PETERBOROUGH UTILITIES COMMISSION

June 1, 2021

COMMISSION AGENDA
2022:06:23

NOTICE & AGENDA

A MEETING OF THE PETERBOROUGH UTILITIES COMMISSION WILL BE HELD ON **THURSDAY, JUNE 23, 2022 AT 4:00 P.M.** THE MEETING WILL BE HELD VIRTUALLY USING TEAMS PLATFORM.

0.01 **CALL TO ORDER**

0.02 **DECLARATION OF PECUNIARY INTEREST**

1. CONSENT AGENDA

1.01 MINUTES - APRIL 21, 2022

1.02 OPERATING REPORTS - MARCH 2022
- APRIL 2022
- MAY 2022

2. REPORTS

2.01 INTERIM UNAUDITED FINANCIAL STATEMENTS FOR THE THREE MONTH PERIOD ENDED MARCH 31, 2022

2.02 ANNUAL DRINKING WATER REPORT

3. COMMUNICATIONS

4. NEW BUSINESS

5. DATE OF NEXT MEETINGS

OCTOBER 20, 2022

6. ADJOURNMENT

John Stephenson
President & CEO

MINUTES OF THE MEETING OF THE PETERBOROUGH UTILITIES COMMISSION HELD ON **THURSDAY, APRIL 21, 2022,** BEGINNING AT 4:00 P.M. THE MEETING WAS HELD VIRTUALLY USING MICROSOFT TEAMS.

0.01 **CALL TO ORDER**

0.02 **DECLARATION OF PECUNIARY INTEREST**

1. CONSENT AGENDA

1.01 MINUTES – MARCH 24, 2022

2. REPORTS

2.01 FISCAL 2021 AUDITOR'S REPORT

2.02 FISCAL 2021 AUDITED FINANCIAL RESULTS

2.03 WATER DEVELOPMENT CHARGES FOR THE YEAR ENDED DECEMBER 31, 2021

2.04 2021 MANAGEMENT REVIEW RESULTS FOR THE DRINKING WATER QUALITY MANAGEMENT SYSTEM

3. COMMUNICATIONS

4. NEW BUSINESS

5. DATE OF NEXT MEETING

JUNE 23, 2022

6. ADJOURNMENT

Chair

Read and approved this day of 2022

MINUTES OF THE MEETING OF THE PETERBOROUGH UTILITIES COMMISSION HELD ON **THURSDAY, APRIL 21, 2022,** BEGINNING AT 4:00 P.M. THE MEETING WAS HELD VIRTUALLY USING MICROSOFT TEAMS.

Present:	Mayor Diane Therrien, Chair Councillor Dean Pappas Councillor Gary Baldwin Councillor Steven Wright
Regrets:	Councillor Don Vassiliadis, Vice-Chair
Staff members present:	Mr. John Stephenson, President & CEO Mr. Kyle Davis, CFO Mr. Pat Devlin, Vice-President, Water Utility Services Ms. Patricia Skopelianos, Water Quality Manager Ms. Suzette Lake, Corporate Communications
Guests:	Ms. J. Park, BakerTilly

0.01 CALL TO ORDER

The Chair called the meeting to order at 4:00 p.m.

0.02 DECLARATION OF PECUNIARY INTEREST

None

1. <u>CONSENT AGENDA</u>

1.02 <u>MINUTES – MARCH 25, 2022</u>

It was moved by Councillor D. Pappas, seconded by Councillor G. Baldwin, and carried:

"THAT the minutes be approved."

Chair

Read and approved this day of 2022

2. REPORTS

2.01 FISCAL 2021 AUDITOR'S REPORT

Ms. J. Park provided an overview of the auditor's report, she commented that the audit went very well, and there were no issues to report. She wanted to note that going forward there will be a new section added to the audit for asset retirement obligations.

Councillor Wright joined the meeting at 4:01 p.m.

The Commission commented that PUC staff are excellent employees and asked how the overall audit process went. Ms. J. Park commented that there was excellent cooperation from staff and a very clean audit. Management responded that working from home during this process went very smoothly and it was great working with Ms. J. Park and her team.

It was moved by Councillor D. Pappas, seconded by Councillor G. Baldwin and carried:

"THAT the report be received for information."

2.02 FISCAL 2021 AUDITED FINANCIAL RESULTS

The CFO provided an overview of the report.

The Commission asked with inflation and the bank of Canada rate increases, if this could this cause any challenges going forward. Management responded that there are no new debts budgeted for the current year and the current cash forecast does not anticipate any in the next year either.

The Commission asked with the approved rate increase if there were any feedback/questions from customers. Management responded that through customer service there has been no comments from customers regarding the increase.

It was moved by Councillor G. Baldwin, seconded by Councillor S. Wright and carried:

"THAT the draft audited financial statements for the year ended December 31, 2021, be approved."

Chair

Read and approved this day of 2022

2.03 WATER DEVELOPMENT CHARGES
FOR THE YEAR ENDED DECEMBER 31, 2021

It was moved by Councillor D. Pappas, seconded by Councillor G. Baldwin and carried:

"THAT the report be received for information."

2.04 2021 MANAGEMENT REVIEW RESULTS
FOR THE DRINKING WATER QUALITY MANAGEMENT SYSTEM

The Commission thanked management for the excellent results and asked if through the audit process, if any of the delayed items will be completed at year end or will these continue into 2023. Management responded that items are tracked and any items in review, should be completed by June. Typically, any incomplete items are completed within the same year.

It was moved by Councillor S. Wright, seconded by Councillor G. Baldwin and carried:

"THAT the report be received for information."

3. COMMUNICATIONS

None

4. NEW BUSINESS

5. DATE OF NEXT MEETINGS

JUNE 23, 2022

6. ADJOURNMENT

The Chair accepted a motion of adjournment by Councillor D. Pappas seconded by Councillor S. Wright at 4:14 p.m.

Chair

Read and approved this day of 2022

PETERBOROUGH UTILITIES COMMISSION
REPORT

1.02

April 11, 2022

COMMISSION AGENDA
2022:06:23

OPERATING REPORT – March 2022

INFORMATION ITEM

The following monthly operating report is provided for the Commission's information.

Prepared by: Ginette Power

Submitted by: Patrick Devlin, Vice-President Water Utility Services

Approved for Submission by: _____
President & CEO

Management Discussion

Following is the Operating Report for the month of March 2022 for the various departments:

Water Distribution Department

	March 2022	March 2021	Increase Or Decrease
Services Installed	0	0	0
Services Repaired	2	6	-4
Services Replaced	0	0	0
Services Cut-Off	0	0	0
Services Lowered or Insulated	0	0	0
Service Valves and Posts Repaired	2	6	-4
Fire Hydrants Installed	0	0	0
Fire Hydrants Replaced	0	0	0
Fire Hydrants Repaired	1	0	+1
Mainline Valves Installed	0	0	0
Mainline Valves Replaced	0	0	0
Mainline Valves Repaired	0	0	0
Mainline Valve Box Repairs	0	0	0

Customer Service Interruptions

Clonsilla Avenue @ Goodfellow Road	Broken main	4.15 hrs	7
Sherbrooke Street @ Montague Court	Broken main	2.3 hrs	30
767 Parkhill Rd W	Service repair	0.2 hrs	6
310 Boswell Avenue	Service repair	0	0

Two hundred and ninety-three backflow tests and 15 backflow prevention surveys were completed.

Staff attended Confined Space Training.

Staff received training on manual water reads.

Air Valve chamber checks were completed.

Water Treatment Plant and Pumping Stations

	March 2022	March 2021	Increase Or Decrease	%
Water Pumpage (ML)				
Total Pumpage (ML)	789.8	760.8	29.0	4%
Rate of Pumpage (ML per day)				
Maximum Day	30.3	32.1	-1.8	-6%
Average Day	25.4	24.5	0.9	4%
Chemical Treatment (Average) (Milligrams per Litre)				
Contact Tank – Chlorine	2.2	2.1	0.1	5%
Coagulant (Alum)	54.2	52.4	1.8	3%
Sodium Hydroxide	5.0	5.3	-0.3	-6%
Fluoride – Total	0.6	0.7	-0.1	-14%
Water °C	0	1.8	-1.8	
Precipitation (mm)	46.8	50.6	-3.8	

Water Treatment Plant

Annual filter maintenance on the Water Treatment Plant's eleven filters was completed.

Water Treatment Plant electricians continued to update the arc flash assessment for the WTP and Pumphouse.

Sodium Hydroxide Feed System:

a. The diaphragm flow control valve for the carrier water was removed.
b. A new ball valve was installed upstream prior to chemical mixing with the carrier water in order to avoid buildup which was occurring in the old setup.

Alum tank B was isolated and drained in order to repair a leaking gasket.

Annual preventative maintenance was performed on the WTP's main chlorine feed system. Maintenance entails rebuilding chlorinators, injectors, and the automatic switchover unit.

Staff participated in a few mandatory training sessions.

Pumphouse

Water wheel #4 was converted back to a generator in time for spring river flows.

Riverview Park and Zoo

The outdoor zoo area re-opened on Friday March 11. Many extra barriers had been put in place to ensure that visitors maintained an appropriate distance from the animals. While visitors were not required to wear masks, they were encouraged to do so when in the animal areas.

The Park and Zoo continued to implement additional/augmented measures in response to the impact of COVID variants and in compliance with guidelines from the local Medical Officer of Health and PUG corporate policy.

In March, Park and Zoo staff worked with Human Resources on the recruiting of our seasonal/student staff.

A new security system was installed in the train tunnel building in response to recent trespassing and vandalism issues.

No facility rental bookings or other on-site events were booked for March as part of our ongoing response to the COVID-19 pandemic.

Fundraising and revenue generation activity in March included Animal Adoption revenue of $1,150, Website Donations of $2,253, Train Bench Seat Sponsorship of $2,500 sold, and Gift Shop sales of $335.

Notable happenings on the development side of things included a $25,000 sponsorship of a train ride passenger coach by the Peterborough-Kawartha Rotary Club and our first sponsorship of a train passenger bench at $2,500, by a private individual. We have also submitted an application to the Canada Summer Jobs program for $89,000 of support toward our student wages.

Education program activities included the ongoing delivery of Pathway to Stewardship and Kinship sessions and development of a video series for virtual learning in partnership with Fleming students from the Museum Curatorship Course and Heritage Course.

In March, changes to the animal collection were limited to the deaths of a plated lizard (complications arising from neurological problems), a red-necked wallaby joey (undetermined) and a Barbary sheep (complications from cystic nodular disease).

Animal health activities in March included the annual health exams and processing of our caribou, routine treatments of the otters, as well as bi-weekly rounds with Dr. Sallaway.

There were 1,372 enrichment activities performed with a variety of species within the collection during the month. There were 13 training sessions involving 3 species.

In March, Park and Zoo staff were busy with preparing for our busy season, helping with the recruiting of our seasonal staff, as well as routine maintenance and animal care. Staff also continued to work on the 2022 capital program.

Scheduled Public Hours

Weekday and Weekends

***The Park and Zoo outdoor area re-opened on Friday March 11.

PARK PROPERTY	ZOO EXHIBITS	SNACK BAR	TRAIN RIDE
Open	Open***	Closed	Closed

GUEST SERVICES	NORTH WASHROOM	SOUTH WASHROOM	PICNIC AREA & WASHROOM
Closed	Open***	Closed	Closed

Budget and Financial Implications

There were no significant changes in expenditures that would upset the budget or have financial implications.

Risk Evaluation

There were no significant changes in risk profile during this operating period.

Attachments: Nil

PETERBOROUGH UTILITIES COMMISSION
REPORT

1.02

May 11, 2022

COMMISSION AGENDA
2022:06:23

OPERATING REPORT – April 2022

INFORMATION ITEM

The following monthly operating report is provided for the Commission's information.

Prepared by: Ginette Power

Submitted by: Patrick Devlin, Vice-President Water Utility Services

Approved for Submission by: _____
President & CEO

Management Discussion

Following is the Operating Report for the month of April 2022 for the various departments:

Water Distribution Department

	April 2022	April 2021	Increase Or Decrease
Services Installed	0	1	-1
Services Repaired	4	6	-2
Services Replaced	0	1	-1
Services Cut-Off	0	0	0
Services Lowered or Insulated	0	0	0
Service Valves and Posts Repaired	6	13	-7
Fire Hydrants Installed	0	0	0
Fire Hydrants Replaced	0	0	0
Fire Hydrants Repaired	4	4	0
Mainline Valves Installed	0	0	0
Mainline Valves Replaced	0	0	0
Mainline Valves Repaired	0	0	0
Mainline Valve Box Repairs	0	0	0

Customer Service Interruptions

Address	Reason	Length of Interruption	No. Of Customers Affected
Charlotte Street @ Bethune Street	Broken main	24 hrs	1

Two hundred and twenty-four backflow tests and 8 backflow prevention surveys were completed.

Staff repaired a service leak at 72 Regent Street in Lakefield.

Operators began sewer manhole inspections in Woodland Acres.

Water Treatment Plant and Pumping Stations

	April 2022	April 2021	Increase Or Decrease	%
Water Pumpage (ML)				
Total Pumpage (ML)	780.1	749.2	30.9	4%
Rate of Pumpage (ML per day)				
Maximum Day	27.9	29.0	-1.1	-4%
Average Day	26.0	24.9	1.1	4%
Chemical Treatment (Average) (Milligrams per Litre)				
Contact Tank – Chlorine	2.0	2.1	-0.1	-5%
Coagulant (Alum)	53.6	50.8	2.8	6%
Sodium Hydroxide	4.3	5.4	-1.1	-20%
Fluoride – Total	0.7	0.7	0	
Water °C	2.2	8.8	-6.6	
Precipitation (mm)	56.8	66.7	-9.9	

Water Treatment Plant

Oil cooler on Zone 2 Pump #1 angle drive was replaced with a new unit.

The angle drive on Low lift #3 was removed and the maintenance team replaced the bearings in the drive. The drive shaft for the same pump was sent away to be balanced.

Annual sedimentation basin maintenance was started with Sedimentation Basins 1 to 2 Maintenance staff continued with the capital project of replacing filter turbidity meters with new Swan units.

Staff participated in a few mandatory training sessions.

Pumphouse

The generator was reinstalled after having a complete rebuild performed on it by a Contractor.

Reservoirs and Pumping Stations

Pressure relief valves at all pumping stations were cleaned and rebuilt.

Towerhill Reservoir: The Depolux chlorine analyzer was replaced with a prominent chlorine analyzer.

Riverview Park and Zoo

The Park and Zoo continued to implement additional/augmented measures in response to the impact of COVID variants and in compliance with guidelines from the local Medical Officer of Health and PUG corporate policy. Working arrangements were modified in accordance with new, more relaxed capacity limits.

Recruiting for summer staff carried on throughout April. Attracting and retaining suitable candidates proved to be difficult due to a variety of factors including the Province's driver's test backlog and the lack of competitiveness of our current student salaries.

In April, Park and Zoo staff prepared for the arrival of our seasonal/student staff, acquiring materials and supplies, setting up work areas/workstations, arranging training and coordinating their orientation sessions.

The Park and Zoo hosted students from Fleming College along with Educators from Otonabee Conservation for a conservation/restoration program at the Riverview Creek.

No facility rental bookings or other on-site events were booked for April as part of our ongoing response to the COVID-19 pandemic.

Fundraising and revenue generation activity in April included Animal Adoption revenue of $550.00, general donations of approximately $16,800. Other notable support included the following donations:

- Kiwanis Club of Scott: $6,500 for Super Slide Repair
- Knights of Columbus: $5,000 for train Campaign

Notable happenings on the development side of things included the successful acquisition of $49,000 from the Canada Summer Jobs program for $89,000 of support toward our student wages.

