

TO: Chair and Members of the Union Water Supply System  
Joint Board of Management

FROM: Rodney Bouchard, Union Water Manager

DATE: January 9<sup>th</sup>, 2019

RE: Draft 2019 UWSS Operations and Capital Budget Report



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## FOR INFORMATION

Since this is the first meeting of the newly appointed UWSS Board, this Draft 2019 UWSS Operations and Capital Budget Report is being provided to the UWSS Board for review purposes. At this time, the UWSS General Manager anticipates seeking approval of the draft 2019 UWSS Budget at the next regular meeting of the UWSS Board on February 20<sup>th</sup>, 2019.

### REPORT HIGHLIGHTS

- Potable water demand from UWSS is anticipated to be approximately 3,430,000,000 imperial gallons (15,591,000 m<sup>3</sup>) for 2019. This is roughly based on the average annual demand for the previous 3 years.
- UWSS Revenue for 2019 is estimated at \$10,144,000. This includes estimated wholesale rate revenue of \$9,673,000, investment income of \$450,000 and sundry revenue of \$21,000.
- Operational and Debt Service Expenditures for 2019 are estimated at \$7,979,000. This includes \$5,647,000 for Operational Expenses and \$2,332,000 for Debt Service.
- 2019 Revenue versus Operational and Debt Service Expenditures are anticipated to result in a surplus of approximately \$2,165,000 for 2019 Fiscal Year;
- A Capital Program of \$5,735,000 is proposed for 2019. This includes a large expenditure for SCADA system upgrades (\$1,035,000), which is a previously approved project that is ongoing. The capital budget also includes a revised budget of \$3,100,000 for construction and implementation of a CO<sub>2</sub> gas based raw water pH adjustment system, installation of a chlorine gas scrubber, expansion of the chlorine storage building, and modification of the chlorine gas delivery system.
- The proposed Capital Program for 2019 will result in a budgeted net deficit of **\$3,570,000** for 2019 fiscal year. The deficit will be funded using UWSS Reserves.
- An increase of \$0.05 per 1000 gallons (\$0.0109/m<sup>3</sup>) is proposed for the UWSS Wholesale Rate. The new proposed Rate 1 wholesale Rate would be \$2.82 per 1000 gallons (\$0.611/m<sup>3</sup>) to take effect on April 1, 2019.

## **BACKGROUND:**

Since the Transfer Order of January 2001, the Board is responsible for considering and approving an annual budget for the Union Water Supply System. The format of the budget is generally the same as that previously prepared for 2018.

This proposed budget is being presented to the UWSS board for consideration. The proposed 2019 budget is outlined to provide details in regards to the following:

- Anticipated revenue for 2019 from wholesale of water to the partner municipalities;
- Anticipated operating expenditures for 2019 including estimated costs for operation of the system by the Ontario Clean Water Agency (OCWA), under its contract with UWSS;
- Proposed Capital Works program for 2019 for UWSS;
- Forecasted Operational Expenditures and Capital Works program for 2019-2024.

## **DISCUSSION:**

The Proposed 2019 Budget documents have been prepared based on the discussions with the contracted operator, OCWA, in regards to operational budget, major maintenance needs, and existing operational issues that would require implementation of capital works to resolve. The Budget documents reflect the following:

- The operations and maintenance costs associated with the 5-Year Fixed Fee Operations Agreement between UWSS and OCWA that came into effect on January 1, 2014 and was to end on December 31<sup>st</sup>, 2018. This agreement has been extended to December 31<sup>st</sup>, 2019 to allow further time for UWSS and OCWA to negotiate a new long-term operations agreement;
- The large proposed capital budget for 2019 that includes projects with large expenditures such as the construction and implementation of a carbon dioxide gas (CO<sub>2</sub>) based raw water pH adjustment system, installation of a chlorine gas scrubber for emergency purposes, expansion of the chlorine building, and upgrades to the chlorine gas delivery system. Other large projects include ongoing SCADA system replacement, Low Lift main electrical upgrades, and proposed installation of new high lift pump.

Details regarding the budget components are discussed below.

## **OPERATING EXPENDITURES**

Expenditures for the Union Water Supply System (UWSS) consist of a) *Fixed Expenditures*, which includes the OCWA operations contract, UWSS Administration and debt service; and b) *Programs and Studies* that are proposed for 2019. The total projected expenditures for 2019 is budgeted at approximately at \$7,452,000.

