,140                 |
| <b>SubTotal EMPS Rental</b>             | <b>\$60,000</b>        | <b>\$61,200</b>        | <b>\$62,424</b>        | <b>\$63,672</b>        | <b>\$64,946</b>        | <b>\$66,245</b>        | <b>\$67,570</b>        | <b>\$68,921</b>        | <b>\$70,300</b>        | <b>\$71,706</b>        | <b>\$73,140</b>        |
| <br><b>TOTAL OPERATING EXPENDITURES</b> | <br><b>\$2,324,656</b> | <br><b>\$2,420,741</b> | <br><b>\$2,520,081</b> | <br><b>\$2,623,408</b> | <br><b>\$2,731,044</b> | <br><b>\$2,843,506</b> | <br><b>\$2,956,878</b> | <br><b>\$3,074,923</b> | <br><b>\$3,197,838</b> | <br><b>\$3,325,828</b> | <br><b>\$3,459,108</b> |
| <br><b><u>Revenues</u></b>              |                        |                        |                        |                        |                        |                        |                        |                        |                        |                        |                        |
| Total Operating Revenue                 | -                      | -                      | -                      | -                      | -                      | -                      | -                      | -                      | -                      | -                      | -                      |
| Water Billing Recovery                  | 2,909,463              | 3,069,666              | 3,237,588              | 3,382,168              | 3,519,389              | 3,662,568              | 3,805,195              | 3,953,372              | 4,076,381              | 4,203,992              | 4,336,392              |
| <b>TOTAL REVENUE</b>                    | <b>2,909,463</b>       | <b>3,069,666</b>       | <b>3,237,588</b>       | <b>3,382,168</b>       | <b>3,519,389</b>       | <b>3,662,568</b>       | <b>3,805,195</b>       | <b>3,953,372</b>       | <b>4,076,381</b>       | <b>4,203,992</b>       | <b>4,336,392</b>       |

Appendix D: Statement of Financial Position (2021-2031)

Statement of Financial Position (2021 – 2031) – UNAUDITED

|   | Notes           | 2021      | 2022      | 2023      | 2024      | 2025        | FORECAST<br>2026 | 2027      | 2028      | 2029        | 2030       | 2031       |
|---|-----------------|-----------|-----------|-----------|-----------|-------------|------------------|-----------|-----------|-------------|------------|------------|
| <b>Financial Assets</b>                           |                 |           |           |           |           |             |                  |           |           |             |            |            |
| Cash  | 1               | 3,009,821 | 3,055,204 | 3,740,727 | 4,497,119 | 1,482,602   | 1,802,228        | 2,670,506 | 3,596,359 | 1,089,720   | 1,602,955  | 2,508,271  |
| Accounts Receivable                               | 1               | 242,455   | 255,806   | 269,799   | 281,847   | 293,282     | 305,214          | 317,100   | 329,448   | 339,698     | 350,333    | 361,366    |
| Total Financial Assets                            |                 | 3,252,276 | 3,311,009 | 4,010,526 | 4,778,966 | 1,775,884   | 2,107,442        | 2,987,605 | 3,925,806 | 1,429,418   | 1,953,288  | 2,869,637  |
| <b>Liabilities</b>                                |                 |           |           |           |           |             |                  |           |           |             |            |            |
| Bank Indebtedness                                 |                 | -         | -         | -         | -         | -           | -                | -         | -         | -           | -          | -          |
| Accounts Payable & Accrued Liabilities            | 1               | 19,767    | 69,030    | 1,500     | 7,500     | 421,669     | 10,100           | -         | -         | 375,375     | -          | -          |
| Debt (Principal Only)                             | 2               | -         | -         | -         | -         | -           | -                | -         | -         | -           | -          | -          |
| Total Liabilities                                 |                 | 19,767    | 69,030    | 1,500     | 7,500     | 421,669     | 10,100           | -         | -         | 375,375     | -          | -          |
| Net Financial Assets/(Debt)                       |                 | 3,232,509 | 3,241,979 | 4,009,026 | 4,771,466 | 1,354,215   | 2,097,342        | 2,987,605 | 3,925,806 | 1,054,043   | 1,953,288  | 2,869,637  |
| <b>Non-Financial Assets</b>                       |                 |           |           |           |           |             |                  |           |           |             |            |            |
| Tangible Capital Assets                           | 4               | 1,081,284 | 1,054,821 | 1,036,509 | 1,076,381 | 5,167,471   | 5,169,148        | 5,067,805 | 4,967,477 | 8,551,898   | 8,400,099  | 8,248,300  |
| Total Non-Financial Assets                        |                 | 1,081,284 | 1,054,821 | 1,036,509 | 1,076,381 | 5,167,471   | 5,169,148        | 5,067,805 | 4,967,477 | 8,551,898   | 8,400,099  | 8,248,300  |
| Accumulated Surplus/(Deficit)                     | 5               | 4,313,794 | 4,296,801 | 5,045,535 | 5,847,847 | 6,521,686   | 7,266,490        | 8,055,411 | 8,893,283 | 9,605,941   | 10,353,387 | 11,117,937 |
| <b>Financial Indicators</b>                       |                 |           |           |           |           |             |                  |           |           |             |            |            |
|   | Total<br>Change | 2021      | 2022      | 2023      | 2024      | 2025        | 2026             | 2027      | 2028      | 2029        | 2030       | 2031       |
| 1) Increase/(Decrease) in Net Financial Assets    | 76,183          | 439,055   | 9,470     | 767,046   | 762,441   | (3,417,251) | 743,127          | 890,264   | 938,201   | (2,871,763) | 899,245    | 916,349    |
| 2) Increase/(Decrease) in Tangible Capital Assets | 7,335,398       | 168,382   | (26,463)  | (18,312)  | 39,871    | 4,091,090   | 1,677            | (101,343) | (100,329) | 3,584,421   | (151,799)  | (151,799)  |
| 3) Increase/(Decrease) In Accumulated Surplus     | 7,411,581       | 607,437   | (16,993)  | 748,734   | 802,312   | 673,839     | 744,804          | 788,921   | 837,872   | 712,658     | 747,446    | 764,550    |

