

PETERBOROUGH UTILITIES COMMISSION

June 15, 2020

COMMISSION AGENDA
2020:06:25

NOTICE & AGENDA

A MEETING OF THE PETERBOROUGH UTILITIES COMMISSION WILL BE HELD ON **THURSDAY, JUNE 25, 2020 AT 4:00 P.M.** THE MEETING WILL BE HELD USING MICROSOFT TEAMS.

0.01 **CALL TO ORDER**

0.02 **DECLARATION OF PECUNIARY INTEREST**

1. **CONSENT AGENDA**

1.01 MINUTES - MAY 26, 2020

1.02 OPERATING REPORT - APRIL 2020 - MAY 2020

1.03 APPROVAL OF POLICY UPDATES

2. **REPORTS**

2.01 FINANCIAL UPDATE FOR THE FIVE MONTH PERIOD ENDED MAY 31, 2020

2.02 ANNUAL DRINKING WATER REPORT

3. **COMMUNICATIONS**

NONE

4. **NEW BUSINESS**

5. **DATE OF NEXT MEETINGS**

SEPTEMBER 26, 2019

6. **ADJOURNMENT**

MINUTES OF THE **VIRTUAL** MEETING OF THE PETERBOROUGH UTILITIES COMMISSION HELD ON **TUESDAY, MAY 26, 2020 AT 2:00 P.M.** THE MEETING WAS HELD USING MICROSOFT TEAMS.

0.01 **CALL TO ORDER**

0.02 **DECLARATION OF PECUNIARY INTEREST**

1. **CONSENT AGENDA**

1.01 MINUTES – DECEMBER 5, 2019

1.02 OPERATING REPORTS

- NOVEMBER 2019
- DECEMBER 2019
- JANUARY 2020
- FEBRUARY 2020
- MARCH 2020

2. **REPORTS**

2.01 FISCAL 2019 AUDITOR'S REPORT

2.02 FISCAL 2019 AUDITED FINANCIAL RESULTS

2.03 WATER DEVELOPMENT CHARGES FOR THE YEAR ENDED DECEMBER 31, 2019

2.04 INTERIM UNAUDITED FINANCIAL STATEMENTS FOR THE THREE MONTH PERIOD ENDED MARCH 31, 2020

2.05 TENDER CONTRACT W-2020-3 CONSTRUCTION OF NEW BULK WATER FILL STATION

2.06 2019 MANAGEMENT REVIEW RESULTS FOR THE DRINKING WATER QUALITY MANAGEMENT SYSTEM

2.07 2019 SUMMARY REPORT FOR MUNICIPALITIES PETERBOROUGH WATER TREATMENT PLANT

3. **COMMUNICATIONS**

4. **NEW BUSINESS**

Chair

Read and approved this

day of

2020

5. **DATE OF NEXT MEETING**

JUNE 25, 2020

6. **ADJOURNMENT**

Chair

Read and approved this

day of

2020

MINUTES OF THE **VIRTUAL** MEETING OF THE PETERBOROUGH UTILITIES COMMISSION HELD ON **TUESDAY, MAY 26, 2020 AT 2:00 P.M.** THE MEETING WAS HELD USING MICROSOFT TEAMS.

Present: Mayor Diane Therrien, Chair
Councillor Don Vassiliadis, Vice-Chair
Councillor Gary Baldwin
Councillor Dean Pappas
Councillor Steven Wright

Staff members present: Mr. John Stephenson, President & CEO
Mr. Kyle Davis, CFO
Mr. Pat Devlin, Vice-President, Water Utility Services
Mr. David Whitehouse, Vice-President Corporate & Customer Service
Ms. Chrissy Rusaw, Executive Assistant

Guest: Ms. Joanna Park, Baker Tilly

1. CONSENT AGENDA

1.01 MINUTES – DECEMBER 5, 2019

1.02 OPERATING REPORTS

- NOVEMBER 2019
- DECEMBER 2019
- JANUARY 2020
- FEBRUARY 2020
- MARCH 2020

It was moved by Councillor D. Pappas, seconded by Councillor S. Wright and carried:

“THAT the consent agenda be approved.”

2. REPORTS

2.01 FISCAL 2019 AUDITOR’S REPORT

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

Chair

Read and approved this

day of

2020

“THAT the report be received.”

2.02 FISCAL 2019 AUDITED FINANCIAL RESULTS

Ms. J. Park provided an overview of the report and stated that it was a clean audit opinion.

It was moved by Councillor S. Wright, seconded by Councillor D. Pappas and carried:

“THAT the reports be received for information.”

2.03 WATER DEVELOPMENT CHARGES
FOR THE YEAR ENDED DECEMBER 31, 2019

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

“THAT the report be received for information.”

2.04 INTERIM UNAUDITED FINANCIAL STATEMENTS
FOR THE THREE MONTH PERIOD ENDED MARCH 31, 2020

It was moved by Councillor D. Vassiliadis, seconded by Councillor S. Wright and carried:

“THAT the report be received for information.”

2.05 TENDER CONTRACT W-2020-3 CONSTRUCTION OF
NEW BULK WATER FILL STATION

The Commission requested a demonstration be arranged on the operation of the bulk water fill station.