### Fixed Expenditures

Fixed expenditures for the budget process include the OCWA Operations Budget, UWSS Administrative Budget, Electricity and Heating costs, Carbon Dioxide (for proposed raw water pH adjustment system, Operations/Maintenance/Upgrades-General (which includes residuals maintenance, watermain repairs & facility enhancements) and Debt Service. The total estimated fixed expenditures budget for 2019 is \$7,839,441. The fixed expenditures consist of the following components:

OCWA Operations Budget:	\$3,265,000
UWSS Administrative Budget:	\$ 547,000
Electricity and Natural Gas:	\$1,250,000
CO2 Liquefied Gas Procurement:	\$ 175,000
Operational/Maintenance/Upgrades-General:	<u>\$ 270,000</u>
<i>Total Operations, Administrative, Energy:</i>	<i>\$5,507,000</i>
Debt Service:	
Sunlife Debt (MFP Debt):	\$2,332,441
Woodslee Credit Union Loan:	\$0
OSIFA (municipal debentures):	\$0
Leamington Debt Repayment:	<u>\$0</u>
<i>Total Debt Service:</i>	<i>\$2,332,441</i>
<b>Total Fixed Costs:</b>	<b>\$7,839,441</b>

It should be noted that CO2 Liquefied Gas Procurement is a new Fixed Expenditure Category that is being added to the 2019 UWSS Budget. This item relates to the purchase and use of CO2 Liquefied gas for the operation of the CO2 Raw Water pH adjustment

system that is to be constructed and put into operation in 2019. The proposed CO2 Liquefied gas procurement budget amount of \$175,000 is based on the design capacity of the CO2 Raw Water pH Adjustment system, the anticipated raw water flow for 2019 and the CO2 price agreement with the CO2 liquefied gas supplier.

It should also be noted that UWSS Administration Budget includes an increase in 2019 to accommodate the reclassification of the UWSS Administrative Assistant position to UWSS Office Coordinator position.

### Programs and Studies

A number of Programs and Studies are included in the 2019 Budget. These studies are designed to achieve one of the following goals:

- Assess and improve operational processes to improve cost efficiencies potentially resulting in decrease of fixed operations costs such as electricity costs and chemical costs;
- Evaluate water demand and water usage by various sectors including residential, commercial, industrial, and food processing/greenhouse industry;
- Evaluate water quality for potential issues such as toxic algae in raw water, nitrification and/or corrosion related issues in larger distribution systems, etc.

For the 2019 budget year, \$140,000 has been allocated to Programs and Studies. The following studies are proposed or currently in place:

Water Demand/Usage/Quality Initiatives: This work is being conducted with assistance from various partners (OCWA, Canadian Water Network, Universities, and Consultants, local municipalities) to evaluate water demand/usage from residential, commercial, industrial and agri-food sectors, to assess water loss throughout the extended distribution system and to evaluate water quality issues such as nitrification, corrosion, and algal toxins.

A budget of \$60,000 is being proposed in the 2019 UWSS Budget for this work.

New Ruthven WTP Reservoir #3 Study For the 2019 Budget year, a study is being proposed to evaluate the need for increased reservoir capacity at the Ruthven Water Treatment Plant. Existing reservoir capacity at the Ruthven WTP is 5 million gallons, which is thought to be insufficient especially during high water demand days that can reach over 18 million gallons per day.

A budget of \$40,000 is being proposed in the 2019 UWSS Budget for this work.

Backup Power Generation/ Energy Study: A study is being proposed to evaluate the existing backup power generation capacity and equipment at the

UWSS facilities. Available backup power generating capacity varies at each of the UWSS facilities (i.e. low lift, water treatment plant, Cottam Booster, etc.) and is likely not optimal. Further, existing diesel backup power generators are old and may require upgrades. This study would also look at solar energy power options for UWSS.

A budget of \$40,000 is proposed in the 2019 budget to complete this work.

### **Operating Expenditure Summary**

Fixed Expenditures:	\$7,839,441
Programs and Studies:	<u>\$ 140,000</u>
<b>Total Operating Expenditures for 2017:</b>	<b>\$7,979,441</b>

### **REVENUE**

Revenue for the budget process is mainly based on wholesale billings from the sale of potable water to the 4 municipal owners. A smaller component of revenue is based on miscellaneous revenue such as investment income and sundry income. The total estimated revenue for 2019 is \$10,143,600

### **Wholesale Water Revenue Summary**

Wholesale water revenue is based on annual water usage by the 4 owner municipalities and the wholesale water rates.

### **Water Usage**

The projected water "usage" by municipal owners for 2019 is 3,430,000,000 imperial gallons (15,591,000 m<sup>3</sup>) of potable water. This usage estimate is based on the average water demand for the 3 previous years.

Figure 1 depicts the total UWSS water usage trend from 1998-2018.