Education program news included the ongoing delivery of Pathway to Stewardship and Kinship sessions and that our May and June education programs are already fully booked.

In April, changes to the animal collection included the death of a red-necked wallaby joey and the acquisition of a green water dragon a common boa constrictor, and 41 Japanese medaka fish.

Park and Zoo Animal Care staff also assisted Ontario Animal Welfare Services with the confiscation of several animals (exotics) from a facility. We also have some of the confiscated animals (four ring-tailed lemurs and three Peccaries) temporarily in our care until their long-term disposition is confirmed.

There were 1,352 enrichment activities performed with a variety of species within the collection during the month. There were 21 training sessions involving 3 species.

In April, Park and Zoo staff were busy with preparing for our busy season, helping with the recruiting of our seasonal staff, as well as routine maintenance and animal care. Staff also continued to work on the 2022 capital program.

Scheduled Public Hours

Weekday and Weekends

PARK PROPERTY	ZOO EXHIBITS	SNACK BAR	TRAIN RIDE
Open	Open***	Closed	Closed

GUEST SERVICES	NORTH WASHROOM	SOUTH WASHROOM	PICNIC AREA & WASHROOM
Closed	Open***	Closed	Closed

Budget and Financial Implications

There were no significant changes in expenditures that would upset the budget or have financial implications.

Risk Evaluation

There were no significant changes in risk profile during this operating period.

Attachments: Nil

PETERBOROUGH UTILITIES COMMISSION
REPORT

1.02

June 8, 2022

COMMISSION AGENDA
2022:06:23

OPERATING REPORT – MAY 2022

INFORMATION ITEM

The following monthly operating report is provided for the Commission's information.

Prepared by: Ginette Power, Administrative Assistant

Submitted by: Patrick Devlin, Vice-President Water Utility Services

Approved for Submission by: _____
President & CEO

Management Discussion

Following is the Operating Report for the month of April 2022 for the various departments:

Water Distribution Department

	May 2022	May 2021	Increase Or Decrease
Services Installed	0	1	-1
Services Repaired	4	6	-2
Services Replaced	2	7	-5
Services Cut-Off	0	0	0
Services Lowered or Insulated	0	0	0
Service Valves and Posts Repaired	13	10	+3
Fire Hydrants Installed	0	0	0
Fire Hydrants Replaced	0	1	0
Fire Hydrants Repaired	7	0	+7
Mainline Valves Installed	0	0	0
Mainline Valves Replaced	0	0	0
Mainline Valves Repaired	0	0	0
Mainline Valve Box Repairs	0	0	0

Customer Service Interruptions

Address	Reason	Length of Interruption	No. Of Customers Affected
723 Rye Street	Broken main	48 hrs	0
435 Edison Avenue	Service repair	0.3 hrs	1

494 Aylmer Street N	Service repair	0.3 hrs	1
597 Weller Street	Service repair	0.15 hrs	21
93 Rubidge Street	Service repair	1 hr	1

Four hundred and seventeen backflow tests and 12 backflow prevention surveys were completed.

Staff attended Mueller hydrant training.

Annual water main flushing continued.

Water Treatment Plant and Pumping Stations

	May 2022	May 2021	Increase Or Decrease	%
Water Pumpage (ML)				
Total Pumpage (ML)	888.0	838.7	49.3	6%
Rate of Pumpage (ML per day)				
Maximum Day	33.4	37.7	-4.3	-4%
Average Day	28.6	27.9	0.7	3%
Chemical Treatment (Average) (Milligrams per Litre)				
Contact Tank – Chlorine	2.6	2.3	0.3	13%
Coagulant (Alum)	48.5	47.2	1.3	3%
Sodium Hydroxide	4.9	4.2	0.7	17%
Fluoride – Total	0.8	0.7	0.1	14%
Water ºC	16.0	14.9	1.1	
Precipitation (mm)	57.2	16.4	40.8	

Water Treatment Plant

Annual sedimentation basin maintenance continued on Sedimentation Basins 4, 5, and 6.

Security hatch alarms around the WTP were tested and replaced as needed.

Maintenance staff continued the capital project of replacing filter turbidity meters with new Swan units.

The pressure regulating valve on the WTP's natural gas generator was replaced with a new unit.

Staff were deployed to the pumping station and reservoirs following the storm to deal with power outages throughout the city.

Staff participated in mandatory training sessions.

Pumphouse

Replacement of hydraulic lines and electrical sensor cords was completed on the logging machine lifting booms.

Maintenance staff isolated and disconnected the gearbox for generator #2. The gearbox is going to be shipped out and completely rebuilt as per capital projects.

Reservoirs and Pumping Stations

Clonsilla Pumping Station: Pump #1 was isolated from the distribution system and fully disconnected in order to remove it and ship off for a complete rebuild.

Riverview Park and Zoo

The Park and Zoo continued to implement additional/augmented measures in response to the impact of COVID variants and in compliance with guidelines from the local Medical Officer of Health and PUG corporate policy. Working arrangements were modified in accordance with new, more relaxed capacity limits.

Our student/summer staff started their season on May 2 with their first two weeks at the Park and Zoo being focused on orientation and safety training.

The Park and Zoo passed our annual TSSA inspection of the miniature train ride and successfully obtained our Amusement Device Operating Permit on Thursday May 19.

Park and Zoo staff, PUC management, local VIPs, major donors, sponsors and the media attended an official launch event (May 20) for the capital campaign to replace the train ride locomotive and passenger cars.

On May 21, the Park and Zoo hosted a “Grand Reopening Event”, celebrating the first operation of the miniature train ride, snack bar and other amenities since 2019. The planned event included yoga in the park, story time at the gazebo, a bird friendly walk, outdoor market/vendor booths, and a free concert. Unfortunately the plans for the day were cut short by the derecho storm that arrived that afternoon.

On the afternoon of May 21 the Park and Zoo was hit by the devastating derecho storm that swept through Peterborough and central Ontario. The zoo was heavily impacted with many trees knocked down, broken or damaged, and fencing severely damaged. The Park and Zoo was busy with visitors and our staff implemented emergency procedures, sheltering visitors in buildings and supporting the reuniting of family members separated by the storm. There were no serious injuries to visitors, staff or the animals. There were no animal escapes.

Following the storm, the Park and Zoo was closed from the afternoon of Saturday May 21 until the morning of Saturday May 28. RPZ staff, Water Department staff, crews from our tree services and fencing contractors worked tirelessly during this time to make the Park and Zoo safe, clean up all the trees, branches and debris, and to repair most of the damage.

In May, the Park and Zoo hosted virtual Water Wednesday education sessions, supporting the delivery of the 2022 Peterborough Children’s Water Festival.

In May, changes to the animal collection were limited to the acquisition of a male leopard tortoise.

There were 1,048 enrichment activities performed with a variety of species within the collection during the month. There were 32 training sessions involving 4 species.

In May, Park and Zoo staff were busy with training new staff, preparing for the launch of our seasonal services, and arrangements for the special reopening event as well as the post-storm cleanup.

Scheduled Public Hours
Weekday and Weekends

PARK PROPERTY	ZOO EXHIBITS	SNACK BAR	TRAIN RIDE
Open as of Victoria Day***	Open***	Open as of Victoria Day***	Open as of Victoria Day***

GUEST SERVICES	NORTH WASHROOM	SOUTH WASHROOM	PICNIC AREA & WASHROOM
Open as of Victoria Day***	Open***	Open as of Victoria Day***	Open as of Victoria Day***

***** The Park and Zoo was closed from the afternoon of Saturday May 21 until the morning of Saturday May 28 due to the impact of the derecho storm.**

Budget and Financial Implications

There were no significant changes in expenditures that would upset the budget or have financial implications.

Risk Evaluation

There were no significant changes in risk profile during this operating period.

Attachments: Nil

PETERBOROUGH UTILITIES COMMISSION
REPORT

June 8, 2022 2.01

COMMISSION AGENDA
2022:06:23

INTERIM UNAUDITED FINANCIAL STATEMENTS
FOR THE THREE MONTH PERIOD ENDED MARCH 31, 2022

INFORMATION ITEM

The Peterborough Utilities Commission financial statements for the three month period ending March 31, 2022 are presented for the Commission's information.

Prepared by: Kyle Davis, CFO

Submitted by: Kyle Davis, CFO

Approved for Submission by: _____
President & CEO

BUSINESS OF THE PETERBOROUGH UTILITIES COMMISSION

The Peterborough Utilities Commission ("PUC") is responsible for supplying Peterborough residents and businesses with safe, clean water. Peterborough has a plentiful supply of source water from the Otonabee River. This water is treated in a government-inspected facility before being distributed throughout the City. Each year the external and PUC labs test thousands of water samples to ensure that Peterborough's drinking water is safe and aesthetically pleasing. About twenty thousand tests are conducted each year to ensure the drinking water surpasses health-related standards.

The PUC Commission also provides the Riverview Park and Zoo ("RP&Z") for the enjoyment and education of the public. The RP&Z strives to provide the citizens of Peterborough with an outstanding recreational and educational facility located in a park setting and endeavors to create an environment suitable for conservation and preservation of wildlife and parkland.

SUMMARY

Selected interim comparative financial data is presented in the following tables:

Financial Activities						
	Three months ended March 31,				2021	% of
(unaudited, $ thousands)	2022	2021	$ Change	% Change	Budget	Budget
Revenues	4,901	4,714	187	4%	22,062	22%
Expenditures						
Operating	2,841	2,737	104	4%	13,189	22%
Amortization	1,595	1,575	20	1%	6,380	25%
Interest	93	93	0	0%	370	25%
	4,529	4,405	124	3%	19,939	23%
Surplus	372	309	63	20%	2,123	18%

Total revenue has increased by $187 thousand compared to the prior year primarily because of an increase in water revenue during the first quarter. As the first quarter of 2021 included pandemic related lockdowns, revenues for 2022 represent a return to normal operations.

Expenditures, while trending at or below budget expectations, are 3% above the prior year. This increase is a combination of labour increase, inflationary pressure on third party costs and the return to more normal operations.

Financial Position		
	As at	
(unaudited, $ thousands)	**March 31, 2022**	**December 31, 2020**
Cash	23,382	26,925
Other financial assets	5,495	6,028
Liabilities	(17,861)	(23,145)
Net financial assets	11,016	9,808
Capital assets	119,327	120,539
Other non-financial assets	985	609
Net non-financial assets	120,312	121,148
Accumulated surplus	131,328	130,956

FUND ACCOUNTING

The following summary represents the consolidated results of the Restricted Reserve, Contributed Capital and Current funds.

Surplus Summary			
	Three months ended March 31,		**2022**
(unaudited, $ thousands)	**2022**	**2021**	**Budget**
Restricted Reserve	201	225	1,555
Contributed Capital	0	24	300
Operating	556	383	1,818
Riverview Park and Zoo	(385)	(323)	(1,550)
Surplus	372	309	2,123

The surplus is $372 thousand at March 31 and is budgeted to be $2.12 million by year end. The components of the surplus are discussed in the following paragraphs.

(a) Restricted Reserve Funds Annual Surplus

Restricted reserve funds surplus for the three month period ended March 31, 2022 is $201 thousand, compared to $225 thousand during 2021 and a total year budget amount of $1.56 million.

The Restricted funds balance consists of three specific reserve funds. Revenues received for these funds are mainly derived from water revenues, developer activity or donations.

The following table provides the source of the restricted funds, the fund balances, and the percentage of actual to budget.

Composition of Restricted Funds Annual Surplus					
	Three months ended March 31,		2022	%	Funding Source
(unaudited, $ thousands)	2022	2021	Budget	Budget	
Water Treatment Plant	200	200	854	23%	4.167% of water revenues, plus interest
Development Charges Act	0	4	667	-	Developer charges
Riverview Park and Zoo	1	21	34	3%	Donations, SOGR contributions
	201	225	1,555	13%	

Funds restricted under the Water Treatment Plant fund are the same as the prior year, and 23% of the total year budget.

Through the first quarter, the Company has yet to receive any development charges. The budget anticipated $667 thousand in development charges to be received during the year and our current projections have not changed as the next phase of the Lily Lake West subdivision remains on target.

Donations and related interest revenue received during the first three months of 2022 of $1 thousand is 3% of the annual budget, with the majority expected during the summer operating months of the Zoo.

(b) Contributed Capital Fund

The PUC has received no capital contributions during the three month period ended March 31, 2022 compared to $24 thousand in 2021. The total year budget is $300 thousand.

The Contributed Capital fund includes frontage charges, distribution system assumed from developers and cost recovery from system installations. The value of the systems installed by developers is recorded as revenue in the year in which the PUC assumes ownership. The majority of this account is typically recorded at year-end.

(c) Operating Fund

The Operating fund surplus for the three month period ended March 31, 2022 is $556 thousand compared to $383 thousand in 2021. The increase is due to the decrease in water revenue revenues during the first quarter, offsetting increased operating expenditures compared to the prior year.

(d) Operating Fund – Riverview Park & Zoo

Net operating activities in the Riverview Park and Zoo accounted for $385 thousand in 2022 compared to $323 thousand in 2021.

Revenues:

Revenue from all sources for the three months ended March 31, 2022 of $4.90 million, compared to $4.71 million in 2021.

Revenue					
	Three months ended March 31,			2022	% of
(unaudited, $ thousands)	2022	2021	$ Change	Budget	Budget
Sale of Water	4,436	4,207	229	18,845	24%
Capital installation charges	0	24	(24)	300	0%
Development charges	0	4	(4)	667	0%
Fire Protection	163	163	0	650	25%
Sewer surcharge billings	109	107	2	439	25%
Riverview Park & Zoo	5	5	0	301	2%
Riverview Park & Zoo - donations	1	19	(18)	25	4%
Interest	39	42	(3)	160	24%
Electricity	71	70	1	350	20%
Other	77	73	4	325	24%
	4,901	4,714	187	22,062	22%

Revenue from the sale of water of $4.44 million is $229 thousand higher than the prior year. Water revenues are directed to the operating fund, 95.833%, and to the WTP Reserve fund, 4.167%.

Water consumption throughout the first quarter has increased by 2.4% over the prior year as the lockdown measures in the first quarter of 2021 negatively impacted commercial demand.

Other revenue has remained consistent with the prior year, with the following notable items:

- No development activities occurred in the first quarter. This is consistent with expectations as development typically picks up prior to the normal construction season.
- Revenue from the Riverview Park and Zoo was minimal as the Zoo was closed for the first quarter. As operations are typically minimal during the first quarter even when fully operational it is not expected that this will have a significant impact on expected revenues.

Expenses:

Expenses of $4.53 million year-to-date are $124 thousand above the prior year and 23% of the total budget.

Expenditures						
	Three months ended March 31,				2022	% of
(unaudited, $ thousands)	2022	2021	$ Change	% Change	Budget	Budget
Water treatment and storage	928	901	27	3%	4,782	19%
Distribution systems	498	632	(134)	-21%	2,394	21%
Administrative	405	349	56	16%	1,471	28%
Support Services	620	527	93	18%	2,691	23%
Riverview Park and Zoo	390	328	62	19%	1,851	21%
Interest	93	93	0	0%	370	25%
Amortization	1,595	1,575	20	1%	6,380	25%
	4,529	4,405	124	3%	19,939	23%

(a) Water Treatment and Storage

The total cost of water treatment and storage is $928 thousand compared to $901 thousand for the first three months of 2021, and is 19% of the annual budget. These results are in line with typical expenditures at the water treatment plant, when larger maintenance projects are scheduled for later in the year.

(b) Distribution Systems

Distribution expenses of $498 thousand are 21% of budget, and $134 thousand lower than 2021. While we do continue to experience inflationary pressure on materials, repair and maintenance costs were lower in 2022 than in 2021. The department also experienced savings in the first quarter as pandemic restrictions continued to result in a deferral of items such as conferences and non-mandatory training sessions. As these restrictions began to decrease post quarter end, it is expected that these costs will trend towards budget over the remainder of the year.