Appendix E: Statement of Operations (2021-2031)

| Statement of Operations (2021 - 2031) – UNAUDITED  |                     |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |                   |
|--|---------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|
|  | Notes               | 2021             | 2022             | 2023             | 2024             | 2025             | FORECAST<br>2026 | 2027             | 2028             | 2029             | 2030              | 2031              |
| <b>Water Revenue</b>                               |                     |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |                   |
| Rate Based Revenue                                 |                     | 2,909,463        | 3,069,666        | 3,237,588        | 3,382,168        | 3,519,389        | 3,662,568        | 3,805,195        | 3,953,372        | 4,076,381        | 4,203,992         | 4,336,392         |
| Other Revenue (interest on Reserves)               | 6                   | 51,916           | 50,844           | 64,540           | 78,681           | 11,095           | 25,064           | 41,947           | 59,752           | 3,441            | 21,081            | 39,066            |
| Total Revenues                                     |                     | 2,961,378        | 3,120,510        | 3,302,128        | 3,460,848        | 3,530,484        | 3,687,632        | 3,847,142        | 4,013,124        | 4,079,823        | 4,225,073         | 4,375,458         |
| <b>Water Expenses</b>                              |                     |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |                   |
| Operating Expenses                                 | App. C.             | 2,324,656        | 3,070,741        | 2,520,081        | 2,623,408        | 2,731,044        | 2,843,506        | 2,956,878        | 3,074,923        | 3,197,838        | 3,325,828         | 3,459,108         |
| Amortization                                       | 4                   | 29,285           | 31,501           | 33,312           | 35,129           | 67,368           | 99,323           | 101,343          | 100,329          | 126,157          | 151,799           | 151,799           |
| Loss on disposal of TCAs                           |                     | -                | 35,261           | -                | -                | 58,234           | -                | -                | -                | 43,170           | -                 | -                 |
| Total Expenses                                     |                     | 2,353,941        | 3,137,503        | 2,553,393        | 2,658,536        | 2,856,646        | 2,942,828        | 3,058,221        | 3,175,252        | 3,367,164        | 3,477,627         | 3,610,907         |
| <b>Annual Surplus/(Deficit)</b>                    |                     | <b>607,437</b>   | <b>(16,993)</b>  | <b>748,734</b>   | <b>802,312</b>   | <b>673,839</b>   | <b>744,804</b>   | <b>788,921</b>   | <b>837,872</b>   | <b>712,658</b>   | <b>747,446</b>    | <b>764,550</b>    |
| Accumulated Surplus/(Deficit), beginning of year   | 5                   | 3,706,356        | 4,313,794        | 4,296,801        | 5,045,535        | 5,847,847        | 6,521,686        | 7,266,490        | 8,055,411        | 8,893,283        | 9,605,941         | 10,353,387        |
| Accumulated Surplus/(Deficit), end of year         |                     | 4,313,794        | 4,296,801        | 5,045,535        | 5,847,847        | 6,521,686        | 7,266,490        | 8,055,411        | 8,893,283        | 9,605,941        | 10,353,387        | 11,117,937        |
| <b>Accumulated Surplus/Deficit) Reconciliation</b> |                     |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |                   |
| <b>Reserve Balances</b>                            |                     |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |                   |
| Reserves: Capital/Other                            |                     | 3,232,509        | 3,241,979        | 4,009,026        | 4,771,466        | 1,354,215        | 2,097,342        | 2,987,605        | 3,925,806        | 1,054,043        | 1,953,287         | 2,869,637         |
| <b>Total Reserves Balance</b>                      |                     |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |                   |
| Less: Debt Obligations and Deferred Revenue        |                     | -                | -                | -                | -                | -                | -                | -                | -                | -                | -                 | -                 |
| Add: TCA's   | 4                   | 1,081,284        | 1,054,821        | 1,036,509        | 1,076,381        | 5,167,471        | 5,169,148        | 5,067,805        | 4,967,477        | 8,551,898        | 8,400,099         | 8,248,300         |
| <b>Total Ending Balance</b>                        |                     | <b>4,313,794</b> | <b>4,296,801</b> | <b>5,045,535</b> | <b>5,847,847</b> | <b>6,521,686</b> | <b>7,266,490</b> | <b>8,055,411</b> | <b>8,893,283</b> | <b>9,605,941</b> | <b>10,353,387</b> | <b>11,117,937</b> |
| <b>Financial Indicators</b>                        |                     |                  |                  |                  |                  |                  |                  |                  |                  |                  |                   |                   |
|  | <b>Total Change</b> | <b>2021</b>      | <b>2022</b>      | <b>2023</b>      | <b>2024</b>      | <b>2025</b>      | <b>2026</b>      | <b>2027</b>      | <b>2028</b>      | <b>2029</b>      | <b>2030</b>       | <b>2031</b>       |
| 1) Expense to Revenue Ratio                        | -                   | 79%              | 101%             | 77%              | 77%              | 81%              | 80%              | 79%              | 79%              | 83%              | 82%               | 83%               |
| 2) Increase/(Decrease) to Accumulated Surplus      | 7,411,581           | 607,437          | (16,993)         | 748,734          | 802,312          | 673,839          | 744,804          | 788,921          | 837,872          | 712,658          | 747,446           | 764,550           |