Figure 1

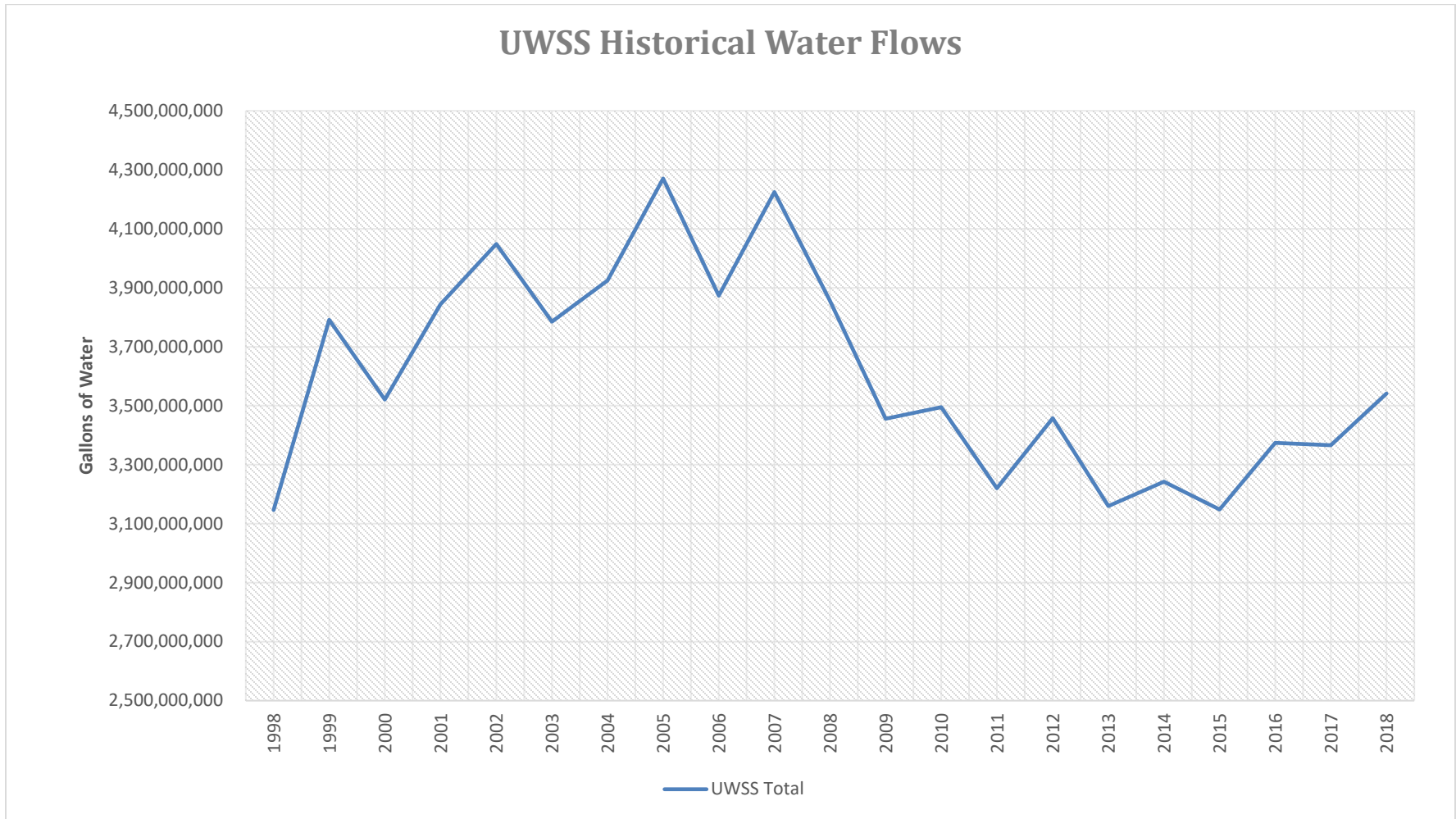
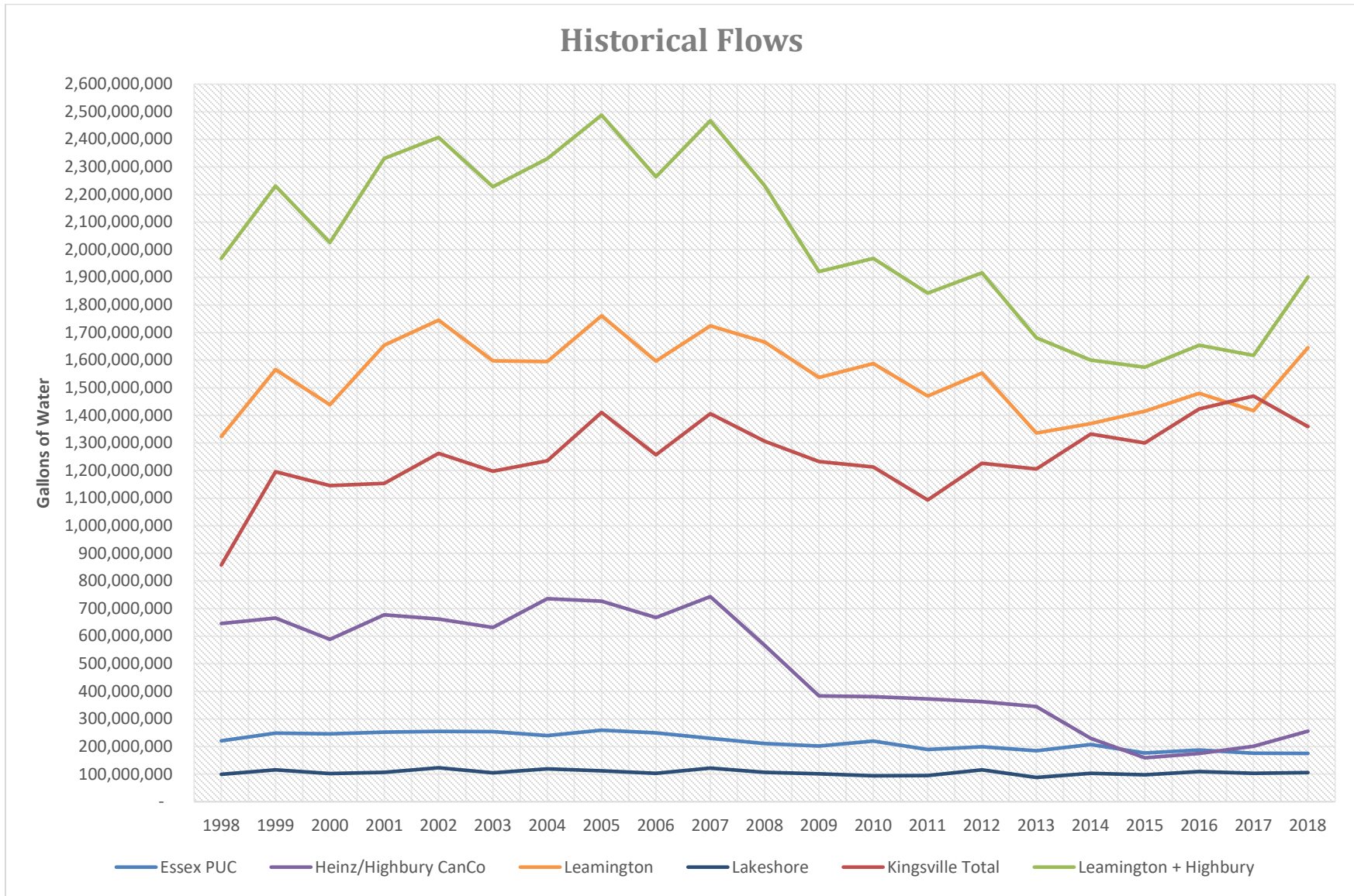