(c) Administrative

Administrative expenses made up of primarily building rent, insurance and equipment rental/software fees are $56 thousand above the prior year and 28% of the annual budget with no unexpected budget variances.

(d) Support Services

Support services costs are $93 thousand above the prior year and 23% of budget. It is expected that most of these departments will trend below budget during the first quarter as many of the amounts budgeted for in the departments have not yet been incurred.

(e) Riverview Park and Zoo

The expenses to operate the Riverview Park & Zoo are $390 thousand compared to $327 thousand in 2021 and are 21% of the annual budget.

The Park and Zoo's 2022 operating budget planned for a normal summer operating season for the Zoo following two years closed to the public as a result of the pandemic. The increase of costs during the quarter represent both inflationary increases in costs as well as costs associated with the planned reopening of the Zoo.

(f) Interest expense

Interest expense of $93 thousand is 25% of budget based on the scheduled repayment of the debentures.

(g) Amortization

Amortization for the three month period ended March 31, 2022 of $1.60 million is based on the capital expenditures budget of $9.60 million for the year.

Liquidity and Cash Balance:

Cash at the end of the period is $23.38 million, a decrease of $3.54 million from the January 1 opening cash balance of $26.93 million.

Changes in Cash Position			
	Three months ended March 31,		2022
(unaudited, $ thousands)	2022	2021	Budget
Cash, beginning of period	26,925	23,494	21,544
Cash provided by operating activities	(2,933)	1,276	8,378
Cash (used) in investing activities	(383)	(137)	(9,303)
Cash provided by (used in) financing activities	(227)	(220)	(1,057)
Cash, end of period	23,382	24,413	19,562

The fund cash balances as of March 31, 2022 are as follows:

Fund Balance			
	Three months ended March 31,		2022
(unaudited, $ thousands)	2022	2021	Budget
Current	11,970	13,873	11,467
Restricted:			
Water treatment plant	10,153	9,316	6,797
Development charges act	0	4	-
Riverview Park and Zoo	1,259	1,220	1,298
Total Restricted	11,412	10,540	8,095
Total Cash	23,382	24,413	19,562

Operating Activities

Cash used by operations for the first three months was $2.93 million compared to generating $1.28 million in 2021. The difference was primarily attributable to the change in non-cash working capital as several large payables were made early in 2022. These amounts were anticipated with cash balances remaining in line with expectations, and all other amounts consistent with prior year results.

Investing Activities

Cash used for capital expenditures was $383 thousand in 2022 compared to $161 thousand for the same period in 2021. The following table summarizes the capital expenditures for the period.

Capital Expenditures				
	Three months ended March 31,		2022	% of
(unaudited, $ thousands)	2022	2021	Budget	Budget
Water treatment plant	34	-	466	7%
Pumphouse and dam	10	-	1,340	1%
Booster pumping stations	0	-	30	-
Reservoirs and storage tanks	2	8	420	0%
Trunkmains	19	1	4,475	0%
Distribution mains	17	41	260	7%
New water services	0	1	192	-
Rehabilitation of distribution system	140	67	1,685	8%
Hydrants	0	-	67	-
Meters	129	20	344	38%
Riverview Park & Zoo	32	23	324	10%
	383	161	9,603	4%

Capital expenditures are in line with both prior years amounts and total expectations for the year to date. It is anticipated that the larger capital projects will begin during the summer months.

Financing Activities

During the first three months of 2022, the PUC reduced its long-term debt facilities by $227 thousand. No advances were taken during the first quarter and none are budgeted for the year.

Attachments:

- Quarterly Certification
- PUC unaudited financial statements for the three months ended March 31, 2022

QUARTERLY CERTIFICATION

With respect to Peterborough Utilities Commission,

We hereby certify that:

1. Statutory Obligations

   As of March 31, 2022 that all statutory obligations required to be paid or actions required to be performed, have been paid, performed or submitted to the relevant statutory bodies or agencies. To the best of our knowledge there are no material regulatory or legal actions with respect to these matters.

2. Health and Safety, Litigation

   As of March 31, 2022 and to the best of our knowledge there are no material violations of Health and Safety regulation or law, or material matters of litigation that have not been disclosed.

3. Safe Drinking Water Act

   As of March 31, 2022 and to the best of our knowledge there are no violations of the Safe Drinking Water Act, and the Commission has been provided with the necessary information required to fulfill their Standard of Care under the Act.

John Stephenson
President and CEO

Kyle Davis
CFO

Pat Devlin
VP Water Utility

Dated: June 14, 2022

PETERBOROUGH UTILITIES COMMISSION

FINANCIAL STATEMENTS

Unaudited for the three months ended March 31, 2022

TABLE OF CONTENTS

PETERBOROUGH UTILITIES COMMISSION
STATEMENT OF FINANCIAL POSITION

Unaudited as at March 31, 2022
($'s in thousands)

	31-Mar 2022	31-Dec 2021
ASSETS		
FINANCIAL ASSETS		
Cash	23,382	26,925
Accounts receivable		
Customer accounts	1,201	1,179
Sewer surcharge	1,307	1,304
Sundry	290	370
Unbilled revenue on customer accounts	1,385	1,579
Unbilled sewer surcharge	1,312	1,596
	28,877	32,953
LIABILITIES		
Accounts payable and accrued charges	955	5,891
Sewer surcharge payable	3,552	3,650
Debenture debt	12,946	13,173
Customer deposits	408	431
	17,861	23,145
NET FINANCIAL ASSETS	**11,016**	**9,808**
NON-FINANCIAL ASSETS		
Inventories	582	609
Tangible capital assets	119,327	120,539
Prepaid expenses	403	-
	120,312	**121,148**
ACCUMULATED SURPLUS	**131,328**	**130,956**

PETERBOROUGH UTILITIES COMMISSION
STATEMENT OF FINANCIAL ACTIVITIES AND CHANGES IN ACCUMULATED SURPLUS

Unaudited for the three months ended March 31, 2022
($'s in thousands)

	Mar 31 2022	Mar 31 2021	2022 Budget	Actual % of Budget
REVENUES				
Revenue from sale of water	4,436	4,207	18,845	24%
Capital installation charges	-	24	300	-
Development charges	-	4	667	-
Contributions to RP&Z Reserve Funds	1	19	25	4%
Fire protection	163	163	650	25%
Sewer surcharge billings	109	107	439	25%
Riverview Park and Zoo - (Schedule E)	5	5	301	2%
Interest income	39	42	160	24%
Other	77	73	325	24%
Electricity	71	70	350	20%
	4,901	4,714	22,062	22%
EXPENDITURES				
Water treatment and storage (Schedule A)	928	901	4,782	19%
Distribution systems (Schedule B)	498	632	2,394	21%
Administrative (Schedule C)	405	349	1,471	28%
Support Services (Schedule D)	620	527	2,691	23%
Riverview Park and Zoo (Schedule E)	390	328	1,851	21%
Interest	93	93	370	25%
Amortization	1,595	1,575	6,380	25%
	4,529	4,405	19,939	23%
SURPLUS	372	309	2,123	18%
OPENING ACCUMULATED SURPLUS	130,956	128,227	130,561	100%
CLOSING ACCUMULATED SURPLUS	131,328	128,536	132,684	99%
SUMMARY OF SURPLUS BY ACTIVITY				
Operating Activities	556	383	1,818	2,458
Operating Activities - RP&Z	(385)	(323)	(1,550)	(1,593)
Restricted Reserve Fund Activities	201	225	1,555	1,747
Contributed Capital Activities	-	24	300	100
SURPLUS FOR THE PERIOD	372	309	2,123	2,712

PETERBOROUGH UTILITIES COMMISSION
STATEMENT OF CHANGES IN FINANCIAL POSITION

Unaudited for the three months ended March 31, 2022
($'s in thousands)

	Mar 31 2022	Mar 31 2021	2022 Budget
OPERATIONS			
Surplus	372	309	2,123
Add: items not requiring cash			
Amortization	1,595	1,575	6,380
Capital installation charges	-	(24)	(300)
Increase/(decrease) in customer deposits	(23)	17	-
	1,944	1,877	8,203
Change in non-cash working capital items	(4,877)	(601)	175
	(2,933)	1,276	8,378
INVESTING ACTIVITIES			
Additions to tangible capital assets	(383)	(161)	(9,603)
Net of contributed capital	-	24	300
	(383)	(137)	(9,303)
FINANCING ACTIVITIES			
Debentures issued	-	-	-
Decrease in debenture debt	(227)	(220)	(1,057)
	(227)	(220)	(1,057)
NET CHANGE IN CASH DURING THE PERIOD	(3,543)	919	(1,982)
CASH POSITION - BEGINNING OF YEAR	26,925	23,494	21,544
CASH POSITION - END OF PERIOD	**23,382**	**24,413**	**19,562**
Ending cash balance comprised of the following:			
Unrestricted cash	11,969	13,876	11,467
Restricted cash:			
Water Treatment Plant, Restricted Reserve Fund	10,153	9,315	6,797
Development Charges Act, Restricted Reserve Fund	-	4	-
Park and Zoo Major Projects, Restricted Reserve Fund	662	624	700
Park and Zoo Animal Care, Restricted Reserve Fund	494	491	493
Park and Zoo, State of Good Repair Reserve Fund	104	103	105
	11,413	10,537	8,095
	23,382	24,413	19,562
Change in non-cash working capital items comprised of the following:			
Accounts receivable	55	(215)	(100)
Unbilled revenue	478	519	-
Inventories	27	(149)	-
Prepaid expenses	(403)	(61)	(25)
Accounts payable and accrued charges	(5,034)	(695)	300
	(4,877)	(601)	175

PETERBOROUGH UTILITIES COMMISSION
STATEMENT OF CHANGES IN NET FINANCIAL ASSETS

Unaudited for the three months ended March 31, 2022
($'s in thousands)

	Mar 31 2022	Mar 31 2021	2022 Budget
Surplus	372	309	2,123
Acquisition of Tangible Capital Assets	(383)	(161)	(9,603)
Amortization of Tangible Capital Assets	1,595	1,575	6,380
Decrease (Increase) in Inventories	27	(149)	-
Decrease (Increase) in Prepaid Expenses	(403)	(61)	(25)
	1,208	1,513	(1,125)
Net Financial Assets, beginning of year	9,808	8,290	7,246
Net Financial Assets, end of year	**11,016**	**9,803**	**6,121**

PETERBOROUGH UTILITIES COMMISSION
STATEMENT OF RESERVE FUNDS

Unaudited for the three months ended March 31, 2022
($'s in thousands)

	Mar 31 2022	Mar 31 2021	2022 Budget
WATER TREATMENT PLANT RESERVE FUND			
Opening balance	9,953	9,115	9,943
Revenue from sale of water	186	184	786
Interest	14	16	68
Transfers to General Fund	-	-	(4,000)
Closing Balance	10,153	9,315	6,797
DEVELOPMENT CHARGES RESERVE FUND			
Opening balance	-	-	-
Contributions	-	4	667
Interest	-	-	-
Transfers to General Fund	-	-	(667)
Closing Balance	-	4	-
RIVERVIEW PARK & ZOO MAJOR PROJECTS RESERVE FUND			
Opening balance	661	604	669
Contributions	1	19	25
Interest	-	1	6
Transfers to General Fund	-	-	-
Closing Balance	662	624	700
RIVERVIEW PARK & ZOO ANIMAL CARE RESERVE FUND			
Opening balance	494	490	491
Contributions	-	-	-
Interest	-	1	2
Transfers to General Fund	-	-	-
Closing Balance	494	491	493
RIVERVIEW PARK & ZOO STATE OF GOOD REPAIR RESERVE FUND			
Opening balance	104	103	104
Contributions	-	-	-
Interest	-	-	1
Transfers to General Fund	-	-	-
Closing Balance	104	103	105
TOTAL RESERVE FUND BALANCE	**11,413**	**10,537**	**8,095**

PETERBOROUGH UTILITIES COMMISSION
SCHEDULE A - COST OF WATER TREATMENT AND STORAGE

Unaudited for the three months ended March 31, 2022
($'s in thousands)

	Mar 31 2022	Mar 31 2021	2022 Budget	Actual % of Budget
Process Waste Treatment	24	18	174	14%
Water Treatment Plant	715	703	3,784	19%
Pumphouse/Dam	90	84	406	22%
Pumping station	62	36	223	28%
Reservoirs	37	60	195	19%
	928	**901**	**4,782**	19%

PETERBOROUGH UTILITIES COMMISSION
SCHEDULE B - DISTRIBUTION SYSTEM

Unaudited for the three months ended March 31, 2022
($'s in thousands)

	Mar 31 2022	Mar 31 2021	2022 Budget	Actual % of Budget
Trunk mains	-	1	13	-
Distribution mains	83	177	551	15%
Locate and records	16	19	215	7%
Flushing	7	6	64	11%
Valves and boxes	46	129	244	19%
General maintenance	62	37	224	28%
Hydrants	80	71	255	31%
Service pipes	171	165	694	25%
Meters	11	6	100	11%
Water Distribution Engineering	22	21	34	65%
	-	-	-	
	498	**632**	**2,394**	21%

PETERBOROUGH UTILITIES COMMISSION
SCHEDULE C - ADMINISTRATIVE

Unaudited for the three months ended March 31, 2022
($'s in thousands)

	Mar 31 2022	Mar 31 2021	2022 Budget	Actual % of Budget
Advertising and public relations	34	-	17	200%
Water conservation	5	28	46	11%
Donations	-	-	-	-
Commission Expenses	-	1	4	-
Building Rent	104	106	414	25%
Insurance	134	107	498	27%
Equipment rental	54	43	206	26%
Professional fees	4	3	55	7%
Memberships and subscriptions	12	4	19	63%
Property taxes	51	50	202	25%
Bad Debts	-	-	-	-
Gain/loss on sale of assets	-	-	-	-
Miscellaneous	7	7	10	70%
	405	**349**	**1,471**	28%

PETERBOROUGH UTILITIES COMMISSION
SCHEDULE D - SUPPORT SERVICES

Unaudited for the three months ended March 31, 2022
($'s in thousands)

	Mar 31 2022	Mar 31 2021	2022 Budget	Actual % of Budget
Finance	31	24	112	28%
Administration	110	97	721	15%
Peterborough Technology Services	186	127	693	27%
Customer Service	224	180	828	27%
Billing intergration and infrastructure	-	43	-	-
Human Resources	27	31	217	12%
Purchasing	42	25	120	35%
				-
	620	**527**	**2,691**	23%

PETERBOROUGH UTILITIES COMMISSION
SCHEDULE E - STATEMENT OF OPERATIONS FOR RIVERVIEW PARK AND ZOO

Unaudited for the three months ended March 31, 2022
($'s in thousands)

	Mar 31 2022	Mar 31 2021	2022 Budget	Actual % of Budget
REVENUE				
Train	-	-	130	-
Miscellaneous	5	5	171	3%
				-
	5	5	301	2%
EXPENSES				
Maintenance Park	76	80	697	11%
Maintenance Train	-	1	101	-
Animal Care and Zoo Maintenance	314	247	1,053	30%
				-
	390	328	1,851	21%
Contribution to state of good repair fund	-	-	-	-
NET EXPENSES FOR PERIOD	**385**	**323**	**1,550**	25%

PETERBOROUGH UTILITIES COMMISSION
SCHEDULE F - STATEMENT OF CAPITAL EXPENDITURES
Unaudited for the three months ended March 31, 2022
($'s in thousands)