Appendix F: Schedule of Operating Expenses (2021-2031)

| Schedule of Operating Expenses (2021 - 2031) – UNAUDITED |       |           |           |           |           |           |           |           |           |           |           |           |
|--|-------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Operating Expenses                                       | Notes | FORECAST  |           |           |           |           |           |           |           |           |           |           |
|  |       | 2021      | 2022      | 2023      | 2024      | 2025      | 2026      | 2027      | 2028      | 2029      | 2030      | 2031      |
| E/S Wage Allocation                                      |       | 47,195    | 48,139    | 49,102    | 50,084    | 51,086    | 52,108    | 53,150    | 54,213    | 55,297    | 56,403    | 57,531    |
| Job Costing Labour                                       |       | 48,960    | 49,939    | 50,938    | 51,957    | 52,996    | 54,056    | 55,137    | 56,240    | 57,364    | 58,512    | 59,682    |
| CMMS Support Fee   |       | 3,009     | 3,069     | 3,131     | 3,193     | 3,257     | 3,322     | 3,389     | 3,456     | 3,526     | 3,596     | 3,668     |
| Secondary Water System - Contractor                      |       | 103,020   | 105,080   | 107,182   | 109,326   | 111,512   | 113,742   | 116,017   | 118,338   | 120,704   | 123,118   | 125,581   |
| Misc. Contracted Services                                |       | 35,700    | 36,414    | 37,142    | 37,885    | 38,643    | 39,416    | 40,204    | 41,008    | 41,828    | 42,665    | 43,518    |
| Job Costing Equipment                                    |       | 8,670     | 8,843     | 9,020     | 9,201     | 9,385     | 9,572     | 9,764     | 9,959     | 10,158    | 10,361    | 10,569    |
| Job Costing Subcontractors                               |       | 20,400    | 20,808    | 21,224    | 21,649    | 22,082    | 22,523    | 22,974    | 23,433    | 23,902    | 24,380    | 24,867    |
| City Own Property Taxes                                  |       | 4,998     | 5,098     | 5,200     | 5,304     | 5,410     | 5,518     | 5,629     | 5,741     | 5,856     | 5,973     | 6,093     |
| Insurance Expense  |       | 17,768    | 18,124    | 18,486    | 18,856    | 19,233    | 19,618    | 20,010    | 20,410    | 20,819    | 21,235    | 21,660    |
| Communications   |       | 20,400    | 20,808    | 21,224    | 21,649    | 22,082    | 22,523    | 22,974    | 23,433    | 23,902    | 24,380    | 24,867    |
| SCADA Maintenance  |       | 10,302    | 10,508    | 10,718    | 10,933    | 11,151    | 11,374    | 11,602    | 11,834    | 12,070    | 12,312    | 12,558    |
| Electricity (Hydro)                                      |       | 141,750   | 148,838   | 156,279   | 164,093   | 172,298   | 180,913   | 189,959   | 199,456   | 209,429   | 219,901   | 230,896   |
| Natural Gas - Heating                                    |       | 5,100     | 5,202     | 5,306     | 5,412     | 5,520     | 5,631     | 5,743     | 5,858     | 5,975     | 6,095     | 6,217     |
| Chemicals  |       | 5,100     | 5,202     | 5,306     | 5,412     | 5,520     | 5,631     | 5,743     | 5,858     | 5,975     | 6,095     | 6,217     |
| Job Costing Materials                                    |       | 1,030     | 1,051     | 1,072     | 1,093     | 1,115     | 1,137     | 1,160     | 1,183     | 1,207     | 1,231     | 1,256     |
| Purchase of Water  |       | 1,791,253 | 1,872,418 | 1,956,326 | 2,043,689 | 2,134,808 | 2,230,176 | 2,325,854 | 2,425,580 | 2,529,525 | 2,637,866 | 2,750,790 |
| EMPS Occupancy Fee                                       |       | 60,000    | 61,200    | 62,424    | 63,672    | 64,946    | 66,245    | 67,570    | 68,921    | 70,300    | 71,706    | 73,140    |
| Non-TCA Expenses from Capital Budget                     | 7     | -         | 650,000   | -         | -         | -         | -         | -         | -         | -         | -         | -         |
| TOTAL OPERATING EXPENSES                                 |       | 2,324,656 | 3,070,741 | 2,520,081 | 2,623,408 | 2,731,044 | 2,843,506 | 2,956,878 | 3,074,923 | 3,197,838 | 3,325,828 | 3,459,108 |