Figure 2 depicts the water usage trend by each municipal partner from 1998-2018.

Figure 2



## Wholesale Water Rates

For the 2019 budgeting process, it is proposed that an increase of \$0.05 per 1000 gallon (\$0.0109/m<sup>3</sup>) be applied to the UWSS wholesale rate. This would result in a 2019 UWSS wholesale rate of \$2.82 per 1000 gallons (\$0.6211/m<sup>3</sup>). It is proposed that the increase for these rates be applied at the start of the 2<sup>nd</sup> quarter 20189, thus on April 1, 2019.

Based on a projected water demand of 3.43 billion Imperial Gallons of potable water in 2019, the anticipated wholesale water rate revenue for 2019 is **\$9,672,600**

## Miscellaneous Revenue

Miscellaneous revenue includes income from investments and sundry income.

Investment (interest) income:	\$ 450,000
Sundry revenue:	<u>\$ 21,000</u>
<b>Total Misc. Revenue:</b>	<b>\$ 471,000</b>

Sundry revenue is revenue received from various sources such as lease of space on water towers for telecommunications equipment. The estimated sundry revenue for 2019 is \$21,000 and is roughly based on 2018 revenue.

## Revenue Summary

Wholesale Rate Revenue:	\$9,672,600
Miscellaneous Revenue:	<u>\$ 471,000</u>
<b>Total Estimated Revenue for 2019:</b>	<b>\$10,143,600</b>

## REVENUE VERSUS OPERATING EXPENDITURES

A comparison of Revenue versus Expenditures for 2019 budget is as follows. It should be noted that the total estimated expenditures also include the proposed budget for operational Programs and Studies of \$140,000.

