

UW/31/20

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

FROM: Rodney Bouchard, Union Water Manager

DATE: December 8, 2020

RE: Draft 2021 UWSS Operations and Capital Budget Report



RECOMMENDATION

That the Union Water Supply System Joint Board of Management (UWSS Board) adopts the Draft 2021 Operational and Capital Budget for the Union Water Supply System;

And further, that the UWSS Board adopts an increase of \$0.0258 per cubic metre for the UWSS Wholesale Rate. The new proposed UWSS Wholesale Rate for 2021 would be \$0.6716 per cubic meter.

And further, that the UWSS General Manager be provided the delegated authority to implement the 2021 UWSS Operations & Maintenance Budget and 2021 Capital Program.

REPORT HIGHLIGHTS

- Potable water demand from UWSS is anticipated to be approximately 19,477,000 m³ (4,285,900,000 imperial gallons) for 2021. This represents a 2% increase in water demand over 2020.
- An increase of \$0.0258 per cubic meter is proposed for the UWSS Wholesale Rate. The new proposed Rate 1 wholesale rate for 2021 would be \$0.6716 per cubic meter.
- UWSS Revenue for 2021 is estimated at \$13,578,000 of which \$13,081,000 is from wholesale of water to municipalities, \$405,000 from investment revenue, \$22,000 from Sundry Revenue and \$70,000 from municipal study revenue.
- Operational and Debt Service Expenditures for 2021 are estimated at \$8,572,000. This includes \$3,397,000 for OCWA Operations and Maintenance services and \$2,370,000 for the Sunlife Loan (former MFD Debt).
- A budget of \$430,000 has been established for proposed 2021 Operational Studies and Programs.
- 2021 Revenue versus Operational and Debt Service Expenditures are anticipate to result in a surplus of approximately \$5,006,000 for 2021 Fiscal Year;
- A Capital Program of \$8,155,000 is proposed for 2021; A draw of \$3,149,500 from the UWSS Reserves would be needed to fund the 2021 Capital Program.
- Projected total UWSS Reserves for January 1, 2021 are estimated at \$21,597,000

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 2020.

This draft budget is being presented to the UWSS board for consideration and approval. The draft 2021 budget is outlined to provide details in regards to the following:

- Anticipated revenue for 2021 from wholesale of water to the partner municipalities;
- Anticipated operating expenditures for 2021 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 2021 for UWSS;
- Forecasted Operational Expenditures and Capital Works program for 2021-2025.

DISCUSSION:

The draft 2021 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 Cost Plus Operations and Maintenance Agreement between UWSS and OCWA that came into effect on July 1, 2019;
- Capital Projects that were approved and initiated in previous years that are on-going into 2021.

Details regarding the budget components are discussed below.

OPERATING EXPENDITURES

Expenditures for the Union Water Supply System (UWSS) include *Fixed Expenditures* such as the OCWA operations contract, administration, and debt service and *Programs and Studies* that are proposed for 2021 to identify cost effective improvements for the operation of the UWSS. The total projected expenditures for 2021 is budgeted at approximately at \$8,572,000.

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Fixed Expenditures

Fixed expenditures for the budget process include the OCWA Operations Budget, UWSS Administrative Budget, and Debt Service. The total fixed expenditures for 2021 is budgeted at \$8,142,120. The fixed expenditures consist of the following components:

OCWA Operations Budget:	\$3,396,906
UWSS Administrative Budget:	\$ 459,077
Residuals Ponds Maintenance:	\$ 200,000
CO2 Gas Bulk Purchase Contract:	\$ 100,000
Watermain Repairs:	\$ 100,000
Corrosion Monitoring Program:	\$ 50,000
Property Taxes:	\$ 150,160
Electricity and Natural Gas:	<u>\$ 1,315,600</u>
<i>Total Operations, Administrative, Energy:</i>	<i>\$5,771,743</i>
Debt Service:	
Sunlife Debt (MFP Debt):	<u>\$2,370,377</u>
<i>Total Debt Service:</i>	<i>\$2,370,377</i>
Total Fixed Costs:	\$8,142,120

Programs and Studies

A number of Programs and Studies are included in the 2021 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;

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- Evaluate water demand and water usage by various sectors including residential, commercial, industrial, and food processing/greenhouse industry to assess future capital infrastructure needs;
- Evaluate water quality to for potential issues such as toxic algae in raw water, nitrification issues in larger distribution systems, etc.

For the 2021 budget year, \$430,000 has been allocated to Programs and Studies. The following studies are proposed or currently in place.

UWSS Master Servicing Plan Study	\$145,000
Lake Erie HAB Monitoring Project:	\$100,000
Emergency Water Servicing Study:	\$115,000
New WTP Reservoir #3 Study:	\$ 30,000
Backup Power Generation/Energy Study:	<u>\$ 40,000</u>
Total:	\$430,000

Operating Expenditure Summary

Fixed Expenditures:	\$8,142,120
Programs and Studies:	<u>\$ 430,000</u>
Total Operating Expenditures for 2020:	\$8,572,120

REVENUE

Revenue for the budget process is mainly based on wholesale billings from the sale of potable water to the 4 municipal owners. A much smaller component of revenue is based on miscellaneous revenue such as investment income and sundry income. The total estimated revenue for 2021 is \$13,578,000