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

“THAT tender W-2020-3 for the construction of a new bulk water fill station be awarded to Coco Paving Inc. for the tendered amount of \$445,615.83 (including Provisional Items and Contingency Allowance).”

Chair

2.06 **2019 MANAGEMENT REVIEW RESULTS FOR THE
DRINKING WATER QUALITY MANAGEMENT SYSTEM**

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

“THAT the report be received for information.”

2.07 **2019 SUMMARY REPORT FOR MUNICIPALITIES
PETERBOROUGH WATER TREATMENT PLANT**

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

“THAT the report be received for information.”

4. **COMMUNICATIONS**

None

5. **NEW BUSINESS**

None

6. **DATE OF NEXT MEETINGS**

JUNE 25, 2020

7. **ADJOURNMENT**

The Chair accepted a motion of adjournment by Councillor D. Pappas seconded by Councillor S. Wright at 2:37 p.m.

Chair

Read and approved this

day of

2020

PETERBOROUGH UTILITIES COMMISSION **REPORT**

1.02

May 6, 2020

COMMISSION AGENDA
2020:06:25

OPERATING REPORT – APRIL 2020

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 2020 for the various departments:

Water Distribution Department

| | <u>April 2020</u> | <u>April 2019</u> | <u>Increase Or Decrease</u> |
|-----------------------------------|-----------------------|-----------------------|---------------------------------|
| Services Installed | 0 | 0 | 0 |
| Services Repaired | 5 | 3 | +2 |
| Services Replaced | 0 | 1 | -1 |
| Services Cut-Off | 0 | 0 | 0 |
| Services Lowered or Insulated | 0 | 0 | 0 |
| Service Valves and Posts Repaired | 0 | 19 | -19 |
| Fire Hydrants Installed | 0 | 0 | 0 |
| Fire Hydrants Replaced | 0 | 0 | 0 |
| Fire Hydrants Repaired | 10 | 1 | +9 |
| Mainline Valves Installed | 0 | 3 | -3 |
| Mainline Valves Replaced | 0 | 0 | 0 |
| Mainline Valves Repaired | 0 | 0 | 0 |
| Mainline Valve Box Repairs | 0 | 0 | 0 |

Customer Service Interruptions

| <u>Address</u> | <u>Reason</u> | <u>Length of Interruption</u> | <u>No. of Customers Affected</u> |
|-----------------------|----------------|-----------------------------------|--------------------------------------|
| 519 Cameron Street | Broken main | 0.2 hrs | 4 |
| 584 Homewood Avenue | Service repair | 0.1 hrs | 27 |
| 160 Sherbrooke Street | Service repair | 2 hrs | 10 |

One hundred and thirty-eight backflow tests and 14 backflow prevention surveys were completed.

Crews have separated due to the pandemic.

Water Treatment Plant and Pumping Stations

| | <u>April 2020</u> | <u>April 2019</u> | <u>Increase Or Decrease</u> | <u>%</u> |
|--|-----------------------|-----------------------|-------------------------------------|----------|
| <u>Water Pumpage (ML)</u> | | | | |
| Total Pumpage (ML) | 695.1 | 733.7 | -38.6 | -5% |
| <u>Rate of Pumpage (ML per day)</u> | | | | |
| Maximum Day | 24.7 | 29.0 | -4.3 | -15% |
| Average Day | 23.1 | 24.4 | -1.3 | -5% |
| <u>Chemical Treatment (Average) (Milligrams per Litre)</u> | | | | |
| Contact Tank – Chlorine | 1.7 | 2.0 | -0.3 | -15% |
| Coagulant (Alum) | 49.2 | 51.0 | -1.8 | -4% |
| Coagulant (PaCl) | | | | |
| BW46 M Sodium Silicate (Corrosion Control & pH Adjustment) | 0 | 7.5 | -7.5 | -100% |
| Fluoride – Total | 0.7 | 0.6 | 0.1 | 17% |
| Water °C | 6.2 | 4.6 | 1.6 | |
| Precipitation (mm) | 70.1 | 109.9 | -9.7 | |

Water Treatment Plant

Sedimentation Basins 1-4 were washed out and sludge cars were inspected and repaired as necessary.

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

The Fluoride feed pump was completely rebuilt.

The probe for the inline Fluoride analyzer was replaced.

A failed wall mounted chlorine sensor in the low lift pump room was replaced with a new Oldham iTrans 2 unit.

The level transmitter for Filter #3 failed and was replaced with a new Miltronics unit.

Pumping Stations

The airport inline chlorine analyzer was completely rebuilt.

Fairmount Pumping Station: Pump #3 failed to start due to a faulty operating solenoid. The Solenoid was replaced.

Reservoirs

A faulty UPS (uninterrupted power source) at Milroy Elevated Tank was replaced.

Pumphouse

The Logging Machine required repairs to the operating spud bracket.

Normal maintenance and repairs were carried out.

Riverview Park and Zoo

In April, all bookings were canceled as part of our response to the COVID-19 pandemic.

All of the Park and Zoo's education programs, tours, workshops, events etc. originally scheduled in April were canceled.