Appendix G: Statement of Changes in Net Financial Assets/Debt (2021-2031)

| Statement of Changes in Net Financial Assets/Debt (2021 - 2031) – UNAUDITED         |       |           |           |           |           |             |           |           |           |             |           |           |
|---|-------|-----------|-----------|-----------|-----------|-------------|-----------|-----------|-----------|-------------|-----------|-----------|
|   | Notes | FORECAST  |           |           |           |             |           |           |           |             |           |           |
|   |       | 2021      | 2022      | 2023      | 2024      | 2025        | 2026      | 2027      | 2028      | 2029        | 2030      | 2031      |
| Annual Surplus/(Deficit)  |       | 607,437   | (16,993)  | 748,734   | 802,312   | 673,839     | 744,804   | 788,921   | 837,872   | 712,658     | 747,446   | 764,550   |
| Less: Acquisition of Tangible Capital Assets  | 4     | 197,667   | 40,299    | 15,000    | 75,000    | 4,216,692   | 101,000   | -         | -         | 3,753,748   | -         | -         |
| Add: Amortization of Tangible Capital Assets  | 4     | 29,285    | 31,501    | 33,312    | 35,129    | 67,368      | 99,323    | 101,343   | 100,329   | 126,157     | 151,799   | 151,799   |
| (Gain)/Loss on disposal of Tangible Capital Assets                                  |       | -         | 35,261    | -         | -         | 58,234      | -         | -         | -         | 43,170      | -         | -         |
| Add: Proceeds on Sale of Tangible Capital Assets                                    |       | -         | -         | -         | -         | -           | -         | -         | -         | -           | -         | -         |
| Add: Write-downs of Tangible Capital Assets   |       | -         | -         | -         | -         | -           | -         | -         | -         | -           | -         | -         |
|   |       |           |           |           |           |             |           |           |           |             |           |           |
| Increase/(Decrease) in Net Financial Assets/(Net Debt)                              |       | 439,055   | 9,470     | 767,046   | 762,441   | (3,417,251) | 743,127   | 890,264   | 938,201   | (2,871,763) | 899,245   | 916,349   |
| Net Financial Assets/(Net Debt), beginning of year                                  |       | 2,793,454 | 3,232,509 | 3,241,979 | 4,009,026 | 4,771,466   | 1,354,215 | 2,097,342 | 2,987,605 | 3,925,806   | 1,054,043 | 1,953,288 |
| Net Financial Assets/(Net Debt), end of year  |       | 3,232,509 | 3,241,979 | 4,009,026 | 4,771,466 | 1,354,215   | 2,097,342 | 2,987,605 | 3,925,806 | 1,054,043   | 1,953,288 | 2,869,637 |
|   |       |           |           |           |           |             |           |           |           |             |           |           |
| Financial Indicators  |       | 2021      | 2022      | 2023      | 2024      | 2025        | 2026      | 2027      | 2028      | 2029        | 2030      | 2031      |
| 1) Acquisition of Tangible Capital Assets (Cumulative)                              |       | 197,667   | 237,966   | 252,966   | 327,966   | 4,544,658   | 4,645,658 | 4,645,658 | 4,645,658 | 8,399,406   | 8,399,406 | 8,399,406 |
| 2) Annual Surplus / Deficit before Amortization (Cumulative)                        |       | 636,722   | 651,230   | 1,433,277 | 2,270,717 | 3,011,924   | 3,856,051 | 4,746,314 | 5,684,515 | 6,523,330   | 7,422,575 | 8,338,924 |
| 3) Ratio of Annual Surplus before Amortization to Acquisition of TCA's (Cumulative) |       | 3.22      | 2.74      | 5.67      | 6.92      | 0.66        | 0.83      | 1.02      | 1.22      | 0.78        | 0.88      | 0.99      |