Wholesale Water Revenue Summary

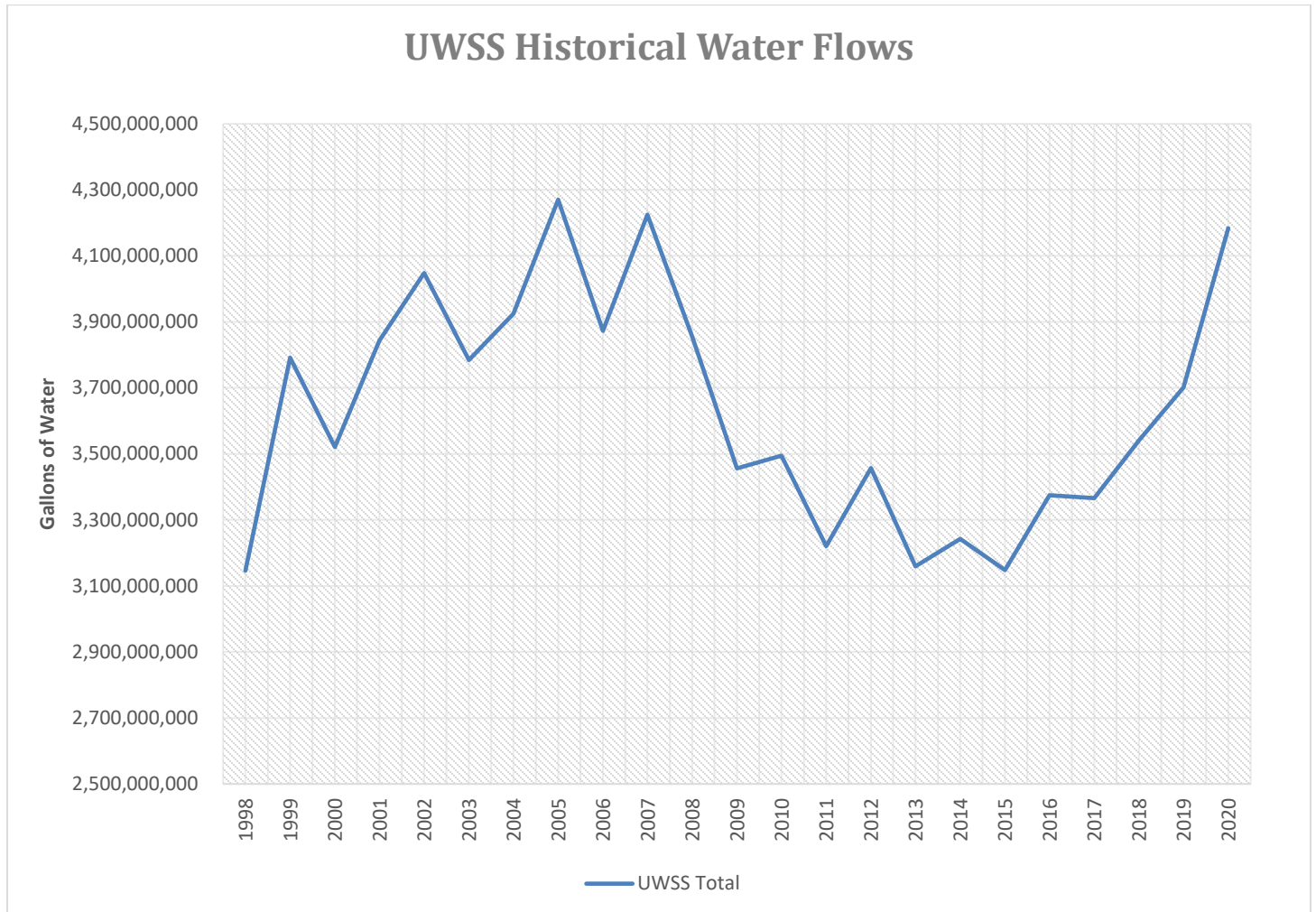
Wholesale water revenue is based on annual water usage by the 4 owner municipalities and the wholesale water rates.

Water Usage

The projected water "usage" by municipal owners for 2021 is 19,477,000 m³ (4,284,940,000 imperial gallons), which is based on a 2% increase in water demand over 2020.

Figure 1 depicts the total UWSS water usage trend from 1998-2020 (value for 2020 is a projected total).