In April, the Park and Zoo continued to implement our operational response to the COVID-19 pandemic. Operational plans/routines for staff were revised with non-essential staff relocating to work from home and with essential staff segregating into four separate and independent teams working from the separate operating centres and on two divided shifts. Contracts for non-essential services remained suspended or canceled. These measures provide isolation and redundancy with the intent of reducing the impact of any potential infection and/or quarantine involving staff.

With the number of Park and Zoo staff remaining on-site reduced in response to the COVID-19 outbreak, the majority of their time was spent on essential animal care and facility maintenance. Remote staff worked on a variety of administrative tasks including data entry, records clean-up and continuing the increased presence on our social media pages.

There were no significant changes to the animal collection in April.

Regular/planned animal health activities included preventative medications provided as prescribed to camels, lemur, macaws and river otter.

Five hundred and eighty-one enrichment activities were performed with a variety of species within the collection during the month.

Eight active individual or group training sessions representing 3 species and 4 individual specimens occurred during the month of April.

With the number of Park and Zoo staff remaining on-site reduced in response to the COVID-19 outbreak, the majority of their time was spent on essential animal care and facility maintenance. Remote staff worked on a variety of administrative tasks including data entry, records clean-up and continuing the increased presence on our social media pages.

Scheduled Public Hours

Weekday and Weekends

*****The Park and Zoo closed effective Saturday March 14 as a precautionary measure in response to the COVID-19 outbreak.**

| PARK PROPERTY | ZOO EXHIBITS | SNACK BAR | TRAIN RIDE |
|----------------------|---------------------|------------------|-------------------|
| Closed | Closed | Closed | Closed |

| GUEST SERVICES | NORTH WASHROOM | SOUTH WASHROOM | PICNIC AREA & WASHROOM |
|-----------------------|-----------------------|-----------------------|-----------------------------------|
| Closed | Closed | Closed | Closed |

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 17, 2020

COMMISSION AGENDA
2020:06:25

OPERATING REPORT – MAY 2020

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 May 2020 for the various departments:

Water Distribution Department

| | <u>May 2020</u> | <u>May 2019</u> | <u>Increase Or Decrease</u> |
|-----------------------------------|---------------------|---------------------|---------------------------------|
| Services Installed | 3 | 0 | +3 |
| Services Repaired | 4 | 12 | -8 |
| Services Replaced | 0 | 0 | 0 |
| Services Cut-Off | 3 | 0 | +3 |
| Services Lowered or Insulated | 0 | 0 | 0 |
| Service Valves and Posts Repaired | 1 | 16 | -15 |
| Fire Hydrants Installed | 0 | 0 | 0 |
| Fire Hydrants Replaced | 0 | 0 | 0 |
| Fire Hydrants Repaired | 7 | 0 | +7 |
| Mainline Valves Installed | 0 | 0 | 0 |
| Mainline Valves Replaced | 1 | 0 | +1 |
| Mainline Valves Repaired | 0 | 0 | 0 |
| Mainline Valve Box Repairs | 0 | 0 | 0 |

Customer Service Interruptions

| <u>Address</u> | <u>Reason</u> | <u>Length of Interruption</u> | <u>No. of Customers Affected</u> |
|--------------------|----------------|-----------------------------------|--------------------------------------|
| 546 Gilmour Street | Service repair | 0.75 hrs | 1 |
| 571 O'Connell Road | Service repair | 0.75 hrs | 32 |
| 1210 Edmison Drive | Service repair | 0 hrs | 1 |

One hundred and nine backflow tests and 3 backflow prevention surveys were completed.

Crews have separated due to the pandemic.

Water Treatment Plant and Pumping Stations

| | <u>May 2020</u> | <u>May 2019</u> | <u>Increase Or Decrease</u> | <u>%</u> |
|--|---------------------|---------------------|-------------------------------------|----------|
| <u>Water Pumpage (ML)</u> | | | | |
| Total Pumpage (ML) | 800.2 | 786.7 | 13.5 | 2% |
| <u>Rate of Pumpage (ML per day)</u> | | | | |
| Maximum Day | 31.1 | 28.5 | 2.6 | 9% |
| Average Day | 25.8 | 25.3 | 0.5 | 2% |
| <u>Chemical Treatment (Average) (Milligrams per Litre)</u> | | | | |
| Contact Tank – Chlorine | 2.2 | 2.2 | 0 | |
| Coagulant (Alum) | 44.8 | 49.0 | -4.2 | -9% |
| Coagulant (PaCl) | | | | |
| BW46 M Sodium Silicate (Corrosion Control & pH Adjustment) | 0 | 9.2 | -9.2 | -100% |
| Fluoride – Total | 0.7 | 0.7 | 0 | |
| Water °C | 13.4 | 12.4 | 1.0 | |
| Precipitation (mm) | 62.8 | 120.1 | -57.3 | |

Water Treatment Plant

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

Preventative maintenance was completed on all six sedimentation basins.

One of the Water Treatment Plant 2020 Capital projects was to install Granular Activated Carbon (GAC) caps on Filters #10 and #11 to aid in organic removal. The

week of May 25 12 centimeters of anthracite was removed from Filters #10 and #11 and replaced with 12 centimeters of GAC.