Appendix H: Statement of Cash Flow – Indirect Method (2021-2031)

| Statement of Cash Flow - Indirect Method (2021 - 2031) - UNAUDITED |          |                  |                  |                  |                  |                    |                  |                  |                  |                    |                  |                  |
|--|----------|------------------|------------------|------------------|------------------|--------------------|------------------|------------------|------------------|--------------------|------------------|------------------|
|  |          |                  |                  |                  |                  | FORECAST           |                  |                  |                  |                    |                  |                  |
|  | Notes    | 2021             | 2022             | 2023             | 2024             | 2025               | 2026             | 2027             | 2028             | 2029               | 2030             | 2031             |
| <b><u>Operating Transactions</u></b>                               |          |                  |                  |                  |                  |                    |                  |                  |                  |                    |                  |                  |
| Annual Surplus/(Deficit)   |          | 607,437          | (16,993)         | 748,734          | 802,312          | 673,839            | 744,804          | 788,921          | 837,872          | 712,658            | 747,446          | 764,550          |
| Add: Amortization of TCA's   | 4        | 29,285           | 31,501           | 33,312           | 35,129           | 67,368             | 99,323           | 101,343          | 100,329          | 126,157            | 151,799          | 151,799          |
| (Gain)/Loss on disposal of TCA's                                   |          | -                | 35,261           | -                | -                | 58,234             | -                | -                | -                | 43,170             | -                | -                |
| Change in A/R (increase)/decrease                                  |          | (242,455)        | (13,350)         | (13,994)         | (12,048)         | (11,435)           | (11,932)         | (11,886)         | (12,348)         | (10,251)           | (10,634)         | (11,033)         |
| Change in A/P increase/(decrease)                                  |          | 19,767           | 49,263           | (67,530)         | 6,000            | 414,169            | (411,569)        | (10,100)         | -                | 375,375            | (375,375)        | -                |
| Less: Interest Proceeds  |          | 51,916           | 50,844           | 64,540           | 78,681           | 11,095             | 25,064           | 41,947           | 59,752           | 3,441              | 21,081           | 39,066           |
| <b>Cash Provided by Operating Transactions</b>                     |          | <b>362,118</b>   | <b>34,838</b>    | <b>635,983</b>   | <b>752,712</b>   | <b>1,191,079</b>   | <b>395,561</b>   | <b>826,331</b>   | <b>866,101</b>   | <b>1,243,668</b>   | <b>492,155</b>   | <b>866,250</b>   |
| <b><u>Capital Transactions</u></b>                                 |          |                  |                  |                  |                  |                    |                  |                  |                  |                    |                  |                  |
| Proceeds on sale of tangible capital assets                        |          | -                | -                | -                | -                | -                  | -                | -                | -                | -                  | -                | -                |
| Less: Cash used to acquire tangible capital assets                 | 4        | 197,667          | 40,299           | 15,000           | 75,000           | 4,216,692          | 101,000          | -                | -                | 3,753,748          | -                | -                |
| <b>Cash Applied to capital transactions</b>                        |          | <b>(197,667)</b> | <b>(40,299)</b>  | <b>(15,000)</b>  | <b>(75,000)</b>  | <b>(4,216,692)</b> | <b>(101,000)</b> | <b>-</b>         | <b>-</b>         | <b>(3,753,748)</b> | <b>-</b>         | <b>-</b>         |
| <b><u>Investing Transactions</u></b>                               |          |                  |                  |                  |                  |                    |                  |                  |                  |                    |                  |                  |
| Proceeds from investments  |          | 51,916           | 50,844           | 64,540           | 78,681           | 11,095             | 25,064           | 41,947           | 59,752           | 3,441              | 21,081           | 39,066           |
| Less: Cash used to acquire investments                             |          | -                | -                | -                | -                | -                  | -                | -                | -                | -                  | -                | -                |
| <b>Cash provided by (applied to) investing transactions</b>        |          | <b>51,916</b>    | <b>50,844</b>    | <b>64,540</b>    | <b>78,681</b>    | <b>11,095</b>      | <b>25,064</b>    | <b>41,947</b>    | <b>59,752</b>    | <b>3,441</b>       | <b>21,081</b>    | <b>39,066</b>    |
| <b><u>Financing Transactions</u></b>                               |          |                  |                  |                  |                  |                    |                  |                  |                  |                    |                  |                  |
| Not applicable   | 2        | -                | -                | -                | -                | -                  | -                | -                | -                | -                  | -                | -                |
| <b>Increase in cash and cash equivalents</b>                       |          | <b>216,367</b>   | <b>45,383</b>    | <b>685,523</b>   | <b>756,392</b>   | <b>(3,014,517)</b> | <b>319,626</b>   | <b>868,278</b>   | <b>925,853</b>   | <b>(2,506,639)</b> | <b>513,236</b>   | <b>905,316</b>   |
| Cash and Cash equivalents, beginning of year                       | 1        | 2,793,454        | 3,009,821        | 3,055,204        | 3,740,727        | 4,497,119          | 1,482,602        | 1,802,228        | 2,670,506        | 3,596,359          | 1,089,720        | 1,602,955        |
| <b>Cash and Cash equivalents, end of year</b>                      | <b>1</b> | <b>3,009,821</b> | <b>3,055,204</b> | <b>3,740,727</b> | <b>4,497,119</b> | <b>1,482,602</b>   | <b>1,802,228</b> | <b>2,670,506</b> | <b>3,596,359</b> | <b>1,089,720</b>   | <b>1,602,955</b> | <b>2,508,271</b> |