Figure 1

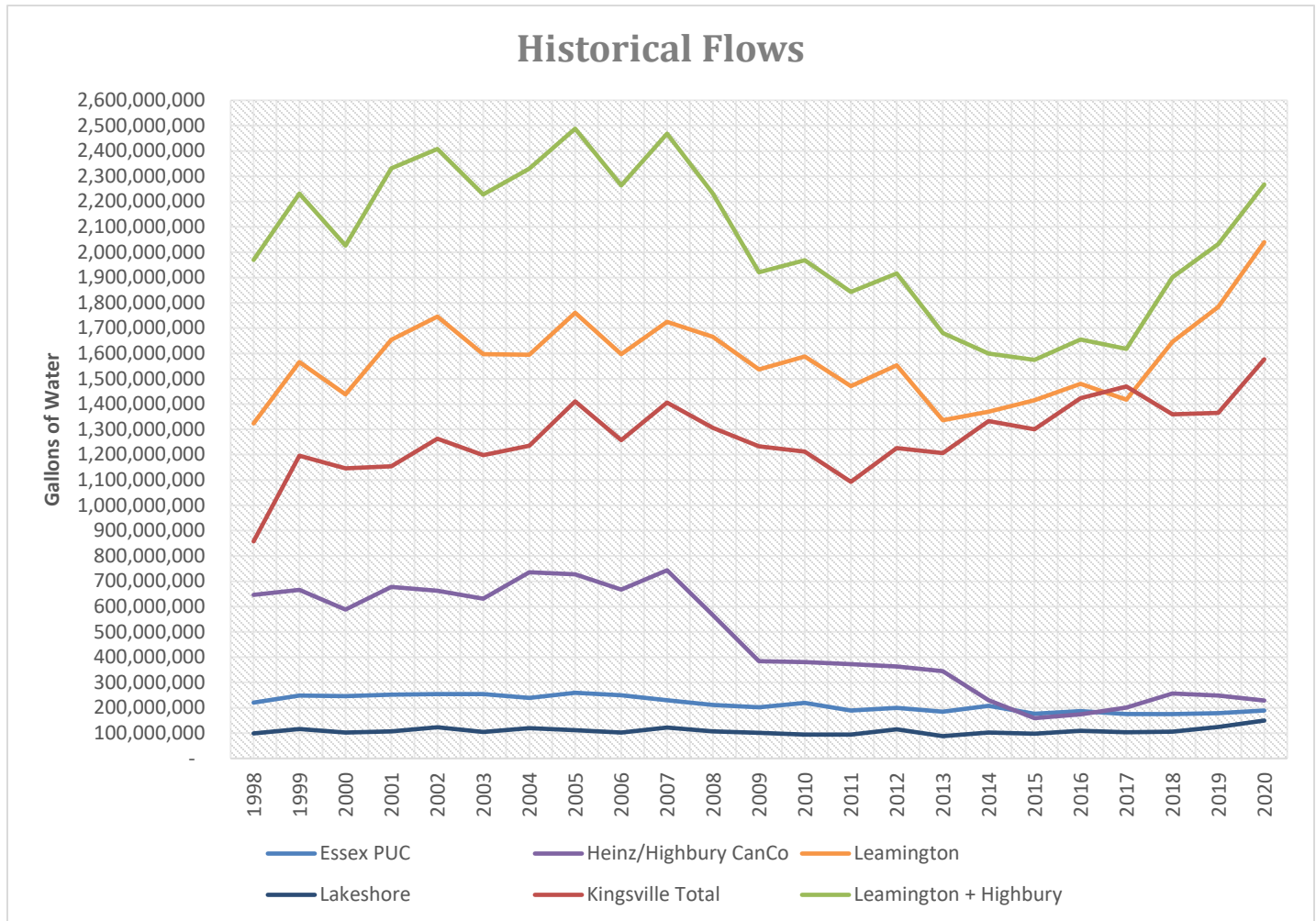


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Figure 2 depicts the water usage trend by each municipal partner from 1998-2020.

Figure 2



Wholesale Water Rates

For the 2021 budgeting process, it is proposed that an increase of \$0.0258 per cubic meter be applied to the UWSS wholesale rate. This would result in a 2021 UWSS wholesale rate of \$0.6716 per cubic meter to be applied as of January 1, 2021.

Based on the anticipated water demand of 19,477,000 m3 of potable water for 2021, the wholesale rate water revenue is estimated at:

Wholesale Rate Revenue Total: \$13,080,753

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Miscellaneous Revenue

Miscellaneous revenue includes income from investments and sundry income.

Investment (interest) income:	\$ 405,000
Municipal Study Revenue:	\$ 70,000
Sundry revenue:	<u>\$ 21,848</u>
Total Misc. Revenue:	\$ 496,848

Sundry revenue is revenue received from various sources such as lease of space on water towers for telecommunications equipment. The Municipal Study Revenue is revenue that UWSS will receive from Windsor Utilities for a \$140,000 joint study that UWSS is funding. This study is being conducted on a 50% cost share and UWSS will invoice Windsor Utilities for 50% of the study costs.

Revenue Summary

Wholesale Rate Revenue:	\$13,080,753
Miscellaneous Revenue :	<u>\$ 496,848</u>
Total Estimated Revenue for 2021:	\$13,577,601

REVENUE VERSUS OPERATING EXPENDITURES

A comparison of Revenue versus Expenditures for 2021 budget is as follows. It should be noted that the total estimated expenditures also include the proposed budget for operational Programs and Studies of \$430,000.

Total Estimated Revenue:	\$13,577,601
Total Estimated Expenditures:	<u>\$ 8,572,120</u>
Surplus/(Deficit):	\$ 5,005,481

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CAPITAL PROGRAM

The proposed Capital Program for 2021 is budgeted at \$8,155,000.

Capital Works:

The following major capital works projects are proposed for 2021:

Low Lift Pump #3 Major Maintenance:	\$ 35,000
Low Lift Roof Replacement:	\$ 75,000
Low Lift Main Electrical/Transformer Upgrades:	\$ 200,000
Filter Aid System Upgrade:	\$ 60,000
Filter #2 Rehab:	\$ 300,000
Filter #4 Rehab:	\$ 300,000
New Highlift #7 Pump:	\$ 175,000
Communication System Upgrades:	\$ 35,000
PLC Upgrades (Low Lift, Cottam Booster, Generator B):	\$ 150,000
Electrical Upgrades:	\$ 70,000
Cottam Booster Mixing System:	\$ 75,000
Kingsville Water Tower Rehabilitation:	\$1,300,000
Essex Water Tower New Cathodic Protection System:	\$ 40,000
Distribution System Components:	\$ 150,000
Master Water Meter Upgrades:	\$ 50,000
Laboratory Upgrades:	\$ 75,000
Treatment Plant Admin Area Improvements:	\$ 30,000
Clearwell #1 Inlet Rotork - New:	\$ 20,000
Wastewater Pump - New Backup Pump:	\$ 50,000
Grounds Improvements:	\$ 170,000
Fencing - Water Treatment Plant and Leamington Tower:	\$ 20,000
Ammonia Building Retrofits:	\$ 125,000
DAF System Design/Construction - Clarifier #2:	\$4,500,000
Kingsville Water Tower New Utility Building:	<u>\$ 150,000</u>
Total Capital Works for 2021:	\$8,155,000

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BUDGET SUMMARY

The proposed 2021 budget is summarized as follows:

Total Estimated Revenue: (includes wholesale rate revenue and miscellaneous revenue)	\$13,577,601
Total Estimated Operating Expenditures: (includes Operations Contract, UWSS Admin, Programs & Studies)	<u>(\$8,572,120)</u>
Revenue versus Operating Expenditures: Surplus/ (Deficit)	\$5,005,481
Capital Program: (includes Capital Purchases and Capital Works)	<u>(\$8,155,000)</u>
NET SURPLUS/ (DEFICIT) : (Operating surplus/deficit less Capital Program)	(\$3,149,519)

The capital program for 2021 will be funded through the UWSS Reserves.

CASH /RESERVES VERSUS DEBT

Cash and Reserves for UWSS as of January 1, 2021 are forecasted to be approximately \$21,597,000 dollars. It should be noted that of the estimated \$21,597,000 in available cash and reserves for 2021, approximately \$10,785,000 are dedicated to UWSS Settlement Reserve, which is associated with the 2006 settlement that was reached regarding the MFP debt. Although the UWSS Board has authority to use these funds as it sees fit, the intent is to keep these funds in an interest bearing investment funds to offset the annual MFP Debt obligation and to function as a rate stabilizing Reserve Fund. These funds are currently invested in a GIC that will come to term in 2022 but are fully liquid and accessible if needed.

The 2021 Operating and Capital Budget projects a Net Deficit of \$3,149,519 for 2021 year end. Thus, it is anticipated that UWSS reserves at the end of 2021 will decrease to approximately \$18,725,000

Based on debt repayment schedules, the total UWSS long term debt balance for as of January 2021 is \$10,678,259 and consists solely of the Sunlife Loan (aka former MFP Debt) that has a term date of 2026. At the end of 2021, this debt will decrease to \$9,375,773.