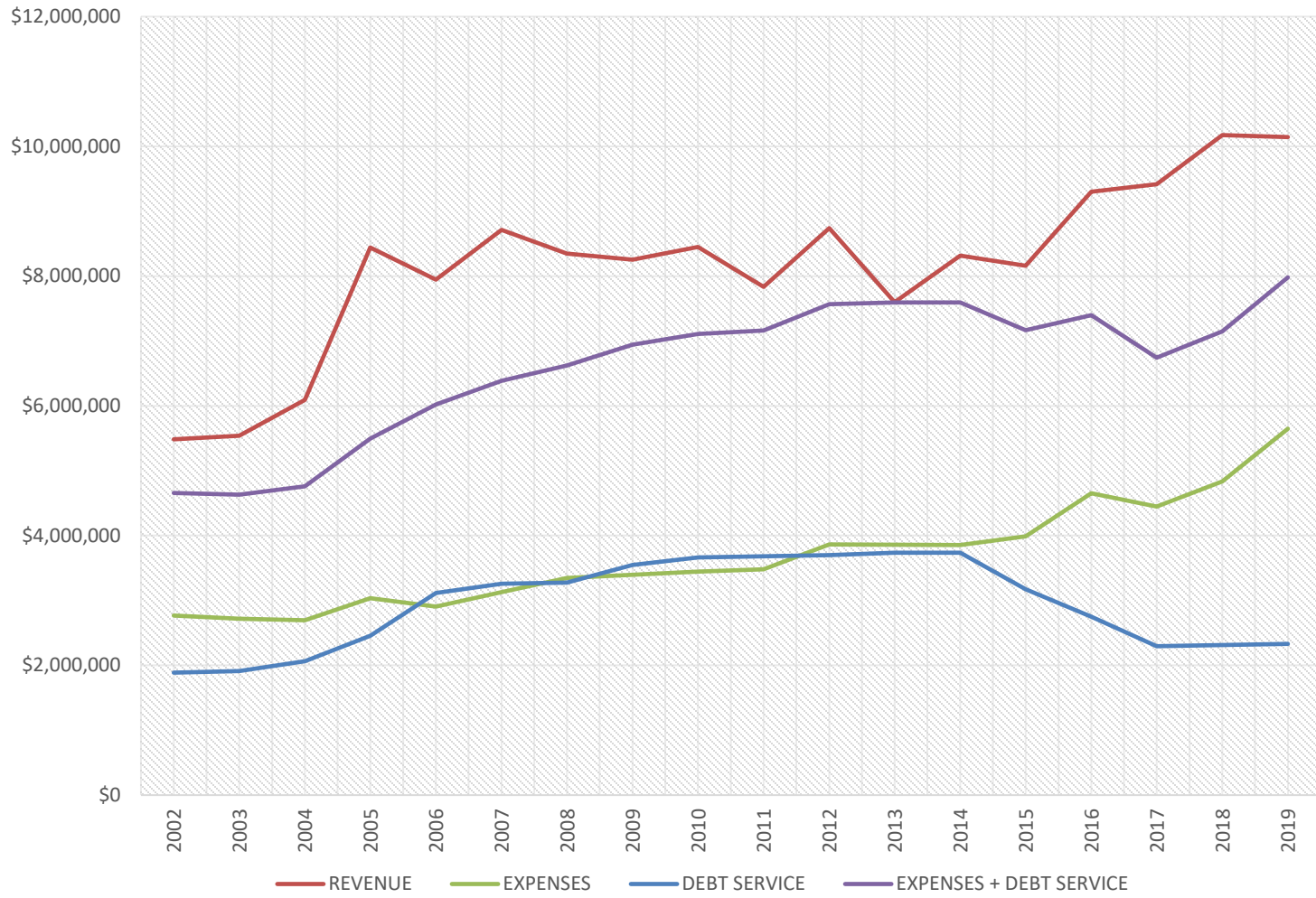
Total Estimated Revenue:	\$10,143,600
Total Estimated Expenditures:	<u>\$7,979,441</u>
<b>Surplus/(Deficit):</b>	<b>\$2,164,159</b>

Table 3 provides a historical comparison of UWSS Revenue versus expenses from 2002-2018



Figure 3

### Revenue and Expenses 2002-2019\*



## CAPITAL PROGRAM

The proposed Capital Program for 2019 is budgeted at \$5,735,000. This includes major Capital Equipment Purchases (e.g. vehicles, heavy equipment) and major Capital Works.