Appendix I: Balance of Tangible Capital Assets (2021 – 2031)

| Balance of Tangible Capital Assets (2021 - 2031) – UNAUDITED |           |           |           |           |           |           |           |           |           |           |           |
|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Asset Historical Cost  |           |           |           |           |           | FORECAST  |           |           |           |           |           |
|  | 2021      | 2022      | 2023      | 2024      | 2025      | 2026      | 2027      | 2028      | 2029      | 2030      | 2031      |
| Opening Tangible Capital Asset Balance                       | 1,775,092 | 1,961,915 | 1,925,593 | 1,940,593 | 2,015,593 | 6,041,601 | 6,142,601 | 6,142,601 | 6,142,601 | 9,734,087 | 9,734,087 |
| Acquisitions   | 197,667   | 40,299    | 15,000    | 75,000    | 4,216,692 | 101,000   | 0         | 0         | 3,753,748 | 0         | 0         |
| Disposals  | 10,844    | 76,621    | 0         | 0         | 190,684   | 0         | 0         | 0         | 162,262   | 0         | 0         |
| Closing Tangible Capital Asset Balance                       | 1,961,915 | 1,925,593 | 1,940,593 | 2,015,593 | 6,041,601 | 6,142,601 | 6,142,601 | 6,142,601 | 9,734,087 | 9,734,087 | 9,734,087 |
| Opening Accumulated Amortization                             | 862,190   | 880,631   | 870,772   | 904,084   | 939,212   | 874,130   | 973,453   | 1,074,795 | 1,175,124 | 1,182,189 | 1,333,988 |
| Amortization Expense   | 29,285    | 31,501    | 33,312    | 35,129    | 67,368    | 99,323    | 101,343   | 100,329   | 126,157   | 151,799   | 151,799   |
| Loss on disposal of Tangible Capital Assets                  | 0         | 35,261    | 0         | 0         | 58,234    | 0         | 0         | 0         | 43,170    | 0         | 0         |
| Amortization on Disposal                                     | 10,844    | 76,621    | 0         | 0         | 190,684   | 0         | 0         | 0         | 162,262   | 0         | 0         |
| Ending Accumulated Amortization                              | 880,631   | 870,772   | 904,084   | 939,212   | 874,130   | 973,453   | 1,074,795 | 1,175,124 | 1,182,189 | 1,333,988 | 1,485,787 |
| Net Book Value   | 1,081,284 | 1,054,821 | 1,036,509 | 1,076,381 | 5,167,471 | 5,169,148 | 5,067,805 | 4,967,477 | 8,551,898 | 8,400,099 | 8,248,300 |

**Directed to:** Chairman Jeff Kohler and Members of the Board of Management of the St. Thomas Area Secondary Water Supply System

**Date Authored:**  
August 26, 2020  
**Meeting Date:**  
September 10, 2020

**Department:** Environmental Services

**Prepared By:** Nathan Bokma, P. Eng.  
Manager of Development and Compliance

**Attachment**  
Minutes of Management Review for St. Thomas Area Water Supply System

**Subject:** STASWSS Drinking Water Quality Management System – Management Review Meeting 2020

**Recommendation:**

THAT: Report No. SWB 04-20, relating to St. Thomas Area Secondary Water Supply System Drinking Water Quality Management System (DWQMS) – Management Review Meeting 2020, be received for information.

**Background:**

As the Operating Authority for the St. Thomas Water Distribution System (STWDS) and the St. Thomas Area Secondary Water Supply System (STASWSS), the Environmental Services Department is continually striving to improve its Drinking Water Quality Management System (DWQMS). This improvement is accomplished through internal audits and the implementation of the decisions and actions recommended in the management review.