	2022 Actual	2022 Budget	Actual % of Budget
WATER TREATMENT PLANT			
Ozone preliminary design	24	400	6%
Turbidity meter replacement		31	-
Chemical building heaters		15	-
General Rehab and Painting		10	-
Ozone monitor		-	-
Miscellaneous	10	10	100%
	34	466	7%
PUMPHOUSE AND DAM			
Generator #2 gear box rebuild		100	-
Generator #5 requires rebuild		40	-
Trash rack replacement - pumphouse dam	10	1,200	-
	10	1,340	1%
BOOSTER PUMPING STATIONS			
Rebuild Clonsilla Pumping Station Pump #1		25	-
General improvements		5	-
	-	30	-
RESERVOIRS AND ELEVATED WATER STORAGE TANKS			
Diesel engine upgrades		70	-
High Street Elevated Tank rehabilitation	2	350	-
	2	420	0%
TRUNKMAINS			
Bethune Trunkmain		3,200	-
Parkhill Trunk COP Project		1,250	-
General improvements	19	25	76%
	19	4,475	0%
DISTRIBUTION SYSTEM			
New Watermains in New Subdivisions	17	235	7%
	17	235	7%
New Watermains on Existing Streets			
General Improvements		25	-
	-	25	-

PETERBOROUGH UTILITIES COMMISSION
STATEMENT OF CAPITAL EXPENDITURES - continued

Unaudited for the three months ended March 31, 2022
($'s in thousands)

	2022 Actual	2022 Budget	Actual % of Budget
NEW WATER SERVICES			
New water services in residential subdivisions by private developers		100	-
SFR		22	-
Non-SFR		20	-
Valves & boxes		50	-
	-	192	-
REHABILITATION OF EXISTING WATER DISTRIBUTION SYSTEM			
Service replacement > 20mm	30	413	7%
Main valve/box replacement - new	3	10	-
Main replacement	90	1,210	7%
Cleaning/lining	7	40	18%
Records upgrade	10	12	83%
	140	1,685	8%
HYDRANTS			
New		25	-
Replacement		42	-
	-	67	-
METERS			
New residential	112	202	55%
New meters - existing residential		65	-
Replacement residential	5	15	33%
New ICI		10	-
Existing ICI		2	-
Replacement ICI	12	50	24%
	129	344	38%
RIVERVIEW PARK AND ZOO			
New facilities - Park		-	
Eavestroughs for Education Centre		25	-
Waste/Recycling Bins, Animal Proof	9	10	90%
Signage and Support Materials for Membership Program		10	-
Outdoor Storage for Education Centre	4	5	80%
Replacement facilities - Park		-	
Dobbin Building Roof Replacement		50	-
Dobbin Building, Paint Windows		5	-
Playground Retaining Wall and Steps Repair		5	-
Stumps		5	-
Accessible Walkway		100	-
New facilities - Zoo		-	
Takin Exhibit, New & Upgraded Gates/Shifts on South Exhibit	17	10	170%
Window Installation at Camels		10	-
Window Installation at Meerkats		10	-
Animal Signs		8	-
Barn - New stairs to loft		8	-
UV Treatment for Capybara Pond		9	-
Replacement facilities - Zoo		-	
Emu & Wallaby Exhibit Drainage (& Pond?)		25	-
Camel Exhibit, New Compound (Phase III)		10	-
Education Centre, Revamp SFT Filtration Equipment and Fac	2	10	20%
Primate Building, Fabricated Metal Shifts		5	-
Reindeer Exhibit and Wallaby Exhibit Improvements (Grass, Furniture, etc.		5	-
	32	324	10%
TOTAL CAPITAL EXPENDITURES	383	9,603	4%

PETERBOROUGH UTILITIES COMMISSION
REPORT

2.02

May 25, 2022

COMMISSION AGENDA
2022:06:23

ANNUAL DRINKING WATER REPORT

INFORMATION ITEM

Attached is the 2021 Annual Drinking Water Report for the City of Peterborough municipal drinking water system

Prepared by: René Gagnon, Manager Water Treatment Plant
Patricia Skopelianos, Water Utility Quality Assurance Manager

Submitted by: Patrick Devlin, Vice President Water Utility Services

Approved for Submission by: _____
President & CEO

Background

The attached report provides information regarding the current state of the drinking water for the City of Peterborough. This report combines the annual PUC report and the Drinking Water Quality reports received in previous years. It is generated to provide information to Commissioners in order to assist in diligent oversight of Peterborough's drinking water system, helping to ensure the safety of drinking water. This report will also be available for our customers to view at www.peterboroughutilites.ca. The information provided is sufficiently detailed for the Commission to have an understanding on the effectiveness of the drinking water system.

Management Discussion

With minimal disruptions to the plant process for construction and maintenance, the Peterborough Water Treatment Plant continued to produce an excellent quality of drinking water for the consumers in the Peterborough and Woodland Acres during 2021.

The Peterborough Water Treatment Plant fully complied with the quarterly, annual testing and reporting requirements under the Ministry of Environment, Conservation & Park's Drinking Water System Regulation 170/03 made under the Safe Drinking Water Act, 2001. There were no adverse water quality reports in 2021.

Risk Evaluation

The Peterborough Utilities Commission should be aware of the current state of the drinking water system in order to make informed decisions on resources and potential customer concerns within the City of Peterborough.

Attachments: 2021 Annual Drinking Water Quality Report , 44 pages

UTILITIES
PETERBOROUGH
COMMISSION

WATER
RIVERVIEW PARK AND ZOO

Annual Drinking Water Report 2021

Inside this Report

2021 Peterborough Utilities Commission

Mayor Diane Therrien..... Chair

Councillor Don Vassiliadis..... Vice-Chair

Councillor Gary Baldwin..... Commissioner

Councillor Dean Pappas..... Commissioner

Councillor Stephen Wright..... Commissioner

2021 Riverview Park and Zoo Advisory Committee

Name of Volunteer	Date Appointed
Wally Davidson	Lifetime Member
Janet Lafortune	January 2018
Paul Hartung	January 2018
Shauna Moodie	January 2020
Susan Ramey	January 2020

On the Cover

The newly refurbished High Street Water Tower had an extensive rehabilitation (page 4) in 2021. This photo was captured using drone photography, which allows the viewer to see the expansive City in the backdrop. The tower now displays the new Peterborough logo.

Questions or comments

Please contact us either by mail, phone or email.

PUG Services Corp.
1867 Ashburnham Drive, Peterborough, ON K9L 1P8
705-748-9300, ext. 1258
Patricia Skopelianos, Water Quality Assurance Manager
pskopelianos@peterboroughutilities.ca

Introduction

All Peterborough Utilities Commission facilities are managed and operated under contract by PUG Services Corp. (PUGSC). The Water Utility section of PUGSC includes the following operating departments:

- Water Treatment Plant
- Water Distribution
- Water Engineering Services
- Riverview Park and Zoo

Drinking Water Process Description

Source Water

The source of raw (untreated) water for Peterborough's drinking water is the Otonabee River. The Otonabee River water is of good quality and can be described as a moderately coloured water of low turbidity. The river water temperature ranges from 0°C (winter) to approximately 26°C (summer). The raw river water is what we call a surface water supply, which means that it is considered to be an unprotected source.

Accordingly, we assume that raw water always requires full treatment at the Peterborough Water Treatment Plant to make it drinkable or potable.

The river water quality is monitored by staff at the plant as well as the Otonabee Region Conservation Authority (ORCA) and the Peterborough Health Unit (beaches only).

The watershed is protected by planning and approvals processes through the City of Peterborough and ORCA. Since 1998, ORCA has monitored water quality in the Otonabee watershed under the Watershed 2000 Program and the Provincial Water Quality Monitoring Network.

Peterborough Utilities continued its participation in the Source Water Protection Committee in 2021.

Treatment Plant Operations

The plant is located at 1230 Water Street North, Peterborough, adjacent to the Riverview Park & Zoo. The plant was initially built in 1922 and expanded in 1952, 1965, 1995 and 2016. The conventional treatment process includes coagulation, flocculation, sedimentation, filtration and chlorine disinfection and a process waste treatment facility to dewater the backwash sludge.

Total raw water processed in 2021 was 11,301.84 megalitres (ML), this is an average of 30.96 ML daily (Table 1). The maximum daily pumpage of 36.87 ML, occurred on July 7th , was a 2% increase from the maximum daily value (30.46 ML) recorded on July 7th, 2020.

Table 1

Water Treatment Plant Operations	2020	2021
Total Annual Raw Water	11,116.32	11,301.84
Average Day ML	30.46	30.96
Total Annual Plant Effluent	9,707.10	9,916.06
Average Day ML	26.51	27.29
Max. Daily Pumpage	38.32 – Jul 7	37.49 – Aug 25
Max. Daily City Consumption	37.64 – Jul 7	36.87 – July 7
Peak Hourly Consumption Rate	74.78– Aug 26 @ 15:30h	70.69 – Dec 15 @20:0h
Total Wash Water	247.81	261.73
Average of Plant Effluent	2.5 %	2.6%
Total Zone #1 Pumpage	5,828.22	5,997.14
Average Day	15.93	16.47
Total Zone #2 Pumpage	3,878.89	3,918.91
Average Day	10.59	10.76

Reservoirs, Elevated Tanks, Water Booster Pumping Stations

Treated water is stored at various locations throughout the City in underground reservoirs and elevated storage tanks. Storage is used to supplement supply during times of high water demand and in emergency situations such as firefighting. The water storage capacity in the system is 55.36 ML, including the Water Treatment Plant. Water storage around the city is as follows:

Water Treatment Plant	8.5 ML
High Street Elevated Tank	4.55 ML
Clonsilla Avenue Reservoir	18.18 ML
Towerhill Reservoir	22.73 ML
Sherbrooke Elevated Tank	2.3 ML
Milroy Elevated Tank	0.5 ML

Water Distribution

The water distribution system consists of approximately 470 kilometres of pipe (water mains), 2,394 hydrants and 27,323 individual water services. Hydrants are colour-coded according to the Ontario Fire Code requirements to indicate the available flow rate at a 20 psi residual pressure.

PTBO H_20

The Utilities' mobile drinking water station, named PTBO H_20 did not operate in 2021 due to the COVID-19 pandemic.

Capital Works Summary

The Water Treatment Plant underwent the following upgrades in 2021

- Raw water ozone feed system preliminary design started.
- Replaced five of the fifteen HACH turbidity meters with Swan turbidity meters in the WTP.
- Two 30,000 L alum bulk chemical storage tank liners were replaced.
- TSSA upgrades were completed to the diesel engine driven pumps/generators at the WTP and Pumping Stations.

High Street Tank

The High Street elevated water tower underwent the following upgrades in 2021

- Interior and exterior coating replacement;
- Interior and exterior steel blast clean and weld repairs;
- Piping, valving, and venting replacements;
- Health and Safety upgrades including new ladders, platforms, tie-offs and fall arrest system to meet new code requirements.

Water Main Replacement

Approximately 445 m of distribution water mains were replaced on:

- Applegrove Avenue
- Rosehill Drive

New Water Main Installation

Approximately 750 m of water main was installed to Bethune Street as part of the City's Jackson Creek Flood Diversion project.

Water Service Replacement

A total of 70 water services were repaired and 25 water services were replaced in 2021.

Water Main Rehabilitation

Approximately 900 m of water main was rehabilitated via cast-in-place-pipe liner (CIPP structural lining) on the following streets:

- Parkhill Road
- Stannor Drive

Summary of Inspection & Compliance

Ministry of Environment Conservation & Parks Inspection

During 2021, there was a Ministry of the Environment, Conservation & Parks (MECP) Inspection on July 17, 2021, report #1-29669702. The Peterborough Drinking Water System received a 100% compliance rating. There were no recommended best practices noted in the report.

Adverse Water Quality Incidents

There was a single incident in 2021 of an adverse water quality result. This occurred on September 21, 2021, with an exceedance of total coliform at the following distribution sampling stations; Spillsbury, Cumberland and Westridge sampling stations. The locations were resampled as per protocol and test results were negative for total coliform.

Drinking Water Quality Management System

On October 30, 2006, the finalized standard was issued on the Environmental Bill of Rights Registry. The purpose of this Standard is to assist owners and operating authorities in the effective management and operation of their municipal residential drinking water systems.

This Standard outlines requirements for a Quality Management System (QMS) to ensure high quality drinking water. In the development of a QMS, the Operating Authority must create an Operational Plan; this document will define the QMS and will be subject to external audits for accreditation. Staff developed and implemented a QMS specific to the Peterborough municipal water system, which received full scope accreditation in June 2011.

The Peterborough Drinking Water System maintained accreditation to the Drinking Water Quality Management Standard (DWQMS). In advance of the annual verification audit an internal audit was conducted in September 2021. The internal audit found eight opportunities for improvement and no corrective actions required. The external audit, conducted by NSF International, later in October 2021 described that the management system was well documented and continues to be effective.

Water Flows

Permit to Take Water

The *Ontario Water Resources Act, Regulation 387/05* authorized Peterborough Utilities Commission in accordance with Permit to Take Water, 5167-9BVR6A the withdrawal of 190.68 ML per day. Under this Regulation we are required to report the daily water taking annually by March 31st each year.

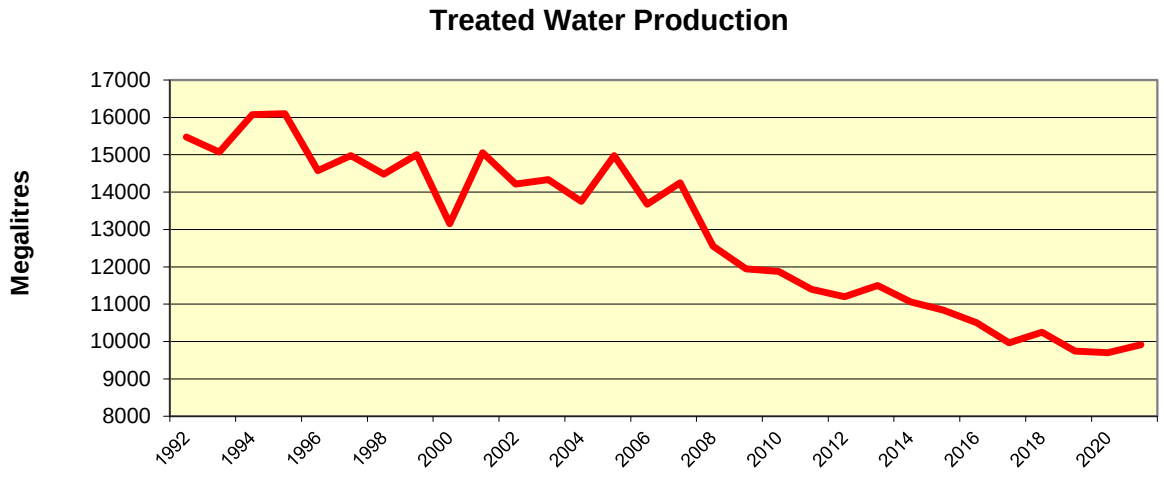
In 2021, there were no instances of water taking in excess of this daily limit. The total volume of water pumped into the Water Treatment Plant was 11,301.84 megalitres (ML), this is an average of 30.96 ML daily.

Treated Water Production

The Water Treatment Plant produced 9,916.06 megalitres (ML) in 2021, this is an average of 27.23 ML daily (Chart 1). Historically the highest water consumption recorded was in 1980 (18,621.20 ML).

Peterborough Utilities meters water usage and the majority of water usage in 2021 was by industrial, institutional and large commercial users. There was a certain amount of water used for distribution system maintenance in order to maintain the water quality in the distribution system.

Chart 1



2021 water production was 9,916.06

Water Quality Results

No known health-related water quality guidelines for inorganic (Table 2) and organic (Table 3) parameters were exceeded in 2021 in Peterborough's drinking water. In order to ensure that Peterborough's water is safe to drink, water quality is carefully monitored and subject to constant surveillance.