The following major capital works projects are proposed for 2019:

CO2 Raw Water pH Adjustment System:	\$1,550,000
Chlorine Gas System Improvements/New Scrubber:	\$1,550,000
SCADA System Replacement (continued from 2018):	\$1,035,000
High Lift Pump No. 10 - New:	\$ 250,000
Low Lift Main Electrical System Upgrades:	\$ 200,000
DAF System Design - Clarifier #2 :	\$ 150,000
Laboratory Upgrades:	\$ 100,000
Upside Down Valve Corrosion Protection:	\$ 100,000
Distribution System Components:	\$ 75,000
Cottam Booster Reservoir Regrading:	\$ 60,000
Security System Install:	\$ 60,000
Master Water Meter Communication System:	\$ 50,000
Power Factor Capacitor Upgrades:	\$ 50,000
Carbon Scrubber System Upgrade:	\$ 50,000
Grounds Improvements	\$ 50,000
Low Lift Surge Tanks - Ladders & New Compressors:	\$ 40,000
Low Lift #5 Pump Rehab	\$ 35,000
Energy Monitoring and Management System - WTP	\$ 35,000
Filter Meter Replacements -Filters 5,6,7,8	\$ 35,000
Blue Green Algae Probe - Low Lift Well	\$ 30,000
Carbon Feed Pump Upgrade	\$ 30,000
Filters #2 & #4 Inlet Gate Replacement	\$ 30,000
Rechlorination System Upgrades - Cottam Booster:	\$ 30,000
Treatment Plant Building-Admin Area Improvements:	\$ 30,000
Flow Meters & Control Valves - Clarifiers #1 & #3:	\$ 25,000
Chlorine Analyzers - 5 new units:	\$ 25,000
UWSS Communication System Upgrades:	\$ 20,000
Carbon Recirculation Pump Rehab:	\$ 10,000

New Turbidity Meters -Clarifiers #3 & #4:	\$ 10,000
Wastewater Pumps Rehabilitation	\$ 10,000
Lighting Upgrades - Exterior:	<u>\$ 10,000</u>
<b>Total Capital Works for 2019:</b>	<b>\$5,735,000</b>

### **BUDGET SUMMARY**

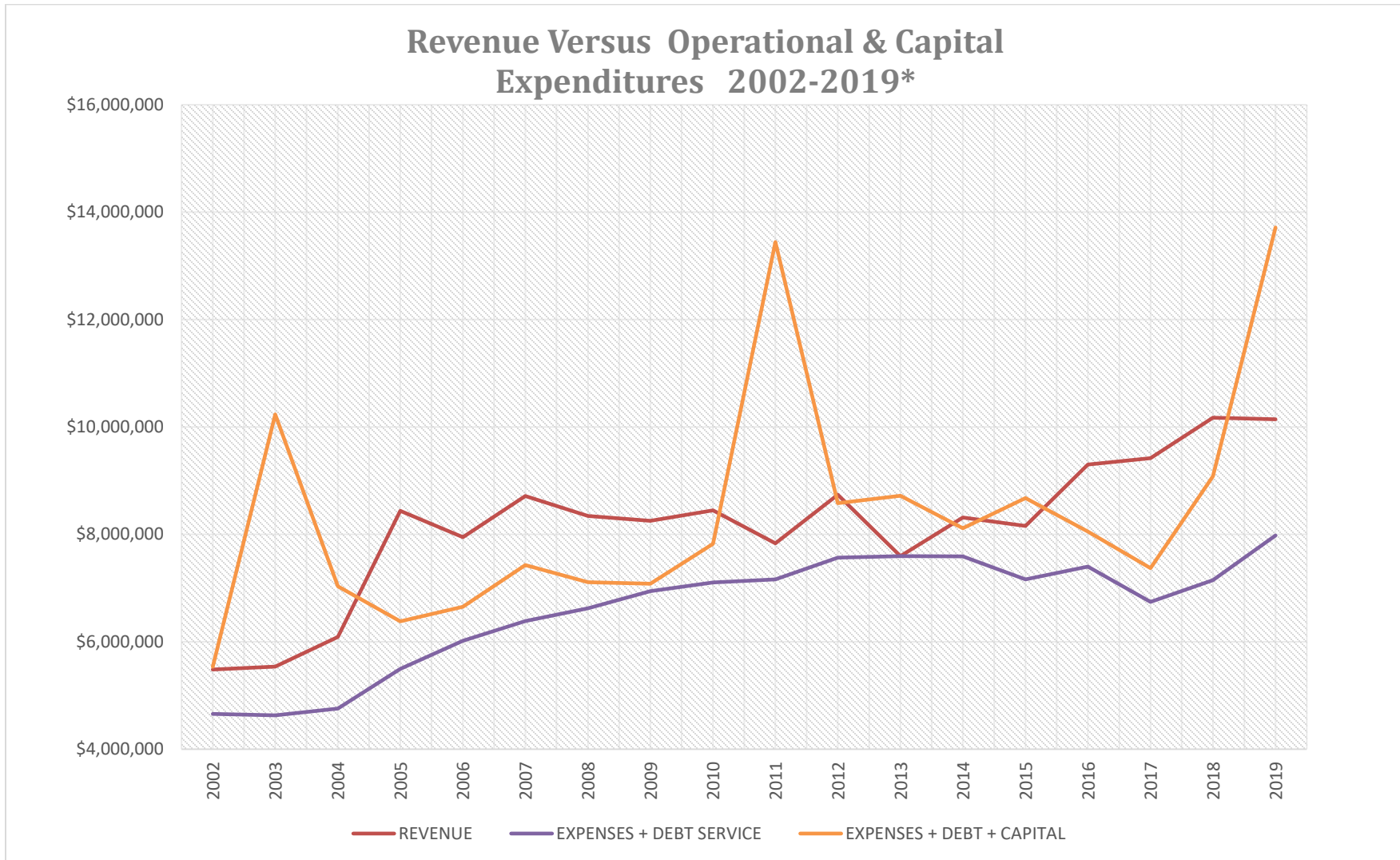
The proposed 2019 budget is summarized as follows:

<b>Total Estimated Revenue:</b> (includes wholesale rate revenue and miscellaneous revenue)	\$10,143,600
<b>Total Estimated Operating Expenditures:</b> (includes Operations Contract, UWSS Admin, Programs & Studies)	<u>(\$7,979,441)</u>
<b>Revenue versus Operating Expenditures:</b> Surplus/ (Deficit)	<b>\$2,164,159</b>
<b>Capital Program:</b> (includes Capital Purchases and Capital Works)	<u>(\$5,735,000)</u>
<b>NET SURPLUS/ (DEFICIT):</b> (Operating surplus/deficit less Capital Program)	<b>(\$3,570,841)</b>

Figure 4 below provides a chart that compares historical UWSS Revenue versus Operating and Capital Expenditures.

Appendix A to this report includes worksheets and tables that provide details on the 2018 Operations and Capital Budgets including a Budget Summary worksheet, Operations and Debt Detail worksheet, 2018 Capital Budget Details worksheet, and a Water Flow and Revenue worksheet.

Figure 4



## CASH /RESERVES VERSUS DEBT

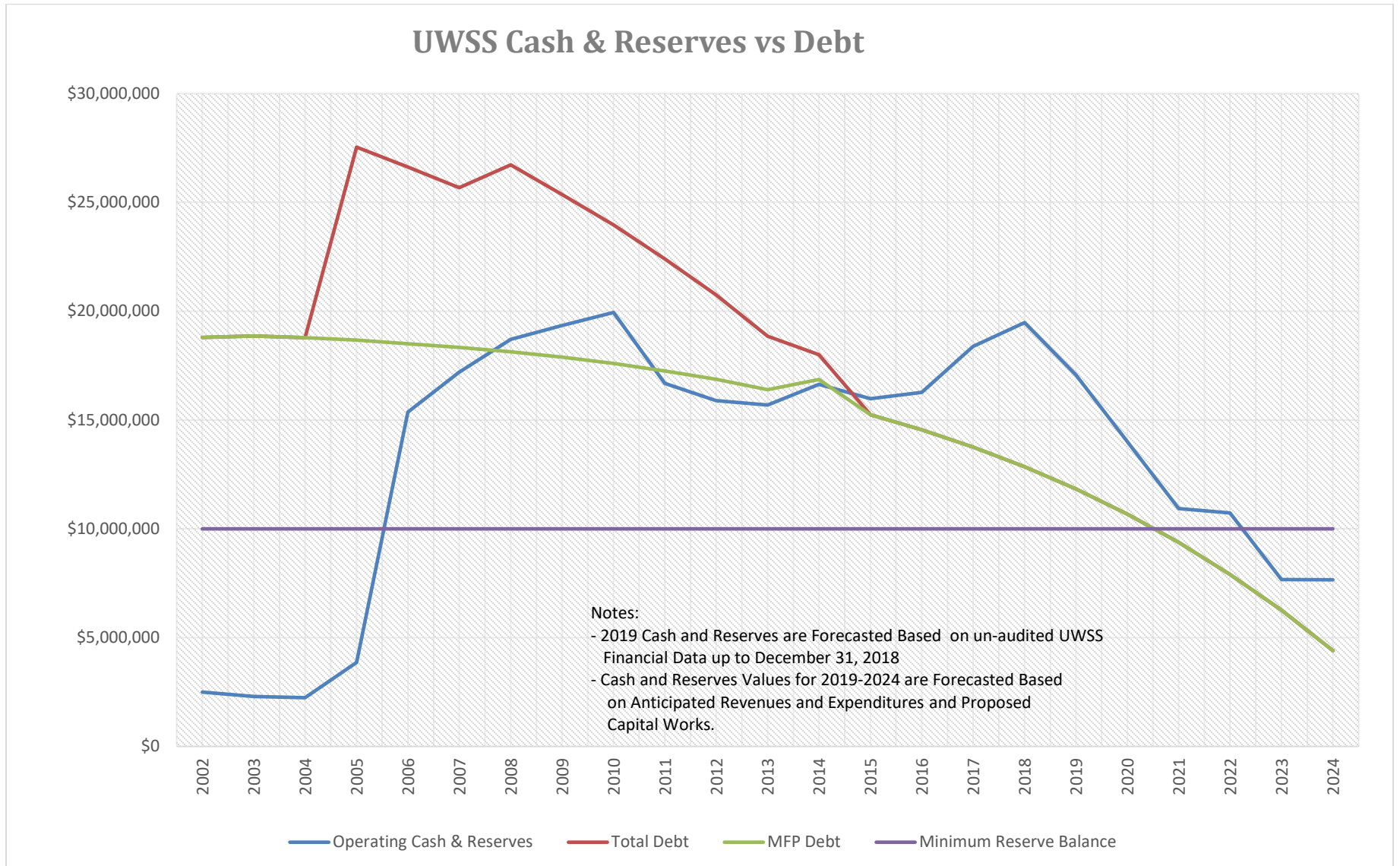
Cash and Reserves for UWSS for fiscal year-end 2018 are forecasted to be approximately \$19,476,000. It should be noted that of the estimated \$19,255,000 in available cash and reserves, \$10,000,000 is currently invested in a GIC until April 2022. Thus, approximately \$9,476,000 in cash and reserves are available for use to fund UWSS operations and capital works.