Pumping Stations

Clonsilla Pumping Station and Scollard Pumping Station: both required sump pump replacement.

Fairmount Pumping Station: an operating solenoid was replaced on Pump #3.

Pumphouse

Emergency lighting in the basement at the Pumphouse was upgraded by the WTP electrician.

Normal maintenance and repairs were carried out.

Riverview Park and Zoo

In May all bookings were canceled as part of our response to the COVID-19 pandemic.

All Park and Zoo's education programs, tours, workshops, events etc. originally scheduled in May were canceled.

In May the Park and Zoo continued to implement our operational response to the COVID-19 pandemic. Operational plans/routines for staff were revised with non-essential staff relocating to work from home and with essential staff segregating into four separate and independent teams working from the separate operating centres and on two divided shifts. Contracts for non-essential services remained suspended or canceled. These measures provide isolation and redundancy with the intent of reducing the impact of any potential infection and/or quarantine involving staff.

In May changes to the animal collection included the acquisition of a young male Bactrian camel and a Dumeril's boa constrictor.

Regular/planned animal health activities included preventative medications provided as prescribed to camels, lemur, macaws and river otter.

There were 1,152 enrichment activities performed with a variety of species within the collection during the month.

Three active individual or group training sessions representing 1 species and 4 individual specimens occurred during the month of May.

With the number of Park and Zoo staff on-site still limited in response to the COVID-19 outbreak, most of their time was spent on essential animal care and facility maintenance. Remote staff worked on a variety of administrative tasks including data entry, records clean-up, distance education resources and continuing the increased presence on our social media pages.

Scheduled Public Hours

Weekday and Weekends

*****The Park and Zoo closed effective Saturday March 14 as a precautionary measure in response to the COVID-19 outbreak.**

| PARK PROPERTY | ZOO EXHIBITS | SNACK BAR | TRAIN RIDE |
|----------------------|---------------------|------------------|-------------------|
| Closed | Closed | Closed | Closed |

| GUEST SERVICES | NORTH WASHROOM | SOUTH WASHROOM | PICNIC AREA & WASHROOM |
|-----------------------|-----------------------|-----------------------|-----------------------------------|
| Closed | Closed | 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

June 15, 2020

1.03

COMMISSION AGENDA
2020:06:25

APPROVAL OF POLICY UPDATES

RECOMMENDATION:

THAT the following Policies be approved:

- Bursaries - includes RL Beck Bursary
- Riverview Park & Zoo Funding
- Riverview Park and Zoo Donor Recognition
- Supply of Treated Water Riverview Park & Zoo
- Use of Fire Hydrants for Non-Fire Purposes
- Water Metering Options - Multi Residential

AND THAT the following Policies be rescinded:

- Access to Water Meters in Customer Premises
- Archival Records
- Attendance at Conferences and
- Barrier-Free Access
- Billing Inserts
- Code of Ethics
- Collection of Delinquent Accounts Policy
- Commissioners Honorarium and Per Diem
- Conflict of Interest
- Cross Connection Control
- Customer Service & Account
- Donation Policy
- Drinking Water Quality
- Elimination of Dead-End Water Mains
- Emergency Operations
- Environmental Policy
- Expenses – Commissioners
- Liability of Commissioners and Employees
- Logo
- Major Project Design and Construction
- Management of Vegetation
- Marketing & Communications
- Mission Statement
- Performance Measurement
- Pets at the Riverview Park and Zoo
- Records Management
- Reliability and Restoration of Services
- Review of Plant Condition

- Riverview Park and Zoo Advisory Committee
- Seniors Transportation to Riverview Park and Zoo
- Third-Party Antennas on PUC Facilities
- Treatment of Water Metering Costs
- Use of Tranquillizing Equipment, Capture Equipment and Services
- Utilities Coordinating Committee
- Water Capital Charges
- Water Main Frontage Charges
- Water Metering Options for Wireless
- Water Rate Structure

Prepared by: Chrissy Rusaw, Executive Assistant

Submitted by: John Stephenson, President & CEO

Approved for Submission by: _____
President & CEO

Background

The Peterborough Utilities Commission policies needed to be reviewed and brought up-to-date. This project has now been completed and is being brought to the Commission for approval.

Management Discussion

In 2015 the Commission approved a document entitled Conditions of Service. There are numerous requirements and standards in order to provide municipal water service to the customers in the City of Peterborough and this well-organized document describes these operating practices and connection policies. The Conditions of Service document is approved by the Commission when required.

Since the adoption of the Conditions of Service document there is no longer a need for many of the old policies. The Vice-President of Water and the Water Quality Manager did a complete review of all policies and the result of that review is being presented to you for approval.

The President & CEO asked that all policies for the various companies, including the Commission, be organized under one index to make it easier for employees to use. You will notice that the Bursaries Policy includes two sections that pertain to the CoPHI group and also includes the RL Beck bursary. This is the only policy that requires approval by both PUC and CoPHI. The RL Beck bursary policy has not been changed, it has just been combined into one document with the other bursaries.