In addition to continuous monitoring of turbidity, chlorine, fluoride and pH levels at the Water Treatment Plant, thousands of water samples are taken each year for chemical, physical and microbiological tests. These tests are carried out on water samples before and after treatment as well as on samples collected from different points in the water distribution system.

A total of approximately 20,000 individual tests were performed on Water Treatment Plant and water distribution samples in 2021. Approximately 13,000 individual tests were performed in the Water Treatment Plant Laboratory and approximately 6,000 microbiological and chemical tests were performed by Peterborough Environmental Protection Laboratory and SGS Lakefield Research Limited.

Results of the laboratory testing continue to confirm that the Peterborough Water Treatment Plant produces good quality water and this quality is maintained throughout the water distribution system to the customer's tap.

O. Reg. 169/03 contains the *Ontario Drinking Water Quality Standards* (ODWQS). The purpose of the Province's ODWQS is to establish parameter limits to protect public health. An exceedance of any parameter would result in an adverse water quality event with notification to the Medical Officer of Health and the MECP. Appropriate corrective action would have to be initiated to address the adverse incident.

Chlorine Residual

The Peterborough Water Treatment Plant uses chlorine for disinfection against viruses and bacteria in accordance with O. Reg. 170/03. Sample results reported under Schedule 7 for plant effluent was 0.57 -2.86 mg/L.

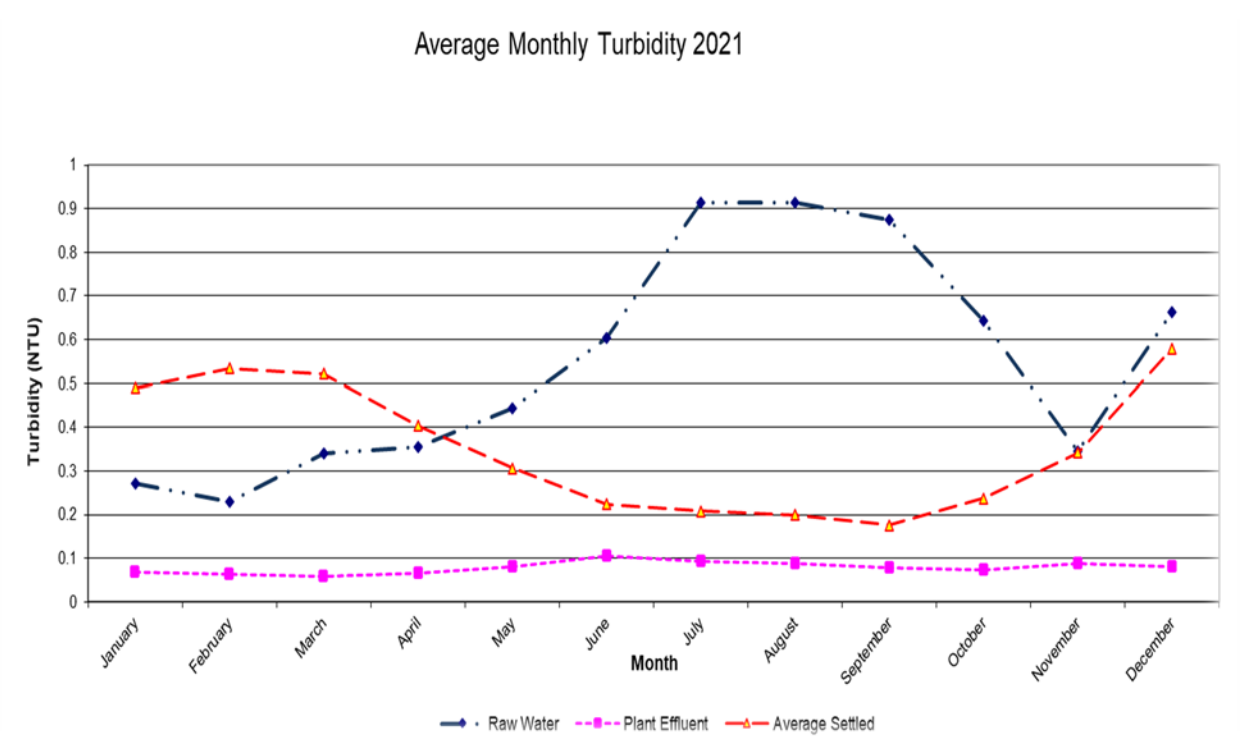
Turbidity

The average raw water turbidity in 2021 was 0.55 NTU; average during 2020 was 0.48 NTU. The monthly raw water turbidity peak occurred in July and August at 0.92 NTU as shown in Chart 2. The past 20-year average raw water turbidity was 0.57 NTU and treated water turbidity was 0.09 NTU.

The zebra mussel population in the river could also be a contributing factor for the cyclical increases and decreases in raw water turbidity. Raw water turbidity has slowly dropped since 2008.

The performance criteria for filtered water is 0.30 NTU for 95% of the time, without exceeding 1.0 NTU. The average filtered water turbidity was 0.04 NTU for 2021 and in 2020 was 0.04 NTU. Filters are taken off-line when the turbidity reaches 0.15 NTU. The 2021 average treated water turbidity was measured at 0.08 NTU.

Chart 2



Microbiological Standards Testing

Escherichia coli

During 2021, a total of 247 Escherichia coli (E.coli) samples were analyzed from the Otonabee River (at the WTP intake) to assist in determining the source of fecal contamination within our source water. Monthly values ranged from 0 to 90 Colony Forming Units (CFU) per liter. A total of 1,224 E.coli samples were analyzed from the plant effluent and distribution system.

Total Coliform

The MECP guidelines for Total Coliform is to have all samples collected from the plant effluent to be zero CFU per litre of water sampled. During 2021, a total of 247samples were analyzed from the Otonabee River. Monthly values ranged from 9 to 365 Colony Forming Units (CFU) per liter. A total of 1,224 Total Coliforms samples were analyzed from the plant effluent and distribution system.

Inorganic Parameters

Table 2

Schedule 23	Unit	2021 Results	MAC
Antimony	mg/L	<0.00009	0.006
Arsenic	mg/L	<0.00002	0.025
Barium	mg/L	0.0258	1.0
Boron	mg/L	0.007	5.0
Cadmium	mg/L	0.000003	0.005
Chromium	mg/L	0.00008	0.05
Mercury	mg/L	<0.00001	0.001
Selenium	mg/L	0.00007	0.01
Uranium	mg/L	0.00017	0.02

Organic Parameters

Table 3

Schedule 24	Unit	2021 Results	MAC
Alachlor	mg/L	<0.00002	0.005
Atrazine + N-dealkylated metabolites	mg/L	<0.00001	0.005
Azinphos-methyl	mg/L	<0.00005	0.02
Benzene	mg/L	<0.00032	0.005
Benzo(a)pyrene	mg/L	<0.000004	0.00001
Bromoxynil	mg/L	<0.00033	0.005
Carbaryl	mg/L	<0.00005	0.09
Carbofuran	mg/L	<0.00001	0.09
Carbon Tetrachloride	mg/L	<0.00016	0.005
Chlorpyrifos	mg/L	<0.00002	0.09

Schedule 24	Unit	2021 Results	MAC
Diazinon	mg/L	<0.00002	0.02
Dicamba	mg/L	<0.0002	0.12
1,2-Dichlorobenzene	mg/L	<0.00041	0.2
1,4-Dichlorobenzene	mg/L	<0.00036	0.005
1,2-Dichloroethane	mg/L	<0.00035	0.005
Dichloromethane	mg/L	<0.00035	0.05
2,4-Dichlorophenol	mg/L	<0.00015	0.9
2,4-Dichlorophenoxy acetic acid (2,4-D)	mg/L	<0.00019	0.1
Diclofop-methyl	mg/L	<0.0004	0.009
Dimethoate	mg/L	<0.00006	0.02
Diquat	mg/L	<0.001	0.07
Diuron	mg/L	<0.00003	0.15
Glyphosate	mg/L	<0.001	1
Haloacetic acids (HAA)	mg/l	0.0750	0.08
Malathion	mg/L	<0.00002	0.19
2-Methyl-4-chlorophenoxyacetic acid	mg/L	<0.0000012	0.00012
Metolachlor	mg/L	<0.00001	0.05
Metribuzin	mg/L	<0.00002	0.08
Monochlorobenzene	mg/L	<0.0003	0.08
Paraquat	mg/L	<0.001	0.01
Pentachlorophenol	mg/L	<0.00015	0.06
Phorate	mg/L	<0.00001	0.002
Picloram	mg/L	<0.001	0.19
Polychlorinated Biphenyls (PCB)	mg/L	<0.00004	0.003
Prometryne	mg/L	<0.00003	0.001
Simazine	mg/L	<0.00001	0.01
Terbufos	mg/L	<0.00001	0.001
Tetrachloroethylene (perchloroethylene)	mg/L	<0.00035	0.03
2,3,4,6-Tetrachlorophenol	mg/L	<0.0002	0.1
Triallate	mg/L	<0.0001	0.23
Trichloroethylene	mg/L	<0.00044	0.005
2,4,6-Trichlorophenol	mg/L	<0.00025	0.005
Trifluralin	mg/L	<0.00002	0.045
Vinyl Chloride	mg/L	<0.00017	0.002

Trihalomethanes -THM

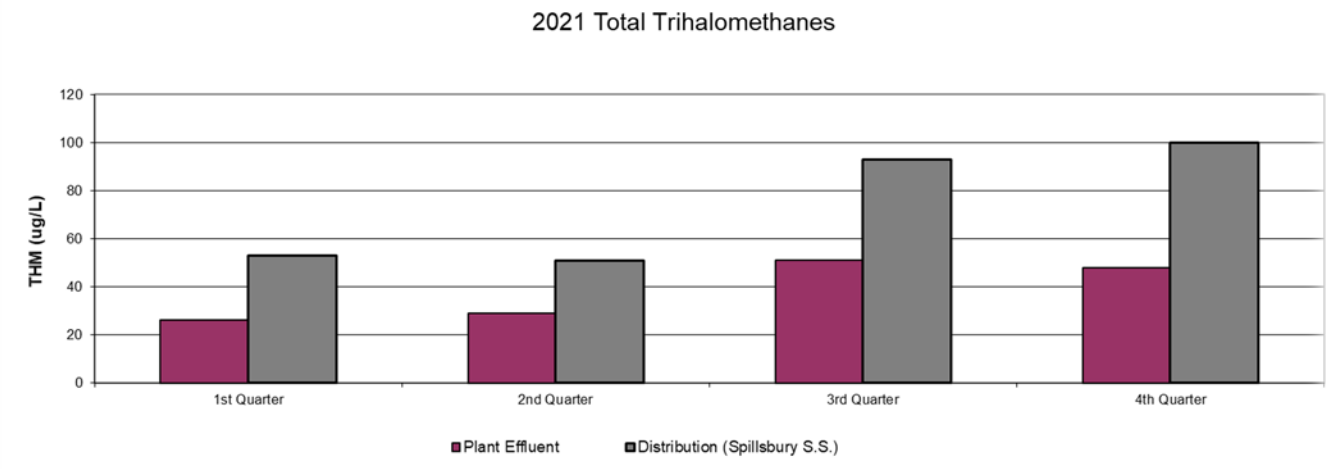
In Ontario, the Ministry of the Environment Conservation & Parks' Maximum Acceptable Concentrations (MAC) for total THM's (total concentration of chloroform, bromoform, bromodichloromethane and dibromochloromethane) are set to 100 μg/L (running annual average) for the distribution system. According to O. Reg. 170/03, distribution THM samples must be collected and analyzed quarterly.

Trihalomethanes (THM's) are formed as a by-product when chlorine is used to disinfect water for drinking. The presence of organic materials along with the use of chlorine in the water treatment process can contribute to the formation of disinfection by-products. The THM's may have adverse health effects at high concentrations and many governments set limits on the amount permissible in drinking water.

The THM average values found leaving the Water Treatment Plant during 2021 was 39 μg/L. The past 10-year average plant effluent has been 41 μg/L.

Distribution levels are always found to be higher than those leaving the Water Treatment Plant since THM's continue to form as the water travels through the distribution piping system. During 2021, one distribution location was selected to assist in determining areas of the city where THM's may be highest. The annual average THM value in the distribution system was 74 μg/L (Chart 3). The average THM value during 2020 was 77 μg/L. The 10-year average of distribution THM concentration was found to be 75 μg/L.

Chart 3



Haloacetic Acid

HAA's are another group of chemicals that are formed as disinfection by-products similar to trihalomethanes (THM).

The 2021 average treated water HAA was 36.9 μg/L and the average distribution sample was found to be 58 μg/L. O Reg. 170/03 was amended to include HAAs in 2020. The regulatory limit for distribution samples are 80 μg/L (running annual average); therefore, the Peterborough Drinking Water System maintained compliance.

Sodium

Sodium is not part of Schedule 23 or 24 but is required to be tested at least once every five (5) years. It has been sampled every year and was found to be below the ODWS aesthetic objective of 200 mg/L. In 2021, the sodium result was found to be 7.3 mg/L (10.0 mg/L in 2020). The local Medical Officer of Health must be notified when the sodium concentration exceeds 20 mg/L so that this information may be passed on to local physicians.

Lead

Lead sampling is required under O. Reg. 170/03, schedule 15.1. Peterborough requires 8 distribution samples to be collected and analyzed for lead, pH and alkalinity every sampling period. Peterborough is required to sample any residential house in the city that requests sampling for the same parameters mentioned above.

In 2021, we sampled 0 private plumbing (residential) and 20 distribution points for lead. Customers are offered free testing of their private dwelling. Zero distribution samples tested over 0.0005 mg/L which indicates that the distribution system does not contribute to lead contamination.

Taste and Odour

During 2021, the primary source of taste and odour in our raw water was from the naturally occurring compounds geosmin (name derived from the Greek 'earth' and 'smell') and 2-MIB (2-methylisoborneol). These compounds are monitored as a precursor to taste and odour complaints (earthy/musty) of the water and are not a health concern. They can be detected by humans at very low levels (less than 10 ηg/L). The bacteria actinomycetes, zebra mussels and some species of algae can produce geosmin and 2-MIB, though all of the contributing organisms are not known. Observations have shown that when we have greater zebra mussel and/or algae populations we experience higher amounts of geosmin and 2-MIB.

Previous annual data indicates that geosmin and 2-MIB would hit peaks at the same time during the summer months. There is usually a large peak near the end of the summer when the water temperature is highest and sunlight hours are high. The concentration peaks for both taste and odour causing compounds occurred approximately July to November.

Geosmin is thought to originate higher in the water column and produce an earthy odour. The average raw water value during 2021 was 5.8 ηg/L and the average plant treated water was 6.8 ηg/L (
Chart 4).

The 2-MIB is produced in the sediment or benthic layer and gives off a musty odour. 2-MIB can reproduce well when sunlight can penetrate down to the bottom of lakes and streams. The average raw water value during 2021 was 4.2 ηg/L and the average plant effluent was 4.6 ηg/L (Chart 5).

The reduction of geosmin and 2-MIB due to water treatment processes (coagulation, sedimentation, filtration and chlorination) was negligible. Both geosmin and 2-MIB compounds resist oxidation (disinfection) and are difficult to remove by conventional water treatment processes.