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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 (2021-2026) for the UWSS. This Plan reflects the UWSS 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 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. The total proposed rate and Reserve funded capital works expenditures for 2021-2026 are projected at \$32,175,000. Proposed debt funded capital works for this period is valued at \$33,000,000 and include proposed Reservoir #3 (\$25,000,000) and upgrade of 12-inch watermain to Cottam (\$8,000,000).

CONCLUSIONS:

It is the UWSS General 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

rb/kmj

**2021 UWSS DRAFT OPERATIONS AND CAPITAL BUDGET
TABLES AND DETAILS**

**UNION WATER SUPPLY SYSTEM
2021 DRAFT BUDGET
Budgeted Water Demand and Wholesale Rate Revenue**

Flow Metering Location	2020 Approved Budget	2020 Actual as of Oct. 31st, 2020	2020 Forecasted to Dec. 31st, 2020	2021 Rate Increase of \$0.0258 per m3	2022 Rate Increase of \$0.0269 per m3	2023 Rate Increase of \$0.0279 per m3	2024 Rate Increase of \$0.0291 per m3	2025 Rate Increase of \$0.0302 per m3	2026 Rate Increase of \$0.0314 per m3
Essex PUC	795,000	761,598	860,563	881,000	889,810	898,708	907,695	916,772	925,940
Gosfield N. Twsp	645,000	600,634	678,682	695,000	701,950	708,970	716,059	723,220	730,452
Gosfield S. Twsp	5,020,000	5,147,273	5,816,127	5,957,000	6,016,570	6,076,736	6,137,503	6,198,878	6,260,867
Highbury CanCo	1,150,000	918,469	1,037,818	1,063,000	1,073,630	1,084,366	1,095,210	1,106,162	1,117,224
Kingsville PUC	650,000	594,678	671,953	688,000	694,880	701,829	708,847	715,936	723,095
Leamington PUC	8,150,000	8,204,336	9,270,436	9,496,000	9,590,960	9,686,870	9,783,738	9,881,576	9,980,391
Lakeshore	540,000	602,013	680,241	697,000	703,970	711,010	718,120	725,301	732,554
Total Flow:	16,950,000	16,829,001	19,015,820	19,477,000	19,671,770	19,868,488	20,067,173	20,267,844	20,470,523
	3,729,000,000	3,702,380,160	4,183,480,407	4,284,940,000	4,327,789,400	4,371,067,294	4,414,777,967	4,458,925,747	4,503,515,004
			12%	2%	1%	1%	1%	1%	1%
Rate 1 Flow	16,950,000	16,829,001	19,015,820	19,477,000	19,671,770	19,868,488	20,067,173	20,267,844	20,470,523
Rate 1	\$0.6458	\$0.6458	\$0.6458	\$0.6716	\$0.6985	\$0.7264	\$0.7555	\$0.7857	\$0.8171
Rate 1 Revenue	\$10,946,310	\$10,868,169	\$12,280,417	\$13,080,753	\$13,740,731	\$14,432,469	\$15,160,749	\$15,924,445	\$16,726,464
Rate 2 Flow	0	0	0	0	0	0	0	0	0
Rate 2	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Rate 2 Revenue	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Rate 3 Flow	0	0	0	0	0	0	0	0	0
Rate 3 Flow	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Rate 3 Revenue	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Lifecycle Rate	\$0.0791	\$0.0791	\$0.0791	\$0.0791	\$0.0791	\$0.0791	\$0.0791	\$0.0791	\$0.0791
	\$1,341,084	\$1,331,511	\$1,504,532	\$1,541,020	\$1,556,430	\$1,571,995	\$1,587,715	\$1,603,592	\$1,619,628
Total Revenue	\$10,946,310	\$10,868,169	\$12,280,417	\$13,080,753	\$13,740,731	\$14,432,469	\$15,160,749	\$15,924,445	\$16,726,464