There are several policies that already exist under the PUG umbrella such as the Code of Ethics, Donation Policy and Bill Inserts and do not need to be duplicated for the PUC.

Budget and Financial Implications

None

Risk Evaluation

It is good governance practices to review policies and keep them updated.

Attachments: Policies



1867 Ashburnham Drive
PO Box 4125, Station Main
Peterborough ON K9J 6Z5
(705) 748-9300

PUG POLICY

| | | | |
|-------------------------------------|---|--|---|
| Name of Policy: Bursaries | | Responsible Department: Corporate Services | |
| Date Established: Various | Approval Date by Board: April 2, 2020 Approval Date by Commission: June 25, 2020 | | Next Review Date: Spring 2022 |

1. Purpose and Scope

a) Purpose

Peterborough Utilities Group (PUG) wishes and encourages students to pursue post-secondary education. By providing bursaries, this demonstrates our commitment to the youth of our City and to assist them in their pursuit of a post-secondary diploma in areas of Electricity, Engineering, Information Technologies and in the field of Water.

b) Scope

This policy applies to the Peterborough Utilities Group consisting of City of Peterborough Holdings Inc. ("COPHI"), and its subsidiary companies including, Peterborough Distribution Inc. ("PDI"), Peterborough Utilities Inc. ("PUI"), Peterborough Utilities Services Inc. ("PUSI"), PUG Services Corp ("PUGSC"). It also applies to the Peterborough Utilities Commission ("PUC"). For the purpose of this policy the named entities in this scope paragraph are collectively referred to as the "PUG".

2. Roles & Responsibilities

Regena H. Lerke Memorial Bursary Approval

- Director Human Resources
- Director of PTS
- President & CEO

PUG Bursary for Electric or Environmental Studies

- Executive Assistant to President & CEO
- Staff and Administration of School

R L Beck Bursary

- Executive Assistant to President & CEO
- Staff and Administration of School

3. Application

3.1 Regena H. Lerke Memorial Bursary Approval

PUG will offer annually a bursary in memory of the late Regena H. Lerke. A maximum of \$1,000 per year will be awarded, with a maximum of \$500 per qualifying applicant. If there are more than two qualifying applicants, \$1,000 would be split between the qualifying applicants.

The bursary will be made available to qualifying sons/stepsons and daughters/stepdaughters of employees of any of the PUG who are in full-time post-secondary education and specializing in the field of Information Technology,

Computer Science or studies containing a significant portion thereof. A lifetime limit of one bursary per individual will apply.

Applications must be submitted each year to the Director of Human Resources by November 15th with appropriate verification of enrollment with the applicable post-secondary institution. Applications will be reviewed and approved by the PUG President, Director of Information Technology and the Director of Human Resources.

3.2 PUG Bursary for Electric or Environmental Studies

PUG will offer annually a \$500 bursary to each of the Secondary Schools in the City of Peterborough and Norwood District High School on a rotational basis. Staff and Administration of the school will determine the student worthy of the bursary and will inform PUG of their selection based on the following criteria:

1. a student who is deemed by the School Awards Committee to be worthy and in need of the bursary, and
2. a student who will be graduating in the current year and who will be pursuing post-secondary studies in electricity or the environment

3.3 R L Beck Bursary (PUC)

The Richard L. Beck bursary is in recognition of Mr. Beck's outstanding service to the Peterborough Utilities Commission (PUC) and its customers for over 24 years as an elected member of the PUC with responsibility for electricity (until January 1, 2000), and for water and Riverview Park and Zoo.

The PUC will offer annually a \$1,000 bursary to a student from one of the Secondary Schools in the City of Peterborough. The Richard L. Beck Bursary will be awarded to a student;

1. who is deemed by the School Awards Committee to be worthy and in need of the bursary, and
2. who will be graduating in the current year and who will be pursuing post-secondary studies in chemistry, biology sciences or studies related to water or water management, and,
3. who resides within the City of Peterborough.



1867 Ashburnham Drive
PO Box 4125, Station Main
Peterborough ON K9J 6Z5
(705) 748-9300

PUG POLICY

| | | |
|--|--|--|
| Name of Policy: Riverview Park & Zoo Donor Recognition Policy | | Responsible Department: Riverview Park & Zoo |
| Date Established: July 25, 2006 | Approval Date: June 25, 2020 | Next Review Date: June 2022 |

1. Purpose and Scope

a) Purpose

The Riverview Park and Zoo recognizes and appreciates the generosity of individuals, businesses and organizations that invest in our facilities, programs and services. Recognizing the financial investment made by our private supporters demonstrates the importance of these partners in the fulfillment of our vision and plans.

This policy will ensure appropriate and timely recognition for all charitable gifts.

b) Scope

This policy applies to the Peterborough Utilities Group consisting of City of Peterborough Holdings Inc. ("COPHI"), and its subsidiary companies including, Peterborough Distribution Inc. ("PDI"), Peterborough Utilities Inc. ("PUI"), Peterborough Utilities Services Inc. ("PUSI"), PUG Services Corp ("PUGSC"). It also applies to the Peterborough Utilities Commission ("PUC"). For the purpose of this policy the named entities in this scope paragraph are collectively referred to as the "PUG".