Chart 4

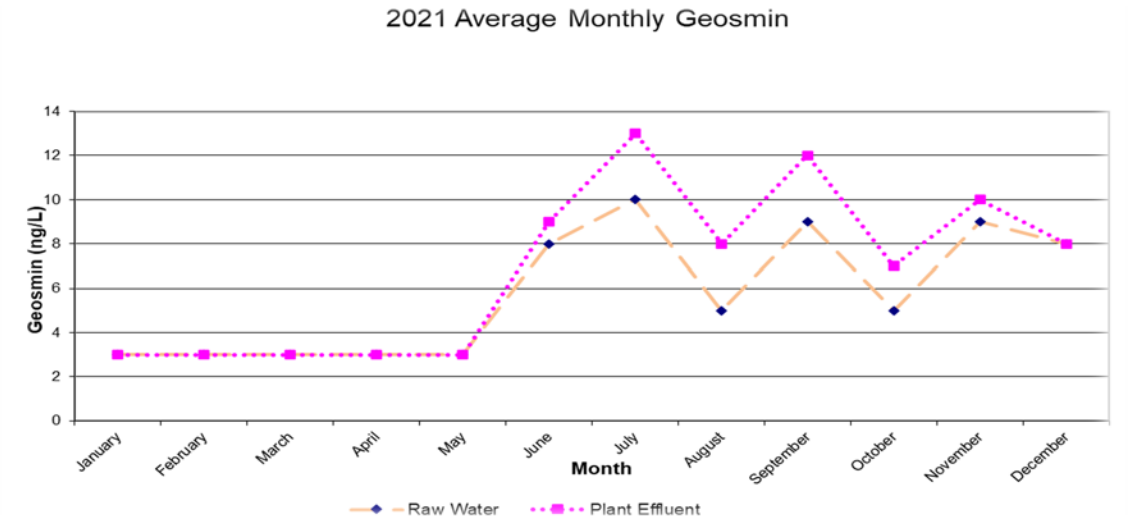
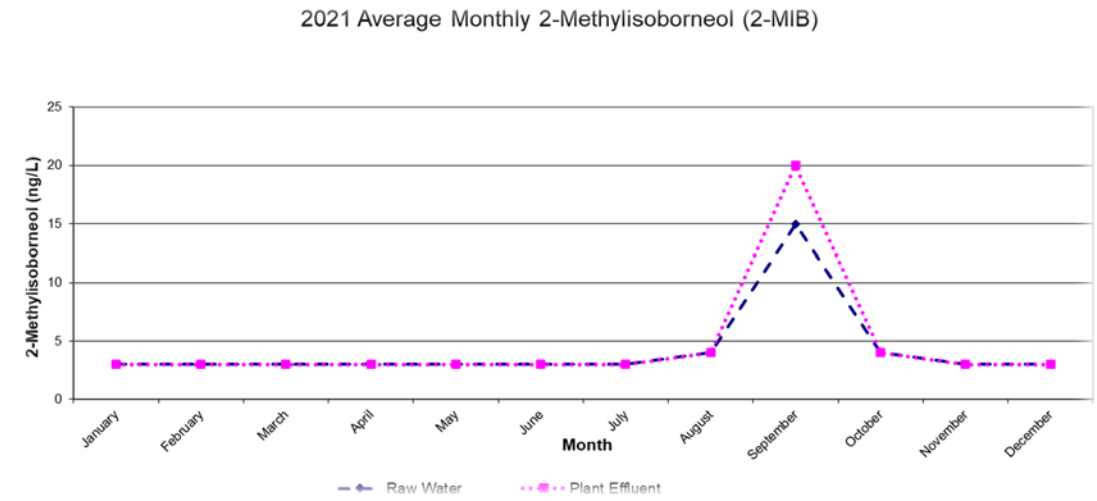


Chart 5



Summary Report

The summary of water delivered as per O. Reg. 170/03 Schedule 22 in 2020 is shown in Table 4.

Table 4

Month	Average Day (M^3/d)	Maximum Day (M^3/d)	Peak Flows (L/m)
January	24,379	29,187	20,269
February	24,401	27,876	19,358
March	24,544	32,152	22,328
April	24,974	29,028	20,158
May	27,959	34,737	24,123
June	30,921	36,483	25,335
July	28,266	32,433	22,523
August	31,939	37,490	26,035
September	29,509	32,125	22,309
October	28,087	31,458	21,846
November	26,332	29,037	20,165
December	25,431	27,931	19,397
Rated Capacity	**104.00**	----	----
Approved Flowrate	----	190.68	132,743 L/m

Chemical Consumption

Table 5

Chemical Use	2020	2021
Total Chlorine	36,333 kg	40,474 kg
Average Dosage	1.20 mg/L	1.27 mg/L
Total Aluminum Sulphate	803,160 L	833,546 L
Average Dosage	47.2 mg/L	48.7 mg/L
Total Hydrofluosilicic Acid	19,438 L	20,812 L
Average Dosage	0.68 mg/L	0.59 mg/L
Total Sodium Hydroxide	50,788	70,962
Average Dosage	3.18 mg/L	3.27 mg/L

Chlorine

The average dose of chlorine for 2021 was 1.27 mg/L (Table 5). This value fluctuates throughout the year as higher doses of primary chlorine are required during the summer months because it takes more chlorine to disinfect the water when the water is warmer.

Chlorine is also added into the treated water before it leaves the WTP. This secondary chlorine is added to help maintain the chlorine residual throughout the distribution system to comply with the Ontario Drinking Water Standards (ODWS).

Zebra mussel control for the Water Treatment Plant included adding approximately 0.5 mg/L of chlorine into the Water Treatment Plant intakes from typically between May to October.

Hydrofluorosilicic Acid (fluoride)

Hydrofluorosilicic acid (fluoride) was added to the treated water to attain a combined concentration (target value) of 0.70 mg/L. Fluoride is added to the water depending on the total concentration required in the treated water and also the concentration of the raw water. The average dosage of fluoride added to the water in 2021 was approximately 0.59 mg/L (Table 5). The average treated water fluoride residual was 0.45 mg/L. The average fluoride concentration found in the raw water (natural fluoride) during 2021 was 0.11 mg/L.

Sodium Hydroxide

Sodium Hydroxide (NaOH) is normally added to the plant effluent for corrosion control within the distribution system as well as plant effluent pH adjustment. The use of chlorine and aluminium sulphate (alum) during the water treatment process lowers the pH level causing the water to be slightly acidic (corrosive). The addition of NaOH increases the pH to a more acceptable value of 7.1.

Aluminium Sulphate

Aluminium Sulphate (alum) is used as our primary coagulant causing particles (silt, sand, algae, and bacteria) to coagulate or ‘clump’ to form a floc, which can settle in the sedimentation basins. The water is further treated by filtration. Alum was added to the water during 2021 at an average rate of 48.7 mg/L (Table 5). The average alum dosage during 2020 was 47.2 mg/L. Aluminium residual found in the WTP treated water can be a by-product of the addition of alum. The average treated water aluminium residual for 2021 was 0.039 mg/L the operational guideline for aluminium is 0.1 mg/L.

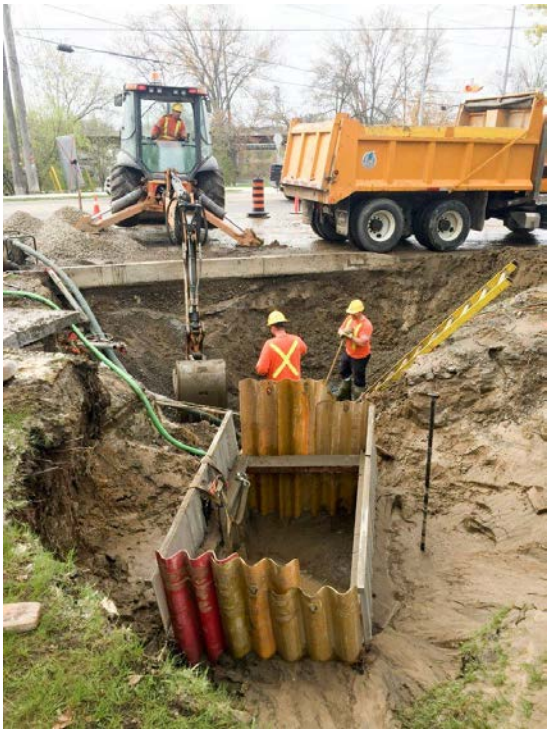
Water Treatment Plant

Annual maintenance was conducted at the Water Treatment Plant, Water Street Pumphouse, reservoirs, elevated tanks and booster pumping stations.

Water Distribution

Annual water distribution review and maintenance programs are necessary to ensure the safe delivery of drinking water in Peterborough. These programs include:

- Valve maintenance
- Hydrant maintenance
- Dead end flushing
- Service post repair



Impact of Climate Event

The temperature during June, July and August averaged approximately 20.1°C. This is considered to be slightly above normal summertime temperature. Environment Canada data describes the average normal value of 18.3°C (normal data 1981 – 2010). The summer months in 2021 were hotter than normal with 11 days where temperatures were higher than 30°C. Rainfall totals for the three summer months of June, July and August was 251.3 mm. This is considered to be a normal rainfall values, however the significant rainfall events were in the month of July with 138 mm total rainfall.

The Otonabee Water Response Team met monthly from May – October 2021. A level 1 low water condition was declared on June 9, 2021, and rescinded on August 9, 2021. On September 9, 2021, the region returned to a Level 1 low water condition, and this was rescinded on October 7, 2021, returning the watershed to normal conditions. When a Level 1 Low Water Condition is declared, water users are asked to voluntarily reduce their water consumption by 10%. This includes municipalities, aggregate operations, golf courses, water bottlers, farm irrigation, and private users.

Pilot Plant

The Peterborough Water Treatment Plant has conducted pilot-scale studies in an effort to improve water quality, optimize production, and investigate next-generation treatment technologies for the citizens of Peterborough.

A 5000:1 scale-model version of the main treatment facility, the pilot plant includes processes such as coagulation, tapered mixing, flocculation, settling and filtration. In addition to conventional water treatment studies, ozone and

advanced oxidation applications have been investigated. The primary objectives using the ozone pilot were to determine if ozone, advanced oxidation, and biofiltration will enhance our water quality and provide operational flexibility as an integral component of our multi-barrier approach to water treatment.

Ozone

Ozone application and the benefits for enhanced water quality has been an important focus of our pilot-scale research program since 2015. Previous research at our facility has shown the effectiveness of ozone on the reduction of disinfection by-product (DBP) formation and taste-and-odour compounds, geosmin (GSM) and 2-methylisoborneol (2-MIB). Our current studies in 2021 focused on the assessment and integration of ozone into full-scale applications.

Optimization of ozone dose, evaluation of ozone demand and half-life, and the impact on coagulation and biofiltration were key components of our focus. Biologically active filtration (biofiltration) allows the growth of naturally occurring biomass on the surface of granular filter media. Previous studies have shown the ability of biofiltration to improve the performance of conventional filtration through the removal of organic matter. The primary objective of our study was to determine if ozone could be incorporated as a pre-coagulant oxidant and assess infrastructure and energy costs associated with implementation.

The ozone dose was optimized through evaluation of ozone concentrations of 3.0, 2.5, 1.5, and 1.0 mg/L. Ozone decay rates were monitored at the variable ozone doses. The ozone demand in our source water was 1.7 mg/L, and ozone doses in the range of 1.5 to 3.0 mg/L were effective in reducing natural organic matter (NOM), DBP formation and GSM and 2-MIB compounds. Trihalomethanes (THMs) and haloacetic acids (HAAs) were reduced by 35% and 40%, respectively, and GSM and 2-MIB were eliminated below detectable levels. Ozone doses of 1.0 mg/L were shown to be less effective for NOM reduction. Based on this data, ozone systems are being designed to target maximum 3.0 mg/L ozone dose at 60 MLD water treatment plant flows.

Ozone residual also appears to decay quickly under cold-water conditions, with a half-life of 0.5 minutes observed for ozone doses of 2.0 and 2.5 mg/L, and a half-life of 3.4 minutes at 3 mg/L. Decay rates under all water temperatures and seasonal conditions must be examined further, in order to design ozone off-gas and quenching systems.

Coagulant dose was optimized through targeting equivalent total organic carbon (TOC) reduction post-sedimentation. Following addition of ozone in the source water, coagulant demand decreased up to 30% prior to observing a decline in settled water effluent quality. Coagulant dose reduction plays an important role in minimizing sludge formation, optimizing water quality and filter performance, and

decreasing chemical use required in the treatment process.

The optimization of ozone dose did not improve filter performance, however, with increased loss-of-head observed during pre-ozonation. The loss-of-head (LOH) is associated with increased air binding in the filter media, and the dissolved oxygen remained elevated at all ozone doses. The mechanism causing the increased LOH requires further investigation, as elevated LOH will impact filter performance and increase energy demand and chemical use during full-scale treatment.

Ozone was also shown to provide enhanced biofitration performance in the filter media, with ATP concentrations increasing from 51 ng/g to 86 ng/g following the addition of ozone in the source water. Bioactivity in the filter media increased following ozonation even under cold-water conditions. This may provide long-term benefits in further reducing DBP precursors and taste-and-odour compounds. Chlorinated backwash was not observed to impact water quality or the concentration of biomass in the filter. This result was important to our water treatment process in Peterborough as it indicates chlorine quenching, or modification of infrastructure to achieve chlorine-free backwash water, is not required to facilitate enhanced biofiltration performance.

Studies in 2022 will focus on decreasing the ozone retention time to 1.5 minutes, the impact of calcium thiosulphate (CTS) on coagulation and filter performance, and the potential for advanced oxidation (peroxone) to further ameliorate GSM and 2-MIB under peak flow conditions. Monitoring parameters, including ozone residual and oxidative reduction potential (ORP), will also be employed to evaluate control systems to modulate ozone dose through our SCADA software

Customer Service

Customer Calls

Customer concerns relating to water are tracked by WTP staff and logged using computer software. Some questions and concerns that were asked to our WTP staff were related to taste and odour, colour, hardness, general water quality, information on water treatment, sampling, operations, and questions to assist with school projects on water treatment.

In 2021, staff responded to a total of 20 inquiries. The 20 inquiries were related to the following concerns; 45% of customer concern calls were relating to colour (usually rusty coloured water), 5% were relating to particulate matter, a total of 50% relating to taste and odour, and 0% relating to bacteriological concerns (Chart 6). The number of calls were consistent in 2021 to those received in 2020.

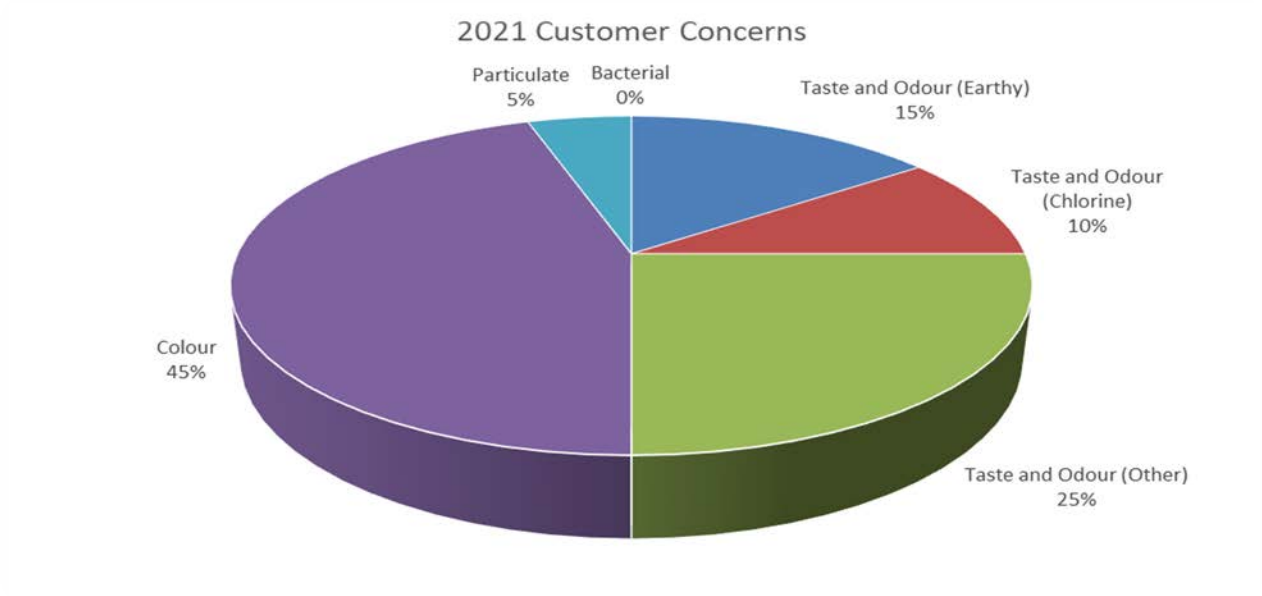
A further breakdown of the 10 taste and odour complaints revealed the following: 3 concerns were for an earthy musty odour, 2 concern was for a chlorine taste and odour, and 5 concerns were for various other taste and odours, from metallic to medicinal.