**UNION WATER SUPPLY SYSTEM
2021 DRAFT BUDGET
Budget Summary**

	2020	2020	2020	2021	2022	2023	2024	2025	2026
	Approved Budget	Actual as of Oct. 31st, 2020	Forecasted to Dec 31st, 2020	Rate Increase of \$0.0258 per m3	Rate Increase of \$0.0269 per m3	Rate Increase of \$0.0279 per m3	Rate Increase of \$0.0291 per m3	Rate Increase of \$0.0302 per m3	Rate Increase of \$0.0314 per m3
REVENUE									
Senior Government Grants	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Wholesale Rate Billings	\$10,946,310	\$10,868,169	\$12,280,417	\$13,080,753	\$13,740,731	\$14,432,469	\$15,160,749	\$15,924,445	\$16,726,464
Investment Income	\$459,000	\$395,700	\$475,000	\$405,207	\$413,311	\$421,577	\$430,009	\$438,609	\$447,381
Sundry revenue	\$21,420	\$18,816	\$22,600	\$21,848	\$22,285	\$22,731	\$23,186	\$23,649	\$24,122
Municipal Study Revenue	\$0	\$0	\$0	\$70,000					
TOTAL REVENUES	\$11,426,730	\$11,282,685	\$12,778,017	\$13,577,809	\$14,176,328	\$14,876,778	\$15,613,943	\$16,386,704	\$17,197,968
OPERATING EXPENDITURE									
General Administration	\$359,115	\$313,319	\$374,011	\$384,077	\$384,139	\$389,302	\$394,568	\$399,939	\$405,418
Leamington Assistance	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
Miscellaneous Legal/Professional fees	\$75,000	\$15,197	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000	\$45,000
OCWA Operating Contract	\$3,330,300	\$2,768,746	\$3,207,295	\$3,396,906	\$3,464,844	\$3,534,141	\$3,604,824	\$3,676,920	\$3,750,459
Programs and Studies	\$600,000	\$285,000	\$130,000	\$430,000	\$400,000	\$250,000	\$150,000	\$150,000	\$150,000
Operational/Maintenance/Upgrades - General	\$250,000	\$136,031	\$171,031	\$350,000	\$300,000	\$300,000	\$300,000	\$300,000	\$300,000
Property Taxes	\$147,500	\$76,978	\$150,160	\$147,500	\$147,500	\$147,500	\$147,500	\$147,500	\$147,500
CO2 Liquefied Gas Procurement	\$178,500	\$12,766	\$19,104	\$100,000	\$102,000	\$104,040	\$106,121	\$108,243	\$110,408
Electricity and Natural Gas	\$1,275,000	\$1,047,000	\$1,265,000	\$1,315,600	\$1,341,912	\$1,368,750	\$1,396,125	\$1,424,048	\$1,452,529
TOTAL OPERATING EXPENDITURES	\$6,245,415	\$4,685,037	\$5,391,601	\$6,199,083	\$6,215,395	\$6,168,733	\$6,174,138	\$6,281,650	\$6,391,313
Debt Service	\$2,351,279	\$2,069,125	\$2,351,279	\$2,370,377	\$4,389,596	\$4,408,934	\$5,428,392	\$5,449,323	\$5,467,669
TOTAL DEBT SERVICE EXPENDITURES	\$2,351,279	\$2,069,125	\$2,351,279	\$2,370,377	\$4,389,596	\$4,408,934	\$5,428,392	\$5,449,323	\$5,467,669
CASH CAPITAL EXPENDITURE									
Capital Repair, Maintenance & Upgrade Works	\$5,050,000	\$875,225	\$1,486,441	\$8,155,000	\$5,480,000	\$6,150,000	\$6,160,000	\$4,080,000	\$2,150,000
Contingency									
TOTAL CASH FUNDED CAPITAL EXPENDITURES	\$5,050,000	\$875,225	\$1,486,441	\$8,155,000	\$5,480,000	\$6,150,000	\$6,160,000	\$4,080,000	\$2,150,000
NET SURPLUS/(DEFICIT)	(\$2,219,964)	\$3,653,298	\$3,548,696	(\$3,146,652)	(\$1,908,663)	(\$1,850,889)	(\$2,148,586)	\$575,730	\$3,188,986
	2020	2020	2020	2021	2022	2023	2024	2025	2026
	Approved Budget	As of Oct. 31st	Forecasted to Dec 31st	Budget	Budget	Budget	Budget	Budget	Budget
Operating & Capital Reserves	\$7,263,660	\$7,263,660	\$7,263,660	\$10,812,356	\$7,665,704	\$5,757,041	\$3,906,152	\$1,757,566	\$2,333,296
Addition/(subtraction) from Operations Budget.	-\$2,219,964	\$3,653,298	\$3,548,696	-\$3,146,652	-\$1,908,663	-\$1,850,889	-\$2,148,586	\$575,730	\$3,188,986
Addition/(Subtraction) from Rate Stabilization Reserve	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Operating & Capital Reserves	\$5,043,696	\$10,916,958	\$10,812,356	\$7,665,704	\$5,757,041	\$3,906,152	\$1,757,566	\$2,333,296	\$5,522,282
Rate Stabilization Reserve	\$10,516,503	\$10,516,503	\$10,516,503	\$10,784,674	\$11,059,683	\$11,341,705	\$11,630,918	\$11,927,507	\$12,231,658
Interest (GIC at 2.55%)	\$268,171	\$268,171	\$268,171	\$275,009	\$282,022	\$289,213	\$296,588	\$304,151	\$311,907
Subtotal Rate Stabilization Reserve	\$10,784,674	\$10,784,674	\$10,784,674	\$11,059,683	\$11,341,705	\$11,630,918	\$11,927,507	\$12,231,658	\$12,543,566
(Subtraction) from Rate Stabilization Reserve	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total Rate Stabilization Reserve	\$10,784,674	\$10,784,674	\$10,784,674	\$11,059,683	\$11,341,705	\$11,630,918	\$11,927,507	\$12,231,658	\$12,543,566
Total Reserves	\$15,828,370	\$21,701,632	\$21,597,029	\$18,725,387	\$17,098,746	\$15,537,070	\$13,685,073	\$14,564,955	\$18,065,847
Sunlife Debt	\$10,678,259	\$10,678,259	\$10,678,259	\$9,375,773	\$7,908,943	\$6,259,451	\$4,406,948	\$2,310,158	\$0