The 2019 Operating and Capital Budget projects a Net Deficit of (\$3,570,841) for 2019 year end. Thus, it is anticipated that UWSS cash and equivalents at the end of 2019 will decrease to approximately \$5,905,000.

Based on debt repayment schedules, the total UWSS long term debt balance as of December 31, 2018 is \$12,854,535 and consists solely of the Sunlife Debt (MFP Debt).

Figure 5 presents a graph comparing Total Debt and MFP Debt versus Cash Equivalents. It should be noted that "Cash & Reserves" for 2019-2024 are projected based on anticipated Revenues, Expenditures, and proposed Capital Works and are subject to significant changes.

Figure 5



## PROPOSED 6-YEAR CAPITAL WORKS PLAN

The UWSS General Manager, with assistance and input from OCWA Operations Staff has developed a proposed 6-year Capital Works Plan (2019-2024) for the UWSS. This Plan reflects the UWSS General Manager's intention to undertake upgrades and improvements to the UWSS to address lifecycle replacement/upgrade issues and to improve water treatment, storage and transmission efficiencies.

The following large capital works are included in the 6-Year Capital Plan:

<u>Proposed Capital Works</u>	<u>Estimated Cost</u>	<u>Proposed Year of Implementation</u>
- Clarifier Retrofit to Dissolved Air Floatation (DAF)	\$2,000,000	2020-2021
- Kingsville Tower Rehabilitation	\$1,100,000	2020
- UV Disinfection System in Primary Reservoir	\$5,500,000	2021
- Second Clarifier Retrofit to DAF	\$2,000,000	2022
- Replacement of 12-inch watermain to Cottam Booster	\$6,000,000	2020-2023
- Administration Building Expansion/Elevator	\$1,100,000	2023-2024
- Partial Residuals Management System	\$1,500,000	2024

The large capital items identified in the Table above are currently included as “placeholders” and undertaking of such works would be subject to thorough technical and financial evaluation and approval by the UWSS Board. Costs associated with these future capital works are preliminary and are included for Capital Planning and Finance purposes and are subject to change. The Proposed 6-Year Capital Plan is included as Appendix B to this Report. The Plan identifies the proposed works for each year and the anticipated value of the works.

## CONCLUSIONS:

It is the UWSS Manager's opinion that the Budget presented in this report provides a Budget for UWSS that is fiscally prudent while also providing for the major maintenance and lifecycle replacements needed to ensure that UWSS facilities and operations are effective and sustainable for the future.

Respectfully submitted,



Rodney Bouchard, General Manager  
Union Water Supply System Joint Board of Management

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**2019 UWSS DRAFT OPERATIONS AND CAPITAL BUDGET  
TABLES AND DETAILS**

**UWSS 6-YEAR CAPITAL PLAN  
TABLES AND DETAILS**