Tours

Tours have been an important part of public education at the Peterborough Water Treatment Plant. During 2021 tours were suspended as a result of the

pandemic.

Chart 6



Riverview Park & Zoo

In 2021 Riverview Park and Zoo operations were severely impacted by the COVID-19 pandemic. The Park and Zoo was closed for almost the entire year as a precautionary measure in response to the ongoing impact of the COVID pandemic. Many areas and facilities remained closed for most of the year and all our facility bookings and many of our education programs, special events, etc. were cancelled. Despite restrictions and supply issues associated with the pandemic, some progress was made on ongoing improvements to the facilities and equipment in 2021.

The zoo's animal collection saw many changes in 2021 with the deaths of some of our older animals as well as new acquisitions. Deaths included a pot-bellied pig, a Sichuan takin, a reindeer, a yak and the passing of Ferrari, our last two-toed sloth. Other changes included the acquisition of a variety of animals including tow Sichuan takin, two alpacas, a domestic yak, and one Eurasian lynx. Additions to the collection also included the birth of a meerkat and two additional successful hatchings of Sulawesi forest turtles.

Park Operation & Facilities

As noted above, most of the Park and Zoo's areas and facilities were closed for the duration of 2021. The miniature train ride was closed for the year. The zoo area was closed for the year, other than for pre-booked guided tours. The Snack Bar and the gift shop remained closed for the year. The splash pad was closed for the year. The park grounds and pathways were open for walk-through access and the disc golf course and playground both were open for limited use.

Zoo Operations & Facilities

Zoo operations and specifically animal care and wellness were identified as first priorities during the pandemic. Ensuring that excellent animal care was delivered, proved to be challenging due to staffing issues. Our operations were impacted by reduced seasonal staffing due to the fiscal impact of the pandemic, segregated teams, work areas, and routines as part of our pandemic response plan, as well as by staff absences due to COVID testing/self-isolation, etc. Having adequate resources to provide animal care required extensive adaptation and the curtailment of many non-critical activities.

Regular and emergency veterinary care was provided primarily by consulting veterinarian Dr. John Sallaway throughout 2021. Dr. Mike Cranfield remained unavailable for much of the year due to the border closure. Park and Zoo Animal Care Staff worked with Dr. Sallaway throughout the year to provide planned animal health care to the animals in our collection. Animals were examined and/or treated as part of their annual health care program. This

included physical exams, surgery, numerous vaccinations/treatments, blood samples, the trimming of many hooves/claws/beaks/tusks, dentistry, and dental cleaning.

Zoo Animal Collection

In 2021 there were 13 births/hatchings and 25 deaths of animals during the year. Postmortems were performed on those animals that had died, to determine the cause of death where possible. 23 new animals were acquired during the year.

As of December 31, 2021, the animal collection on site consisted of 127 animals, representing a total of 58 species (excluding groups of fish and invertebrates). The collection had 39 animals in on loan and 12 animals out on loan.(Table 6).

Table 6

	January 1	Birth/ Hatchings	Acquisitions	Deaths	Disposition	December 31
# Animals Owned on site	93	10	18	24	9	88
# Animals at Zoo on Loan	33	3	5	1	1	39
# Animals out on loan	23	0	0	0	2	12
Total Animals On Site	126	13	31	25	10	127

Capital Program

Work completed under the 2021 capital program included security upgrades to the takin exhibit stand-off fence, new enrichment facilities in several exhibits, new automatic water bowls in the yak and takin exhibits, a new garbage compound, renovation of the train station, and new barricades at several exhibits (part of our COVID precautions).

Revenue Contributions

In 2021, the impact of the pandemic was devastating to Riverview Park and Zoo's revenue for the year, with no train operations, no food services, and limited facility bookings and retail sales.

That being said however, the Limited-Edition Miniature Train Ride Puzzle Fundraiser was a huge success in the fall of 2021. The project was championed by Advisory Board members, who recruited 5 active retailers including Brant Basics, House of Scales, Griffins Greenhouse, Fork in the Road Country Market and Ennismore Pharmacy. With the support of these advocates, all 1,500 puzzles sold out. This 2-month effort raised $20,000 towards the Train Replacement Capital Campaign Goal of $300,000.

The Kiwanis Club of Peterborough came on board our capital train campaign as a partnership level sponsor, committing to a $25,000 donation for a train passenger coach. Support achieved in 2020/2021, in addition to online donations, brought us to $130,000 or 43% of our campaign goal by the end of 2021.

Social media fundraising campaigns continued to increase on-line donations and helped to maintain the animal adoption program while closed to the public. Dedicated volunteers and part-time staff helped to open the gift shop for holiday sales in November and December.

Local businesses stepped up to help support the Park and Zoo including Ennismore Pharmacy's Mother's Day, Father's Day and seasonal holiday raffle soliciting support from 30 local businesses for gift basket items raising $7,500 in 2021.

Businesses like Brealey Animal Clinic and the Kawartha Veterinary Association chose Riverview Park and Zoo as the recipient of the annual fundraisers with their membership or clients.

Grant applications and awards were maximized due to support funding made available in response to the COVID pandemic for the tourism sector and to encourage youth employment. Some significant examples of success include:

- Canada Summer Jobs - $20,954
- Tourism Resiliency Fund Peterborough/Kawartha's Economic Development - $8,800
- Hydro One Networks Inc., Safe Communities and Workplaces - $25,000
- Healthy Communities Fund - $18,000
- Pathway to Stewardship Delivery Partner – 2021 $5,100 & 2022 $5,100
- Employment and Social Development Canada's Enabling Accessibility - $100,000

2021/2022 Totalling $183,954

Education

In person education programs in the form of pre-booked guided tours throughout 2021 met COVID regulations and restrictions. Limited spaces were booked quickly.

Although we were unable to open the zoo area in most of 2021, our staff and volunteers were able to provide 350 guided group Tours and Treks. Tours were offered from July 2nd to October 11th, generating $5,530 in donations.

Virtual adaptations of our education programs evolved in 2021 allowing us to invest in technology and virtual classrooms in partnership with the school boards. The Bondar Challenge program connecting youth to nature through the art of photography I partnership with Otonabee Conservation engaged 28 participants who swept the Ruby Summer Camp National Award category.
Other programming included:

- virtual "Classroom Pets" "Zoo Trek" tours as delivery agents of the Pathway to Stewardship Program: Classroom Pets reaching early years classrooms focused on Landmark #3: weekly positive interactions with animals. We reached nearly 600 students with this program and received funding of $5,100 through Camp Kawartha's Ontario Trillium Foundation Grant.
- Virtual Environment Symposium with both local school boards on biodiversity and conservation in May engaged over 750 students over 2 days.

- Virtual Peterborough Children's Water Festival Water Wednesday session animated Water Festival Stations Otterly Amazing and Rolling through the Shed at the zoo had nearly 1500 participants across grade 3, 4, 7 & 8 students.
- Riverview Park and Zoo partnered with Trent University to create CALAS symposium virtual videos on "Culture of Care, Enrichment and Training Programs" at accredited zoos for professionals who work with animals in a research setting.
- The virtual Bringing the Zoo to You" campaign continued in 2021 and included live events and recorded videos available to our 22,478 followers, (4,558 Twitter, 13,00012,373 Facebook, 49004,699 Instagram).

This programming was made possible through the support of 41 active volunteers in 2021 who supported education programs and guided tours, created virtual program resources at home, participated in litter pick-up and invasive species removal day-events, sat on advisory boards and helped operate our gift shop.. These volunteers contributed over 700 hours in-kind.

In addition, we hosted 9 post-secondary placement students from Conservation Biology, Travel and Tourism, Museum and Curatorship Management Program and Alternative Education Placement Programs from Trent University and Fleming College that provided over 400 hours of research, resource development and ethogram observations in 2021.

Young Canada Works Heritage grant for Public Education student positions was increased from $10,000 to $23,000. Canada Summer Jobs awarded a $3,500 grant for a Guest Services Position.

Conservation

Last year the Park and Zoo's conservation program included our ongoing support of the Ontario Turtle Conservation Centre's conservation work by donating heat lamp bulbs, turtle feed (smelt) and equipment. The Park and Zoo also participated in the Association of Zoos and Aquariums (AZA) Stud Book for red-necked wallaby, Sichuan takin and bobcat. We also participated in the slender-tailed meerkat and common squirrel monkey AZA Species Survival Plans, as well as the Emu and Brazilian agouti Population Management Plans.

Research

In 2021 the Park and Zoo participated in the Ontario Turtle Conservation Centre's Blanding's Turtle research project as well as hosting research projects by university biology and conservation biology students.

Special Events

Unfortunately, all of the special events planned for 2021 had to be cancelled. This included the Peterborough Children's Water Festival, the Zoo Fun Run, and the Summer Concert Series

Staff & Volunteers

As of December 2020, permanent staff included 1 Manager and Curator, 1 Park and Zoo Supervisor, 1 Program Supervisor, 1 Groundskeeper, 1 Animal Care Technician, 3.5 Zookeepers and 1 Park & Zoo Maintenance.

The majority of our student positions were cancelled due to the pandemic and the employment periods of the remainder were significantly delayed/reduced. Seasonal staffing peaked in July and August with a total of 9 student employees assisting with Park and Zoo operations. Student employee positions included 4 zookeepers, 2 public educators, and 3 horticulture/ groundskeeping workers.

Appendix A – Financial Statement

PETERBOROUGH UTILITIES COMMISSION

FINANCIAL STATEMENTS

AT DECEMBER 31, 2021

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Baker Tilly KDN LLP
272 Charlotte Street
Peterborough, ON
Canada K9J 2V4

D: 705.742-3418
F: 705.742-9775

www.bakertilly.ca

INDEPENDENT AUDITOR'S REPORT

To the Chair and Members of the Peterborough Utilities Commission

Opinion
We have audited the financial statements of Peterborough Utilities Commission (the Commission), which comprise the statement of financial position as at December 31, 2021 and the statements of operations and accumulated surplus, changes in net financial assets and cash flows for the year then ended, and notes to the financial statements, including a summary of significant accounting policies.

In our opinion, the accompanying financial statements present fairly, in all material respects, the financial position of the Commission as at December 31, 2021, and the results of its operations and cash flows for the year then ended in accordance with Canadian Public Sector Accounting Standards.

Basis for Opinion
We conducted our audit in accordance with Canadian generally accepted auditing standards. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are independent of the Commission in accordance with the ethical requirements that are relevant to our audit of the financial statements in Canada, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of Management and Those Charged with Governance for the Financial Statements
Management is responsible for the preparation and fair presentation of the financial statements in accordance with Canadian Public Sector Accounting, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is responsible for assessing the Commission's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless management either intends to liquidate the Commission or to cease operations, or has no realistic alternative but to do so.

Those charged with governance are responsible for overseeing the Commission's financial reporting process.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance but is not a guarantee that an audit conducted in accordance with Canadian generally accepted auditing standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit in accordance with Canadian generally accepted auditing standards, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Commission's internal control.

- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

- Conclude on the appropriateness of management's use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Commission's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Commission to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events in a manner that achieves fair presentation.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Chartered Professional Accountants
Licensed Public Accountants

Baker Tilly KDN LLP

Peterborough, Ontario
April 21, 2022

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PETERBOROUGH UTILITIES COMMISSION
STATEMENT OF FINANCIAL POSITION
At December 31, 2021

	2021 $	2020 $
FINANCIAL ASSETS		
Cash (Note 3)	26,924,795	23,494,365
Accounts receivable		
Customer accounts	897,300	897,321
Sewer surcharge	1,304,193	1,257,438
Sundry	369,995	282,452
Unbilled water revenue on customer accounts	1,579,000	1,579,000
Unbilled sewer surcharge	1,596,000	1,596,000
	32,671,283	29,106,576
LIABILITIES		
Accounts payable and accrued charges	5,616,203	2,252,985
Sewer surcharge payable (Note 5)	3,650,094	3,543,832
Long term debt (Note 4)	13,173,275	14,216,370
Customer deposits	430,688	803,223
	22,870,260	20,816,410
NET FINANCIAL ASSETS	9,801,023	8,290,166
NON-FINANCIAL ASSETS		
Inventories	609,003	527,539
Tangible capital assets (Note 6)	120,538,685	119,408,867
	121,147,688	119,936,406
ACCUMULATED SURPLUS (Note 7)	**130,948,711**	**128,226,572**

Approved By The Commission

The accompanying notes are an integral part of this financial statement.

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PETERBOROUGH UTILITIES COMMISSION
STATEMENT OF OPERATIONS AND ACCUMULATED SURPLUS
For The Year Ended December 31, 2021

	Budget 2021 $ (Unaudited)	Actual 2021 $	Actual 2020 $
REVENUES			
Sale of water	18,321,000	18,559,285	18,351,206
Contributed capital installation charges	350,000	118,054	43,831
Development charges earned	1,437,000	831,010	58,942
Fire protection	650,000	650,000	650,000
Sewer surcharge billings	430,000	430,000	422,000
Riverview Park and Zoo (Note 11)	59,000	78,383	57,172
Interest	184,000	153,894	166,849
Other	300,000	449,686	237,612
Electricity	425,000	300,110	336,372
Donations	25,000	51,877	4,603
	22,181,000	21,622,299	20,328,587
EXPENSES			
Water treatment and storage	4,766,000	4,133,072	4,189,684
Water distribution	2,324,000	2,418,859	2,530,589
Riverview Park and Zoo (Note 11)	1,589,000	1,745,718	1,678,329
Administration	4,018,000	4,145,871	3,769,095
Amortization	6,300,000	6,103,414	6,197,228
Interest	417,000	353,226	276,843
	19,414,000	18,900,160	18,641,768
ANNUAL SURPLUS	2,767,000	2,722,139	1,686,819
OPENING ACCUMULATED SURPLUS	127,761,000	128,226,572	126,539,753
CLOSING ACCUMULATED SURPLUS	**130,528,000**	**130,948,711**	**128,226,572**

The accompanying notes are an integral part of this financial statement.

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PETERBOROUGH UTILITIES COMMISSION
STATEMENT OF CASH FLOWS
For The Year Ended December 31, 2021

	2021 $	2020 $
CASH PROVIDED BY (USED IN):		
OPERATIONS		
Annual surplus	2,722,139	1,686,819
Add: Non-cash charges to operations		
Amortization	6,103,414	6,197,228
Contributed capital installation charges	(118,054)	(43,831)
	8,707,499	7,840,216
Change in non-cash working capital items (Note 8)	2,881,204	(627,803)
	11,588,703	7,212,413
INVESTING ACTIVITY		
Purchase of tangible capital assets	(7,115,178)	(3,437,043)
FINANCING ACTIVITIES		
Repayment of long term debt	(1,043,095)	(1,389,333)
Long term debt proceeds	-	6,000,000
	(1,043,095)	4,610,667
NET CHANGE IN CASH DURING THE YEAR	3,430,430	8,386,037
CASH POSITION - BEGINNING OF YEAR	23,494,365	15,108,328
CASH POSITION - END OF YEAR	**26,924,795**	**23,494,365**

The accompanying notes are an integral part of this financial statement.