UNION WATER SUPPLY SYSTEM
DRAFT 2021 BUDGET
2020 Capital Expenditures Summary

Item Description	2020 Approved Study/ Capital Budget	Actual as of Oct. 31st	% of Budget as of Oct 31st	Projected Expenditures to Dec. 31st	Projected % of Budget to Dec. 31st	Comments
Studies and Programs						
Water Demand/ Water Loss/ Water Quality Initiatives	\$75,000	\$34,854	46%	\$45,000	60%	Work associated with this is basically complete
Lake Erie Hab Monitoring Project - UWSS & Univ. of Windsor/GLIER	\$100,000	\$0	0%	\$0	0%	Grant Matching funds. Grant process delayed. Hopeful for 2021
Emergency Water Servicing Study - UWSS & WUC	\$140,000	\$0	0%	\$25,000	18%	Approved in October 2020. Will continue into 2021
New Ruthven WTP Reservoir #3 Study/ Reservoir Optimization	\$40,000	\$5,000	13%	\$10,000	25%	Underway. Will continue into 2021
Backup power generation/ energy study	\$40,000	\$0	0%	\$0	0%	Moved to 2021
UWSS Infrastructure Review and Master Servicing Plan	\$205,000	\$0	0%	\$50,000	24%	Approved in October 2020. Will continue into 2021
Total Studies/Programs:	\$600,000	\$39,854	7%	\$130,000	22%	
Capital Works and Major Maintenance						
Low Lift Pump #5 Rehab	\$35,000	\$41,441	118%	\$41,441	118%	Project Complete
Low Lift Roof Replacement	\$90,000	\$0	0%	\$0	0%	Moved to 2021
Blue Green Algae/ Chlorophyll Probe - Low lift well	\$30,000	\$0	0%	\$25,000	83%	Underway. Should be spent by end of 2020
Low Lift Main Electrical-Transformer/Feed/Switch Gear/Breaker Upgrades	\$250,000	\$48,664	19%	\$75,000	30%	Underway. Delayed due to COVID 19 Restrictions. Will continue into 2021
Carbon Recirculation Pump - New	\$10,000	\$0	0%	\$0	0%	Not required
Filter # 4 - Rehab (recoat filter box; new underdrains)	\$400,000	\$0	0%	\$0	0%	Delayed. Moved to 2021
Highlift Pump #7 - New	\$250,000	\$0	0%	\$0	0%	Delayed. Moved to 2021
New Panel, Quick Connect & Transfer Switch for Portable Generator	\$60,000	\$0	0%	\$20,000	33%	Underway. Will continue into 2021
SCADA System Upgrades (continued from 2019)	\$250,000	\$200,002	80%	\$390,000	156%	Substantially complete.
Security System Install	\$85,000	\$37,366	44%	\$90,000	106%	Substantially complete.
UWSS Wide Communication Upgrades	\$20,000	\$7,714	39%	\$20,000	100%	Work will be completed by end of 2020
Cottam Booster - Review Baffling to improve reservoir mixing	\$30,000	\$14,466	48%	\$30,000	100%	Should be complete by end of 2020
Kingsville Water Tower Recoating; Safety Upgrades; Improvements	\$1,300,000	\$35,345	3%	\$60,000	5%	Delayed due to COVID 19. Moved to 2021
Distribution System Components	\$200,000	\$89,243	45%	\$125,000	63%	On-going. This years work to be completed by end of 2020
Master Water Meters Upgrades	\$50,000	\$26,368	53%	\$45,000	90%	Basically complete for this year
Laboratory Upgrades	\$100,000	\$12,000	12%	\$50,000	50%	Underway. Will continue into 2021
Treatment Plant Bldg Improvements - Admin Area/New offices	\$45,000	\$0	0%	\$15,000	33%	Underway. Will continue into 2021
Grounds Improvements (landscaping; asphalt/road repairs, etc)	\$100,000	\$17,454	17%	\$25,000	25%	Delayed due to COVID 19. Moved to 2021
Fencing - Treatment Plant Property; Leamington Water Tower Property	\$45,000	\$0	0%	\$0	0%	Completed under OCWA Budget
Total Capital Works and Major Maintenance:	\$3,350,000	\$530,063	16%	\$1,011,441	30%	
NEW CAPITAL WORKS						
DAF System Design/ Build (Project Will start in Fall 2020; complete in 2021. Total budget \$2,500,000)	\$1,400,000	\$41,312	3%	\$175,000	13%	Design underway. Construction to be done in 2021
Chlorine Gas System Improvements and New Scrubber	\$150,000	\$151,925	101%	\$150,000	100%	Complete
CO2 pH Adjustment System Construction	\$150,000	\$151,925	101%	\$150,000	100%	Complete
Total Maintenance and Repairs:	\$1,700,000	\$345,162	20%	\$475,000	28%	
Total Capital Works:	\$5,050,000	\$875,225	17%	\$1,486,441	29%	

UNION WATER SUPPLY SYSTEM
DRAFT 2021 BUDGET
2021 Proposed Capital Budget

Item Description	CATEGORY							FUNDING SOURCE		
	Studies	Treatment Plant Upgrades & Renewals	Low Lift Upgrades	Cottam Booster Upgrades	SCADA / Communication/ Security System Upgrades	Transmission Facilities	General/ Various Facilities	TOTAL	Revenue	Reserves
STUDIES/PROGRAMS										
Lake Erie HAB Monitoring Project - UWSS & Univ. of Windsor/GLIER	\$100,000									
Emergency Water Servicing Study - UWSS & WUC	\$115,000									
New Ruthven WTP Reservoir #3 Study/ Reservoir Optimization	\$30,000									
Backup power generation/ energy study	\$40,000									
UWSS Infrastructure Review and Master Servicing Plan	\$145,000									
Total Studies/Programs	\$430,000									
CAPITAL WORKS/ MAJOR MAINTENANCE										
Low Lift Pump #3 Rehab			\$35,000					\$35,000		
Low Lift Roof Replacement			\$75,000					\$75,000		
Low Lift Main Electrical-Transformer/Feed/Switch Gear/Breaker Upgrades			\$200,000					\$200,000		
Filter Aid System Upgrade		\$60,000						\$60,000		
Filter # 2 - Rehab (recoat filter box; new underdrains)		\$300,000						\$300,000		
Filter # 4 - Rehab (recoat filter box; new underdrains)		\$300,000						\$300,000		
Highlift Pump #7 - New		\$175,000						\$175,000		
Communication System upgrades					\$35,000			\$35,000		
PLC Upgrades - Low Lift, Cottam Booster, Generator B					\$150,000			\$150,000		
Electrical Upgrades - capacitors, etc.							\$70,000	\$70,000		
Cottam Booster mixing system design and install				\$75,000				\$75,000		
Kingsville Water Tower Recoating; Safety Upgrades; Improvements						\$1,300,000		\$1,300,000		
Essex Water Tower New Cathodic Protection System						\$40,000		\$40,000		
Distribution System Components						\$150,000		\$150,000		
Master Water Meters Upgrades						\$50,000		\$50,000		
Laboratory Upgrades						\$75,000		\$75,000		
Treatment Plant Bldg Improvements - Admin Area		\$30,000						\$30,000		
Clearwell #1 Inlet Rotork - new		\$20,000						\$20,000		
Wastewater Pump - New backup pump		\$50,000						\$50,000		
Grounds Improvements (landscaping; asphalt/road repairs, etc)							\$170,000	\$170,000		
Ammonia Building Retrofits							\$125,000	\$125,000		
Fencing - Treatment Plant Property; Leamington Water Tower Property							\$20,000	\$20,000		
Total Capital Works/ Major Maintenance		\$935,000	\$310,000	\$75,000	\$185,000	\$1,615,000	\$385,000	\$3,505,000		
NEW CAPITAL WORKS										
DAF System Design for 2 units; construction of Clarifier #2 retrofit		\$4,500,000						\$4,500,000		
Kingsville Water Tower new utility Building							\$150,000	\$150,000		
Total New Capital Works		\$4,500,000	\$0	\$0	\$0	\$0	\$150,000	\$4,650,000		
TOTAL MAJOR MAINTENANCE and CAPITAL		\$5,435,000	\$310,000	\$75,000	\$185,000	\$1,615,000	\$535,000	\$8,155,000		
TOTAL MAINTENANCE, CAPITAL and STUDIES										