The management review occurs once every calendar year period by Top Management of the DWQMS. The purpose of the management review is to stay informed on the DWQMS and ensure it is:

- Suitable to Operations staff
- Adequately managing quality issues
- Performing quality management effectively
- Adequate resources are provided.

As part of the management review, specific topics were discussed pertaining to the DWQMS of the secondary system, which can be seen in the attached meeting minutes. Discussion and decisions made as part of the management review was recorded and compiled in the meeting minutes, which were recorded by the Manager of Development and Compliance.

**Analysis:**

The management review meeting was held on June 15, 2020, which was attended by Justin Lawrence and Nathan Bokma.

One of the topics of the management review was the internal audit, which is completed every calendar year by the Compliance Coordinator. Results of the internal audit were discussed as well as the process to address any minor non-conformances or opportunities for improvement (OFI’s). The Manager of Development & Compliance will follow up on the results of the internal audit as per the timelines established in the DWQMS.

The COVID-19 pandemic has been an unexpected challenge for staff and the DWQMS to deal with over the past few months. Staff have adjusted work plans and procedures to account to the challenges of COVID-19, and staff continue to deliver high quality drinking water throughout the pandemic.

In summary, the management review was completed with no major issues to discuss, and the DWQMS policy and procedures in place contribute to the excellent operation of the STASWSS.

Respectfully,



Nathan Bokma, P. Eng.  
Manager of Development and Compliance

**Reviewed By:**



Env. Services



# DWQMS Management Review Meeting (STWDS & STASWSS)

Meeting Minutes  
City of St. Thomas

June 15, 2020  
2:30 PM  
City Hall

Present: Justin Lawrence – City Engineer, City of St. Thomas (CITY)  
Nathan Bokma – Manager of Development & Compliance (CITY)

## Previous Minutes

### **Review 2019 minutes and approve 2020 Agenda**

The 2019 agenda and the Minutes from the May 2019 Management Review Meeting were reviewed and approved by those present. No additional items were presented by the participants.

## Agenda Items

### **Incidents of regulatory non-compliance**

For the St. Thomas Water Distribution System (STWDS), MECP inspection was held on October 1, 2019, and the report was received on October 31, 2019. The STWDS received a score of 92.93%, noting one non-conformance matter.

For the St. Thomas Area Secondary Water Distribution System (STASWSS), MECP inspection was held on October 1, 2019, and the report was received on November 5, 2019. The STASWSS received a score of 100%.

The non-conformance was added to the City's tracking list for OFI's and NCR's and the matter discussed in follow-up correspondence with the QC, QMS Rep, and Compliance Coordinator. Proper measures were implemented to rectify the matter, and it was resolved.

### **Incidents of adverse drinking-water tests**

There were 2 adverse drinking water tests in the greater St. Thomas Distribution System, and 1 adverse drinking water test in the Secondary system at EMPS.

### **Deviations from critical control point limits and response actions**

There were no deviations from the critical control points (CCP) in 2019. Therefore, no response actions were required.

### **Effectiveness of the risk assessment process**

Participants discussed the risk assessment process, which the City refers to as the Hazard Analysis Procedure. The review of the hazard analysis spreadsheet was recently completed by City staff. The review was comprehensive and reviewed all hazards and assessed refreshed scores based on a present day risk assessment.

**Internal and third-party audit results**

An external surveillance audit by SAI Global was carried out on June 21, 2019, and there were no non-conformances or OFI's.

Internal Audit for 2019 was carried out on May 5, 2020. From this audit, there were 7 non-conformances and 4 OFI's. The non-conformances and OFI's were discussed in a follow-up correspondence, and corresponding corrective and preventative actions were taken for each item as applicable. The non-conformances that came from the internal audit were:

- **NC#1 Document and Records Control:** Several records requested in advance of the audit date were not provided over the course of the audit. Records developed to demonstrate DWQMS conformance and/or regulatory compliance need to be stored in a manner that allows for ready retrievability.
- **NC#2 Document and Records Control:** References to Emergency Response Procedures throughout the DWQMS are obsolete as the ERP has undergone a renumbering exercise, resulting in these procedures not being readily identifiable.
- **NC#3 Document and Records Control:** Obsolete documentation (CDF-ADMIN-800, circa 2018) was used to record essential suppliers for 2020 DWQMS sign-offs. Additionally, several of these sign-offs, as well as New Construction Sign-offs were not completed in full, lacking QC acknowledgement.
- **NC#4 Communications:** No record could be produced to demonstrate that DWQMS accreditation was communicated to public through bill inserts, as listed in the procedure.
- **NC#5 Infrastructure Maintenance, Rehabilitation and Renewal:** The OA is in the process of updating their CMMS system. DW-ADMIN-900 requires updating to reflect the new CMMS software and the processes surrounding its use.
- **NC#6 Infrastructure Maintenance, Rehabilitation and Renewal:** No records could be produced to demonstrate that activities listed in DW-ADMIN-900 to monitor the effectiveness of the listed programs have been undertaken.
- **NC#7 Emergency Management:** No records of Emergency Response Testing within the last 12 months could be produced at the time of the audit.