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PETERBOROUGH UTILITIES COMMISSION
STATEMENT OF CHANGES IN NET FINANCIAL ASSETS
For The Year Ended December 31, 2021

	Budget 2021 $ (Unaudited)	Actual 2021 $	Actual 2020 $
Annual Surplus	2,767,000	2,722,139	1,686,819
Acquisition Of Tangible Capital Assets	(11,599,000)	(7,233,232)	(3,480,874)
Amortization Of Tangible Capital Assets	6,300,000	6,103,414	6,197,228
Decrease (Increase) in Inventories	-	(81,464)	(104,200)
Decrease (Increase) in Prepaid Expenses	-	-	291,424
Change In Net Financial Assets	(2,532,000)	1,510,857	4,590,397
Net Financial Assets, beginning of year	7,448,000	8,290,166	3,699,769
Net Financial Assets, end of year	**4,916,000**	**9,801,023**	**8,290,166**

The accompanying notes are an integral part of this financial statement.

PETERBOROUGH UTILITIES COMMISSION
NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended December 31, 2021

1. NATURE OF ORGANIZATION

Operating under the authority of the Municipal Act, the Peterborough Utilities Commission (the "Commission") provides water services to the residents of the City of Peterborough along with operational governance and funding for the Riverview Park and Zoo.

2. SIGNIFICANT ACCOUNTING POLICIES

The financial statements of the Peterborough Utilities Commission have been prepared in accordance with Canadian generally accepted accounting principles for local governments and their local boards as recommended by the Public Sector Accounting Board of the Chartered Professional Accountants Canada.

Significant aspects of the accounting policies adopted by the Commission are as follows:

(a) Recognition of Revenue and Expenses

Revenue is recorded using the accrual basis of accounting, as water is used by customers. Unbilled revenue is calculated as the estimated consumption between the last meter reading date and the year end date.

The value of distribution systems installed by developers is recorded in revenue as capital installation charges in the year in which the Commission assumes ownership at the fair market value.

Development charges are recognized as revenue when they are transferred out of the reserve fund and spent on growth related projects.

Revenue from fire protection, sewer charges and electricity is recognized when the service is provided.

Expenses are recognized in the period the goods or services are acquired and a legal liability is incurred by transfers are due.

(b) Management Estimates

The preparation of financial statements in conformity with Canadian generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities as well as the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenditures during the year. Significant estimates and assumptions used in the preparation of financial statements include, but are not limited to: estimates of revenue, allowance for doubtful accounts, and amortization rates and carrying values of property, plant and equipment. Actual results could differ from these estimates.

(c) Inventories

Inventories consist of maintenance supplies and construction materials and are valued at the lower of moving average cost and replacement cost.

(d) Tangible Capital Assets

Tangible capital assets are stated at cost or deemed cost. Amortization on the water treatment plant and reservoirs, distribution system and Riverview Park and Zoo (purchased from operating and donated funds) is recorded on a declining balance basis at a rate of 5% per annum. Water meters are amortized on a straight line basis over 20 years. The Commission capitalizes assets with a value of $5,000 or greater.

Tangible capital assets categorized as construction-in-progress are not amortized until they are put into service.

PETERBOROUGH UTILITIES COMMISSION
NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended December 31, 2021

2. **SIGNIFICANT ACCOUNTING POLICIES** - (Continued)

(e) Reserve Funds

Certain amounts as approved by the Commission and those required under legislative or other authority are set aside in reserve funds for future operating or capital purposes. Transfers to and/or from reserve funds are an adjustment to the respective fund when approved or required by agreement.

The following reserve funds are included in the accumulated surplus:

(i) Water Treatment Plant Reserve Fund

In December 1990, the City of Peterborough passed a by-law authorizing the Peterborough Utilities Commission to establish a reserve fund for the purpose of upgrading the water treatment plant. The established practice is to appropriate 4.2% of the water revenues to this fund each year. Utilization of these funds is authorized by the Commission.

(ii) Development Charges Act Reserve Fund

The Peterborough Utilities Commission is authorized under the City of Peterborough by-law to establish a reserve fund for development charges. The purpose of the fund is to cover growth related net capital costs incurred by the Water Utility for water treatment, storage and distribution systems.

(iii) Park And Zoo Major Projects Reserve Fund

In September 1993, the City of Peterborough passed a by-law authorizing the Peterborough Utilities Commission to establish a reserve fund for major projects at the Riverview Park and Zoo. The revenues received for this fund include donations from estates and the general public, the utility's share of profits from the refreshment booth operations and profits from the sale of birds and animals. Utilization of these funds is authorized by the Commission on a project by project basis based upon the recommendation of the Riverview Park and Zoo Advisory Committee.

(iv) Park and Zoo Animal Care Reserve Fund

In July 1999, the City of Peterborough passed a by-law authorizing the Peterborough Utilities Commission to establish a reserve fund for animal care at the Riverview Park and Zoo. The fund was established through a capital donation from a Peterborough resident. The income generated annually will be used for the care, treatment, habitat or display of the animals at the Riverview Park and Zoo for special or exceptional purposes beyond standard care.

(v) Park and Zoo State of Good Repair Reserve Fund

In November 2016, the Commission authorized the establishment of an internally restricted Riverview Park and Zoo state of good repair reserve fund. The purpose of the fund is to cover major repair and maintenance costs incurred by the Riverview Park and Zoo that would be required to maintain the quality of its tangible capital assets.

(f) Non-Financial Assets

Tangible capital and other non-financial assets are accounted for as assets by the Commission because they can be used to provide services in future periods. These assets do not normally provide resources to discharge the liabilities of the Commission unless they are sold.

PETERBOROUGH UTILITIES COMMISSION
NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended December 31, 2021

2. **SIGNIFICANT ACCOUNTING POLICIES** - (Continued)

(g) Inter-Entity Transactions

The organization has an agreement with the City of Peterborough, which results in transactions between the two entities.

Allocated costs between the City of Peterborough and the Commission, are measured at the exchange amount, which is the amount of consideration established and agreed to by the parties.

Unallocated costs are measured at the carrying amount, which is the amount recorded in the records of the City of Peterborough.

3. **CASH**

	2021 $	2020 $
Unrestricted cash	15,713,115	13,180,507
Restricted cash	11,211,680	10,313,858
	26,924,795	23,494,365

4. **LONG TERM DEBT**

Long term debt is issued on behalf of the Commission by The Corporation of the City of Peterborough and consists of the following:

Date of Maturity/Payment Terms	Interest Rate %	2021 $	2020 $
July 5, 2027, semi-annual blended payments of $274,120	3.18	2,973,275	3,416,370
November 6, 2036, semi-annual principal payments of $150,000 plus interest	2.79	4,500,000	4,800,000
December 15, 2040, semi-annual principal payments of $150,000 plus interest	2.04	5,700,000	6,000,000
		13,173,275	14,216,370

PETERBOROUGH UTILITIES COMMISSION
NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended December 31, 2021

4. **LONG TERM DEBT**- (Continued)

Future repayments for the long term debt are as follows:

	Principal $	Interest $	Total $
2022	1,057,297	329,129	1,386,426
2023	1,071,955	299,982	1,371,937
2024	1,087,083	270,947	1,358,030
2025	1,102,695	240,262	1,342,957
2026	1,118,808	209,659	1,328,467
Thereafter	7,735,437	1,073,992	8,809,429
	13,173,275	2,423,971	15,597,246

5. **RELATED PARTY AND INTER-ENTITY TRANSACTIONS**

The Commission is a board of the City of Peterborough and is consolidated with the City's financial statements. In the ordinary course of business, the Commission enters into transactions with the Corporation of the City of Peterborough and other related corporations. These transactions, which include the sale of water and the purchase and sale of other goods and services, are exchanged at the same prices and terms as arm's length customers. The affiliated corporations of the Commission are:

The City of Peterborough Holdings Inc.,
Peterborough Utilities Services Inc.,
Peterborough Utilities Inc., and
PUG Services Corp.

Details of services provided to Peterborough Utilities Commission during the year by Peterborough Utilities Services Inc. are as follows:

	2021 $	2020 $
Expenditures		
Professional services	9,188,882	8,511,592
Building rent	370,405	381,216
Software and equipment rent	171,739	109,147
	9,731,026	9,001,955

Billing and collecting for the sewer surcharge is done by the Commission for the City of Peterborough. During the year $430,000 (2020 - $422,000) was recognized as revenue for providing this service. At December 31, the sewer surcharge payable of $3,650,094 (2020 - $3,543,832) recognized on the statement for financial position is payable to the City of Peterborough. All amounts owing to the City are unsecured, without interest and no specific terms of repayment.

PETERBOROUGH UTILITIES COMMISSION
NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended December 31, 2021

6. **TANGIBLE CAPITAL ASSETS**

	Water Treatment Plant and Reservoirs $	Water Distribution System $	Riverview Park and Zoo $	Other $	Construction In Progress $	Total $
Cost Or Deemed Cost						
Balance at January 1, 2020	51,024,728	182,520,927	11,287,467	17,403	443,362	245,293,887
Additions	285,174	613,311	198,704	-	2,383,685	3,480,874
Balance At December 31, 2020	51,309,902	183,134,238	11,486,171	17,403	2,827,047	248,774,761
Additions	228,071	5,860,957	292,217	-	851,987	7,233,232
Balance At December 31, 2021	51,537,973	188,995,195	11,778,388	17,403	3,679,034	256,007,993
Accumulated Amortization						
Balance at January 1, 2020	26,003,804	92,119,190	5,028,421	17,251	-	123,168,666
Amortization for the year	1,145,691	4,733,609	317,920	8	-	6,197,228
Balance At December 31, 2020	27,149,495	96,852,799	5,346,341	17,259	-	129,365,894
Amortization for the year	1,101,238	4,687,872	314,297	7	-	6,103,414
Balance At December 31, 2021	28,250,733	101,540,671	5,660,638	17,266	-	135,469,308
Net Book Value						
At December 31, 2020	24,160,407	86,281,439	6,139,830	144	2,827,047	119,408,867
At December 31, 2021	23,287,240	87,454,524	6,117,750	137	3,679,034	120,538,685

PETERBOROUGH UTILITIES COMMISSION
NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended December 31, 2021

7. ACCUMULATED SURPLUS

Accumulated surplus consists of the following:

	2021 $	2020 $
Operating surplus	12,371,621	12,720,217
Investment in tangible capital assets		
Tangible capital assets - net book value	120,538,685	119,408,867
Long term debt	(13,173,275)	(14,216,370)
Reserve funds (Note 10)	11,211,680	10,313,858
	130,948,711	128,226,572

8. CHANGE IN NON-CASH WORKING CAPITAL ITEMS AND OTHER INFORMATION

	2021 $	2020 $
Accounts receivable	(134,277)	(292,775)
Unbilled revenue and sewer surcharge	-	(513,000)
Inventories	(81,464)	(104,200)
Prepaid expenses	-	291,424
Accounts payable and sewer surcharge payable	3,469,480	(98,148)
Customer deposits	(372,535)	88,896
	2,881,204	(627,803)
Other information:		
Interest paid	357,822	274,740

9. BUDGET FIGURES

The budget, approved by the Commission, for 2021 is reflected on the Statement of Operations and Accumulated Surplus and the Statement of Changes in Net Financial Assets. The budgets established for capital investment in tangible capital assets are on a project-oriented basis, the costs of which may be carried out over one or more years and, therefore may not be comparable with current year's actual amounts. Budget figures have been reclassified for the purposes of these financial statements to comply with Public Sector Accounting Board reporting requirements. Budget figures are not subject to audit.

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10. RESERVE FUNDS

	Budget 2021 $ (Unaudited)	Actual 2021 $	Actual 2020 $
TRANSFERS FROM OPERATIONS:			
Sale of water	764,000	773,303	757,605
Development charges	1,437,000	831,010	58,942
Interest	87,000	74,211	93,598
Donations	25,000	51,877	4,603
	2,313,000	1,730,401	914,748
TRANSFERS			
For tangible capital assets	(1,437,000)	(832,579)	(59,289)
CHANGE IN RESERVE FUNDS	876,000	897,822	855,459
OPENING RESERVE FUNDS	10,173,000	10,313,858	9,458,399
CLOSING RESERVE FUNDS	**11,049,000**	**11,211,680**	**10,313,858**
ANALYZED AS FOLLOWS:			
INTERNALLY RESTRICTED			
Water treatment plant reserve fund	10,006,000	9,953,856	9,115,396
Park and zoo state of good repair reserve fund	107,000	104,394	103,674
	10,113,000	10,057,165	9,219,070
EXTERNALLY RESTRICTED			
Park and Zoo major projects reserve fund	660,000	660,697	604,410
Park and Zoo major animal care reserve fund	276,000	493,838	490,378
	936,000	1,154,515	1,094,788
	11,049,000	**11,211,680**	**10,313,858**

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11. OPERATIONS FOR RIVERVIEW PARK AND ZOO

	Budget 2021 $ (Unaudited)	Actual 2021 $	Actual 2020 $
EXPENSES			
Maintenance park	592,000	474,436	408,137
Maintenance train	3,000	2,858	82
Animal care and zoo maintenance	994,000	1,268,424	1,270,110
	1,589,000	1,745,718	1,678,329
REVENUES			
Train	-	-	-
Miscellaneous	59,000	78,383	57,172
	59,000	78,383	57,172
NET EXPENSES FOR THE YEAR	**1,530,000**	**1,667,335**	**1,621,157**

12. COVID-19

On March 11, 2020, the World Health Organization categorized COVID-19 as a pandemic. The potential economic effects within the Commission's environment and in the global markets, possible disruption in supply chains, and measures being introduced at various levels of government to curtail the spread of the virus (such as travel restrictions, closures of non-essential municipal and private operations, imposition of quarantines and social distancing) could have a material impact on the Commission's operations. The extent of the impact of this outbreak and related containment measures on the Commission's operations cannot be reliably estimated at this time, and no amounts have been recorded in these financial statements.

Appendix B – Abbreviations

Abbreviation	Full Description
2-MIB	2-methlisoborneol
CFU	Colony Forming Unit
COD	Chemical Oxidization Demand
CTS	Calcium Thiosulphate
DBP	Disinfection by-product
DWQMS	Drinking Water Quality Standard
DWRG	Drinking Water Research Group
EDC	Endocrine disrupting compounds
HAA	Haloacetic Acid
KM	Kilometers
L/m	Litres per Minute
m2	Square Meters
m3	Cubic Meters
MAC	Maximum Acceptable Concentration
mg/L	Milligram per Litre
ML	Megalitres
MECP	Ministry of Environment & Climate Change
MOH	Medical Officer of Health
ηg/L	Nanogram per Litre
NTU	Nephelometric Turbidity Unit
ODWQS	Ontario Drinking Water Quality Standards
ORCA	Otonabee Region Conservation Authority
ORP	Oxidative Reduction Potential
PACL	Polyaluminum Hydroxychloride
PUC	Peterborough Utilities Commission
PUGSC	Peterborough Utilities Services Inc.
RP& Z	Riverview Park & Zoo
STS	Sodium thiosulphate
THM	Trihalomethane
TOC	Total Organic Carbon
µg/L	Microgram per Litre
UVA	Ultra Violet Absorbance
WTP	Water Treatment Plant