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

UNION WATER SUPPLY SYSTEM Six Year Recommended Capital / Major Maintenance - December 4, 2020								
	2021	2022	2023	2024	2025	2026	Total Capital Expenditures 2018-2024	Comments
Union Area Water Supply System								
Studies and Programs								
Lake Erie HAB Monitoring Study - UWSS & U of Windsor	\$ 100,000	\$ 100,000	\$ 100,000				\$ 300,000	
Emergency Water Servicing Study - UWSS / WUC	\$ 115,000						\$ 115,000	
New Ruthven WTP Reservoir #3 Study	\$ 30,000						\$ 30,000	
Backup power generation / energy study	\$ 40,000						\$ 40,000	
UWSS Infrastructure Review and Master Plan Update	\$ 145,000						\$ 145,000	
Study, Engineering and Design for replacement of 12" WM to CBS		\$ 250,000					\$ 250,000	
Contingency (un-identified future studies)		\$ 50,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 650,000	
Subtotal Studies and Programs	\$ 430,000	\$ 400,000	\$ 250,000	\$ 150,000	\$ 150,000	\$ 150,000	\$ 1,530,000	
Low Lift								
Intake #1 & 2* (Note 5)				\$ 30,000	\$ 30,000		\$ 60,000	Maintenance
Intake # 2 (See Item 16 for more detail)							\$ -	Maintenance
Intake # 3, shoreline intake							\$ -	
Coarse Bar Screen (2)							\$ -	maintenance not required
Travelling Screen #1							\$ -	replaced in 2008
Travelling Screen #2							\$ -	Replaced in 2012
Travelling Screen #3		\$ 125,000					\$ 125,000	installed in 1994; upgrades planned for 2022
Pump Wells(2)							\$ -	cleaned & inspected annually
Low Lift Pump 1 *(Note 1)							\$ -	rebuilt in 2018
Low Lift Pump 2							\$ -	rebuilt in 2017
Low Lift Pump 3	\$ 35,000						\$ 35,000	rebuilt in 2016
Low Lift Pump 4		\$ 35,000					\$ 35,000	rebuilt in 2007
Low Lift Pump 5							\$ -	New in 2020
Low Lift Pump 6			\$ 35,000				\$ 35,000	rebuilt in 2008
Low Lift Pump 7							\$ -	rebuilt in 2008
Zebra Mussel Control System				\$ 20,000			\$ 20,000	Zebra mussel system upgraded in 2018
Pump discharge line							\$ -	
Low Lift Surge Tanks (2) and Compressor System *(Note 6)							\$ -	Ladder/safety system; 2 new compressors needed
Low Lift Roof Replacement	\$ 75,000						\$ 75,000	
Low Lift Diesel Generator						\$ 1,500,000	\$ 1,500,000	O & M Contracted to Genrep
Low Lift transformer, feed, switch gear, breaker upgrades	\$ 200,000						\$ 200,000	Electrical Transformer, switchgear etc is obsolete
General Building Maintenance & Equipment								
Grounds Improvements	\$ 170,000	\$ 75,000		\$ 35,000		\$ 100,000	\$ 380,000	upgrade of roadway to rear plant area
Ammonia Building Retrofits	\$ 125,000						\$ 125,000	
Fencing- Treatment Plant Property; Leamington Water Tower	\$ 20,000						\$ 20,000	
Upgrades to Pole Barn - Roof, electric, etc.		\$ 30,000					\$ 30,000	
							\$ -	
Clarification System								
Clarifier 1 -							\$ -	New Flow meter and control valve
Clarifier 2 -							\$ -	To be retrofitted to DAF in 2021
Clarifier 3							\$ -	New Flow meter and control valve
Clarifier 4							\$ -	To be retrofitted to DAF in 2022
Chemical System								
Coagulant Feed System			\$ 15,000			\$ 20,000	\$ 35,000	Upgraded in 2013

Coagulant Storage								\$ -	
Filter Aid System Upgrades	\$ 60,000							\$ 60,000	Needs a full upgrade
Carbon Feed System								\$ -	
Carbon Flushing Lines								\$ -	
Tank Mixers (3)								\$ -	System upgraded 2015
Recirc. Pump								\$ -	Inspection and refurbishment needed
Slurry Transfer Pumps (2)								\$ -	
Carbon Feed Pumps (4)		\$ 40,000				\$ 30,000		\$ 70,000	Larger pumps required
Carbon Scrubber System								\$ -	requires upgrade
Filtration								\$ -	
Filter 1								\$ -	Fully upgraded in 2012
Filter 2	\$ 300,000							\$ 300,000	Filter leaking; needs recoating and new underdrains
Filter 3								\$ -	Fully upgraded in 2013
Filter 4	\$ 300,000							\$ 300,000	Filter leaking; needs recoating and new underdrains
Filter 5								\$ -	New Media in 2017
Filter 6								\$ -	new media in 2018
Filter 7								\$ -	New Media in 2017
Filter 8								\$ -	new media in 2018
Turbidity Meters for Filter Backwash								\$ -	New items to optimize backwash process
Filter Meter Replacements								\$ -	New Filter meters for Filters 6-8
Valves								\$ -	Completed in 2016-2017
Removal of Microstrainers/ Install of Flooring								\$ -	Microstrainer No. 2 to be removed
Pumps								\$ -	
Backwash Pump 1 - Actuator upgrade								\$ -	new actuator
Backwash Pump 2						\$ 150,000		\$ 150,000	new in 1996
High Lift Pump 1 *(Note 2) Diesel Pump								\$ -	motor repairs 2018
High Lift Pump 2								\$ -	Replaced 2013
High Lift Pump 3								\$ -	rebuilt 2006
High Lift Pump 4								\$ -	rebuilt 2007
High Lift Pump 5								\$ -	rebuilt 2008
High Lift Pump 6								\$ -	new pump 2013
High Lift Pump 7	\$ 175,000							\$ 175,000	New pump installation in East Well
High Lift Pump 8								\$ -	new in 1996, rebuilt 2015
High Lift Pump 9						\$ 200,000		\$ 200,000	new in 1996
High Lift Pump No. 10								\$ -	New pump needed in newer high lift bay
High Lift Reservoirs and components			\$ 50,000					\$ 50,000	Upside down valve/piping corrosion protection
Wastewater Pumps (2)	\$ 50,000					\$ 75,000		\$ 125,000	Backup Wastewater Pump
HL Compressor 1								\$ -	Replacement
HL Compressor 2								\$ -	Replacement
HL Compressor 3		\$ 15,000						\$ 15,000	Replacement
Main Plant Reservoirs and Clearwells								\$ -	
Reservoir #1								\$ -	
Reservoir #2								\$ -	
Clearwells	\$ 20,000							\$ 20,000	New inlet Rotork for Clearwell #1
Main Plant Electrical								\$ -	
General Electrical upgrades	\$ 70,000							\$ 70,000	New Panel & Quick Connects for Portable Generator, etc.
New Generators for Treatment Plant				\$ 2,000,000	\$ 1,500,000			\$ 3,500,000	
Energy Monitoring and Management System - High Lift								\$ -	
Generator B Transfer Switch Automation								\$ -	Completed in 2014
Disinfection								\$ -	
Dehumidification								\$ -	
Chlorine Feed System								\$ -	
Ammonia Feed System								\$ -	installed new in 2002
Scrubber System								\$ -	new acid pump installed in 2009
SCADA /Communication/Security								\$ -	
Security System Install								\$ -	Keyless entry security system
System upgrade and Maintenance	\$ 150,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 30,000	\$ 300,000	PLC Upgrades needed for Low Lift, CBS and Gen B