2. Application

The following criteria will be used to determine which gifts will be recognized:

- All charitable gifts and/or documented pledges from individuals, corporations, foundations, associations and organizations will be recognized at the appropriate level and in a timely manner.
- Accurate record-keeping will ensure that gifts given over time will also be recognized when the appropriate level has been reached (including the yearly Adopt-an-Animal program).
- Gift-in-kind donors will be listed in the appropriate category for the fair market value of their gift.

- In the case of realized bequests, donors will be listed as “The Estate of ...”
- Donors requesting anonymity will be omitted from all public displays and publications.

3. Recognition Levels and Benefits

The yearly Adopt-an-Animal program will be recognized by:

- Official (tax) receipt and an unframed certificate and program sticker
- Gifts exceeding \$100 will result in the donors name displayed on the Adopt-an-Animal sign for one year.

A permanent donor recognition installation, listing all those who contributed \$5000 and greater to the Park and Zoo, will be established in an appropriate central location.

The following Chart is to be used as a guideline for determining benefits at each gift level:

| Gift Amount | Benefits |
|-----------------------|---|
| >\$10 to < \$1,000 | Official (tax) receipt and letter of appreciation from the Curator, Riverview Park and Zoo |
| \$1,000 to < \$5,000 | Official (tax) receipt and letter of appreciation from the Curator, Riverview Park and Zoo Presentation of framed Certificate of Appreciation at annual meeting Recognition on the Riverview Park and Zoo web site |
| \$5,000 to < \$25,000 | Official (tax) receipt and letter of appreciation from the Curator, Riverview Park and Zoo Presentation of framed Certificate of Appreciation at annual meeting Placement on permanent donor recognition wall or installation Recognition on the Riverview Park and Zoo web site |

\$25,000 to <
\$100,000

Official (tax) receipt and letter of appreciation from the
Chair, Peterborough Utilities Commission
Placement on permanent donor recognition wall or
installation
Recognition on the Riverview Park and Zoo web site
Personalized gift
Recognition through a news release to media

\$100,000 and up

Official (tax) receipt and letter of appreciation from the
Chair, Peterborough Utilities Commission
Placement on permanent donor recognition wall or
installation
Recognition on the Riverview Park and Zoo web site
Personalized gift
Cheque presentation and news release with media
Brass plaque installed at an appropriate location



1867 Ashburnham Drive
PO Box 4125, Station Main
Peterborough ON K9J 6Z5
(705) 748-9300

PUG POLICY

| | | | |
|--|--|---|---------------------------------------|
| Name of Policy: Riverview Park & Zoo Funding | | Responsible Department: Water | |
| Date Established: December 15, 1994 | Approval Date: June 25, 2020 | | Next Review Date: June 2022 |

1. Purpose and Scope

a) Purpose

The Peterborough Utilities Commission ("Commission") derives authority to operate the Riverview Park and Zoo through Section 1 of The City of Peterborough Act, 1968 and through the City of Peterborough Bylaw 1975-19. The Commission wishes to provide a stable funding base for Riverview Park and Zoo operations and to provide for capital needs.

b) Scope

This policy applies to the Peterborough Utilities Group consisting of City of Peterborough Holdings Inc. ("COPHI"), and its subsidiary companies including, Peterborough Distribution Inc. ("PDI"), Peterborough Utilities Inc. ("PUI"), Peterborough Utilities Services Inc. ("PUSI"), PUG Services Corp ("PUGSC"). It also applies to the Peterborough Utilities Commission ("PUC"). For the purpose of this policy the named entities in this scope paragraph are collectively referred to as the "PUG".

2. Application

Funding for the Riverview Park and Zoo will be provided by the Water Utility. Operating expenses for the Riverview Park and Zoo, exclusive of water, electricity, joint administrative costs, financial expenses and depreciation, should not exceed nine percent of the revenue from the supply of water. Costs of special events will be considered by the Commission. The capital and operating budgets will be considered by the Commission annually. Reserve funds may be established for various specific projects or purposes, and by way of resolution of the Commission certain revenues may be directed toward reserve funds.



1867 Ashburnham Drive
PO Box 4125, Station Main
Peterborough ON K9J 6Z5
(705) 748-9300

PUG POLICY

| | | |
|---|--|---|
| Name of Policy: Supply of Treated Water to Riverview Park & Zoo | | Responsible Department: Water |
| Date Established: September 22, 1988 | Approval Date: June 25, 2020 | Next Review Date: June 2022 |

1. Purpose and Scope

a) Purpose

The Commission does not wish to meter and bill the Riverview Park and Zoo for treated water as it is funded primarily by Water Utility revenue.

b) Scope

This policy applies to the Peterborough Utilities Group consisting of City of Peterborough Holdings Inc. ("COPHI"), and its subsidiary companies including, Peterborough Distribution Inc. ("PDI"), Peterborough Utilities Inc. ("PUI"), Peterborough Utilities Services Inc. ("PUSI"), PUG Services Corp ("PUGSC"). It also applies to the Peterborough Utilities Commission ("PUC"). For the purpose of this policy the named entities in this scope paragraph are collectively referred to as the "PUG".