**Results of emergency response testing**

No emergency response testing was done in 2019, as noted in the NC#7 above.

**Operational performance**

City rep was satisfied with the overall operational performance.

**Raw water supply and drinking water quality trends**

Raw water is supplied through the Elgin Area Primary Water Supply System. No issues with the water supply.

**Follow-up action items from previous management reviews**

Previous action Item: *City to investigate the performance of the Wellington Road Chamber.*

City staff investigated the Wellington Road Chamber and made modifications to the valving and piping to allow for 2 way flows from either side of the chamber. This work was completed in 2019.

**The status of management action items identified between reviews**

Discussions between City and Southwold for water supply from the STASWSS via Southwold's watermain came up between management review meetings. It was resolved by each council supporting further looping of the watermain from Southwold to St. Thomas to Central Elgin.

**Action Item: Memo of Understanding for Water Billing and Amendment of Water Agreement**

CE took over water billing for CE residents within the St. Thomas suburban water system in 2019. The water agreement between St. Thomas and CE does not reflect these changes. Staff from both municipalities need to work on a Memorandum of Understanding that can amend the existing agreement that reflects these changes. *(Post meeting note: Action item was brought up at CE MR meeting and added to City MR meeting minutes as an omission.)*

Throughout the year, there are many discussions between the City and Secondary System members with regards to the water distribution systems and their performance. Although there might not be any specific action items noted here, many discussions take place to help improve the system.

**Changes that could affect the DWQMS, QMS Elements, or legislative changes**

City has implemented DWQMS 2.0 with all of the systems that the City manages.

**Consumer feedback (including any concerns, complaints, or expectations from customers)**

None were mentioned. Over the 2019 calendar year, the City has responded to numerous service requests with regards to water quality and pressure issues. A summary of these service requests can be seen below:

| Category       | City | Southwold | Central Elgin |
|----------------|------|-----------|---------------|
| Water Quality  | 21   | 0         | 0             |
| Water Pressure | 23   | 0         | 1             |

**The resources needed to maintain the Quality Management System**

There are adequate resources available to City staff to maintain the DWQMS.

**The results of the infrastructure review**

Planned projects are listed below in the review. The results of the review allowed for coordination and awareness of planned works within the vicinity.

**City Capital Projects 2020**

- Watermain lining (No WM lining for 2020)
- Complete Streets projects (Centre Street, White Street, Barnes Street, Jonas Street, Verna Street, Lydia Street, Stanley Street)
- Sinclair Ave. WM replacement
- Southdale Line Reconstruction
- STASWSS Water Modelling and Ford Tower Removal

**Effectiveness of infrastructure maintenance, rehabilitation and renewal program**

Annual review with QC (Manager of Water and Sewer) to discuss the programs in place. See table below.

|                             | City-wide Total | Maintained in 2019 | Annual Goal |          |
|-----------------------------|-----------------|--------------------|-------------|----------|
| Maintenance                 |                 |                    | Achieved %  | Target % |
| Watermain Flushing Program  | 1273            | 1008               | 79%         | 80%      |
| Hydrant Exercising Program  | 1273            | 1008               | 79%         | 80%      |
| Valve Exercising Program    | 3323            | 400                | 12%         | 50%      |
| Backflow Prevention Program | 375             | 375                | 100%        | 100%     |

| <b>Rehabilitation/Renewal Programs</b> |                           |                         |                            |
|--|---------------------------|-------------------------|----------------------------|
| Watermain Lining Program               | 0                         | Held over to 2020       | 0%                         |
| Meter Replacement Program              | 0                         | -                       | Meters up to date          |
| <b>Unscheduled activity</b>            | <b>Work Orders closed</b> | <b>Work Orders Open</b> | <b>Work Orders Overdue</b> |
| WM Breaks                              | 27                        | 0                       | 0                          |
| Water service replacement              | 9                         | 0                       | 0                          |

QC noted that the valve exercising program did not reach its intended annual goal due to damage to equipment that slowed down the program. Since then, the equipment has been repaired and program is operating as normal. QC also noted concern about watermain lining program being deferred for this year but felt that overall the infrastructure program remains effective since it allows for the City to maintain an efficient water distribution system.

#### **Operational plan currency, content and updates**

The City/Secondary Operation plan is up to date and does not require any immediate updates.

#### **Staff suggestions**

No staff suggestions were made at this time about the DWQMS or the water distribution system.  
Improved communication for future maintenance.

### **Other Business**

No other business items were mentioned.

These minutes were completed by Nathan Bokma. Any changes or discrepancies should be forwarded to [nbokma@stthomas.ca](mailto:nbokma@stthomas.ca).

**Next Meeting Date: May 2021 (TBD)**