UWSS Wide Communication System Improvements	\$ 35,000	\$ 30,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,000	\$ 145,000	improvements to existing communication system
Monitoring Equipment								
Turbidity Meter Replacement -							\$ -	For clarifiers #3 and #4 monitoring
Chlorine Analyzer Replacements							\$ -	4 new units needed
Blue Green Algae Monitoring Probe							\$ -	2 new units needed
Building Maintenance								
Facility Enhancements - General							\$ -	
Maintenance Shop Roof Replacement							\$ -	Roof Leaking and Needs to be Replaced
Windows & Doors Replacement							\$ -	asbestos like material present in window caulking, portion to
Admin Building	\$ 30,000			\$ 25,000		\$ 25,000	\$ 80,000	
Laboratory Upgrade	\$ 75,000						\$ 75,000	Laboratory to be moved to old microstrainer room and
New Equipment								
Portable Backup Generator for Low Lift, Water Towers, Emergency							\$ -	Purchased in 2016
Cottam Reservoir & Booster PS								
Reservoir							\$ -	Review Baffling to improve reservoir mixing
Booster Pump 1							\$ -	new in 1996
Booster Pump 2							\$ -	new in 1996
Booster Pump 3							\$ -	new in 1996
Booster Pump 4							\$ -	new in 1996
Surge Tanks (2)							\$ -	Insurance inspected in 2009, needs internal inspection
Compressor							\$ -	Replaced 2012
Reservoir Cover Regrading/Repairs							\$ -	Started in Dec. 2018/to be completed in 2019
Rechlorination system upgrades							\$ -	Rechlorination system is old and obsolete; needs upgrade
Passive Mixing System Install	\$ 75,000						\$ 75,000	Completed 2014
Distribution System								
Leamington Tower							\$ -	New Cathodic System installed in 2018
Albuna Tower		\$ 250,000					\$ 250,000	New Control Valve on 42inch for Albuna Control
Kingsville Tower	\$ 1,300,000						\$ 1,300,000	Safety Upgrades and Painting (2020)
Essex Tower	\$ 40,000						\$ 40,000	recoated and upgraded in 2018; new cathodic system 2021
Distribution System Maintenance	\$ 150,000	\$ 100,000					\$ 250,000	New Actuators for 1A/1B and other components
Master Water Meter Replacement/Upgrades	\$ 50,000						\$ 50,000	Cell Based reporting system
Wastewater Treatment System								
Wastewater Pond Upgrades		\$ 250,000					\$ 250,000	Clay liner improvements
Residuals Management system (see new capital works)							\$ -	
							\$ -	
NEW CAPITAL PROJECTS							\$ -	
Cash Funded Project							\$ -	
CO2 pH Adjustment System Install							\$ -	New in 2020
UV Disinfection - In-reservoir UV vault		\$ 250,000	\$ 4,500,000	\$ 3,000,000			\$ 7,750,000	New UV Disinfection System.
Dry Scrubber - Chlorine Gas system upgraded							\$ -	New in 2020
Pre-Treatment/clarification upgrades (DAF) design	\$ 4,500,000	\$ 4,000,000					\$ 8,500,000	Conversion of Clarifiers No 1 and 2 to DAF
Residuals management system upgrades		\$ 250,000		\$ 1,000,000	\$ 2,500,000		\$ 3,750,000	Residuals staging/ dewatering area and Polymer/thickening
Kingsville Water Tower Utility Building	\$ 150,000							
Admin Building upgrades, expansion and elevator			\$ 1,500,000				\$ 1,500,000	Office Admin area expansion and new elevator
Debt Funded Project								
New Reservoir #3		\$ 15,000,000	\$ 5,000,000				\$ 20,000,000	
Replacement of 12-inch Cottam Water Main				\$ 6,000,000	\$ 2,000,000		\$ 8,000,000	New 18-inch watermain to cottam
<i>Subtotal Capital and Major Maintenance</i>	\$3,505,000	\$980,000	\$150,000	\$2,160,000	\$1,580,000	\$2,150,000	\$ 10,525,000	
<i>Total Cash Funded New Capital Projects</i>	\$4,650,000	\$4,500,000	\$6,000,000	\$4,000,000	\$2,500,000	\$0	\$ 21,650,000	
TOTAL CAPITAL	\$8,155,000	\$5,480,000	\$6,150,000	\$6,160,000	\$4,080,000	\$2,150,000	\$ 32,175,000	
<i>Subtotal Studies and Programs</i>	\$430,000	\$400,000	\$250,000	\$150,000	\$150,000	\$150,000	\$ 1,530,000	
<i>Contingency</i>							\$ -	
TOTAL CAPITAL, STUDIES AND NEW CAPITAL	\$ 8,585,000	\$ 5,880,000	\$ 6,400,000	\$ 6,310,000	\$ 4,230,000	\$ 2,300,000	\$ 33,705,000	