2. Application

The Peterborough Utilities Commission will supply treated water to the Riverview Park and Zoo at no cost.



1867 Ashburnham Drive
PO Box 4125, Station Main
Peterborough ON K9J 6Z5
(705) 748-9300

PUG POLICY

| | | | |
|---|--|---|---------------------------------------|
| Name of Policy: Use of Fire Hydrants for Non-Fire Purpose | | Responsible Department: Water | |
| Date Established: July 23, 1997 | Approval Date: June 25, 2020 | | Next Review Date: June 2022 |

1. Purpose and Scope

a) Purpose

The Peterborough Utilities Commission will permit the use of fire hydrants for purposes other than firefighting where there is a demonstrated benefit to the community and there is no cost or risk to the City of Peterborough and the Peterborough Utilities Commission, and where no reasonable alternative is available.

For such purposes, only Peterborough Utilities Commission staff, or their approved agent, will be permitted to operate the hydrants. Water use will be metered and charged accordingly. Costs of labour resulting from the use of the hydrant will be recovered.

No charge will be made to the City of Peterborough for the use of hydrants or the water supplied to them.

b) Scope

This policy applies to the Peterborough Utilities Group consisting of City of Peterborough Holdings Inc. ("COPHI"), and its subsidiary companies including, Peterborough Distribution Inc. ("PDI"), Peterborough Utilities Inc. ("PUI"), Peterborough Utilities Services Inc. ("PUSI"), PUG Services Corp ("PUGSC"). It also applies to the Peterborough Utilities Commission ("PUC"). For the purpose of this policy the named entities in this scope paragraph are collectively referred to as the "PUG".

2. Application

The Peterborough Utilities Commission wishes to preserve the integrity of the primary purpose of the fire hydrants while not unduly limiting the potential benefits of other uses. Costs associated with other uses must be recovered. The City of Peterborough pays for the supply and maintenance of fire hydrants through fire protection charges.



1867 Ashburnham Drive
PO Box 4125, Station Main
Peterborough ON K9J 6Z5
(705) 748-9300

PUG POLICY

| | | |
|---|--|---|
| Name of Policy: Water Metering Options for Existing and New Multi-Unit Facilities | | Responsible Department: Water |
| Date Established: February 27, 2014 | Approval Date: June 25, 2020 | Next Review Date: June 2022 |

1. Purpose and Scope

a) Purpose

Wherever practical, all customers shall be metered in accordance with this policy. All metering shall be in accordance with the current metering specifications of the Peterborough Utilities.

b) Scope

This policy applies to the Peterborough Utilities Group consisting of City of Peterborough Holdings Inc. ("COPHI"), and it's subsidiary companies including, Peterborough Distribution Inc. ("PDI"), Peterborough Utilities Inc. ("PUI"), Peterborough Utilities Services Inc. ("PUSI"), PUG Services Corp ("PUGSC"). It also applies to the Peterborough Utilities Commission ("PUC"). For the purpose of this policy the named entities in this scope paragraph are collectively referred to as the "PUG".

2. Application

Existing Multi-Residential, Industrial, Commercial or Institutional

Individual metering of units is always an option, whenever physically possible – owner is responsible to carry out any plumbing necessary to make individual metering possible if this option is selected by the owner.

1. Bulk metering is always an option – owner to pay for chamber, piping, by-pass piping (if required), and electrical necessary for meter installation. Bulk metering in the building is allowed where possible, otherwise bulk metering shall be done on the domestic portion of the water piping at a location approved by the PUC.
2. A combination of bulk and individual metering is allowed. Costs for the combination option shall be consistent sections 1 & 2. If the owner wishes submetering behind a bulk meter, the owner shall be responsible for the meters and their installation. PUC will not bill submetering.

3. Where the plumbing system is complex, the owner shall identify the feeds and where metering shall be placed. The PUC will review this information and have final approval on the metering location(s). The owner shall be responsible if double metering occurs due to improper metering locations and shall hold the PUC harmless in such an occurrence.
4. The owner is responsible to provide a meter location which is suitable to the PUC for protection from freezing and accessibility for maintenance.
5. The PUC shall be responsible to install a bypass around the meter for meters 38mm (1 ½") or greater.
6. Existing dedicated fire service will not be metered.

New Multi-Residential, Industrial, Commercial or Institutional

1. The owner may individually meter the building or units where there is a direct service to the building that does not have a private yard hydrant – owner is responsible to carry out any plumbing necessary to make individual metering possible if this option is selected by the owner.
2. Bulk metering is always an option – owner to pay for chamber, piping, by-pass piping (if required), and electrical necessary for meter installation. Bulk metering in the building is allowed where possible, otherwise bulk metering shall be done on the domestic portion of the water piping at a location approved by the PUC.
3. Where the plumbing system is complex, the owner shall identify the feeds and where metering shall be placed. The PUC will review this information and have final approval on the metering location(s). The owner shall be responsible if double metering occurs due to improper metering locations and shall hold the PUC harmless in such an occurrence.
4. Where the plumbing system is complex, the owner shall identify the feeds and where metering shall be placed. The PUC will review this information and have final approval on the metering location(s). The owner shall be responsible if double metering occurs due to improper metering locations and shall hold the PUC harmless in such an occurrence.
5. The owner is responsible to provide a meter location which is suitable to the PUC for protection from freezing and accessibility for maintenance.
6. The owner shall be responsible to install a bypass around the meter for meters 38mm (1 ½") or greater. The bypass shall be of equal size as the main pipe.
7. Dedicated fire services shall not be metered.

RATIONALE

Peterborough Utilities Commission wishes to implement water metering throughout the city to the fullest extent possible while providing some flexibility and options for multi-unit facilities.

PETERBOROUGH UTILITIES COMMISSION REPORT

2.01

June 18, 2020

COMMISSION AGENDA
2020:06:25

FINANCIAL UPDATE FOR THE FIVE MONTH PERIOD ENDED MAY 31, 2020

INFORMATION ITEM

The Peterborough Utilities Commission interim financial update for the five month period ending May 31, 2020 is presented for the Commission's information.

Prepared by: Kyle Davis, CFO

Submitted by: Kyle Davis, CFO

Approved for Submission by: _____
President & CEO

SUMMARY

The surplus for the period ended May 31, 2020 is \$186 thousand compared to \$532 thousand for the same period in 2019.

| Financial Activities | | | | | | |
|---------------------------|---------------------------|-------|-----------|----------|----------------|----------------|
| (unaudited, \$ thousands) | Five months ended May 31, | | | | 2020 Budget | % of Budget |
| | 2020 | 2019 | \$ Change | % Change | | |
| Revenues | 7,772 | 8,146 | (374) | -5% | 22,319 | 35% |
| Expenditures | | | | | | |
| Operating | 4,731 | 4,747 | (16) | 0% | 12,563 | 38% |
| Amortization | 2,696 | 2,663 | 33 | 1% | 6,470 | 42% |
| Interest | 159 | 204 | (45) | -22% | 367 | 43% |
| | 7,586 | 7,614 | (28) | 0% | 19,400 | 39% |
| Surplus | 186 | 532 | (346) | -65% | 2,919 | 6% |

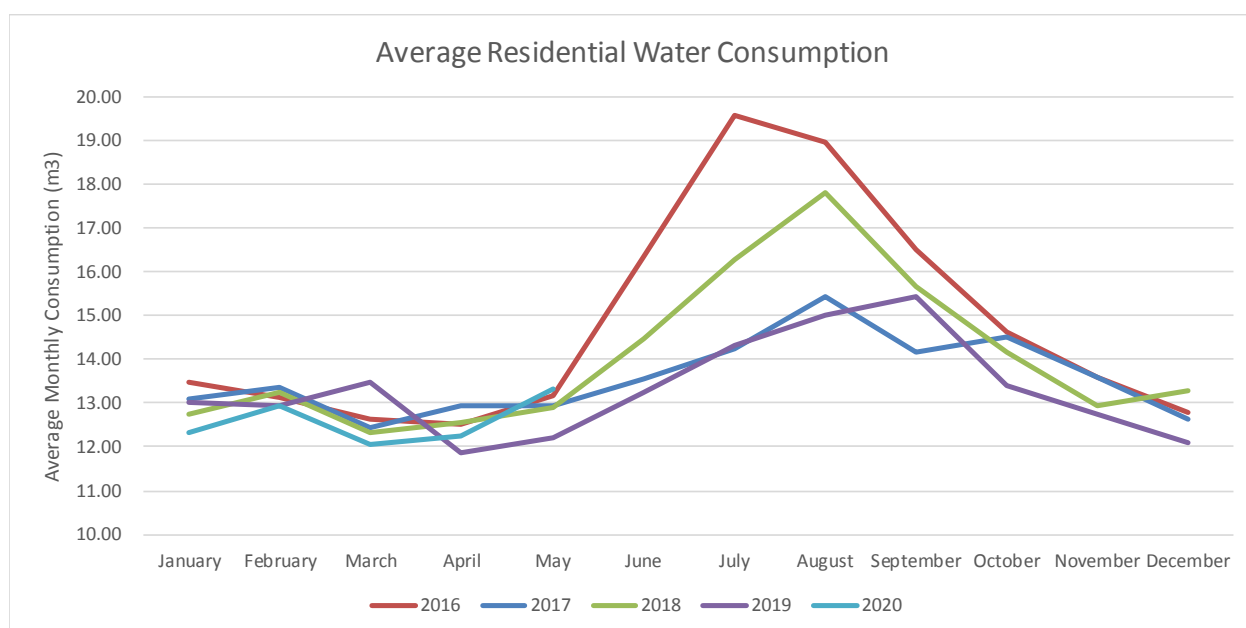
As discussed in the first quarter financial report, the impact of the COVID-19 Pandemic is now being felt within the PUC. At the end of the first quarter, revenue was ahead of the prior year by 4%, and the surplus was \$243 thousand above 2019. Over the past two months however, revenue has fallen below the prior year and the surplus is now only \$186 thousand.

REVENUE

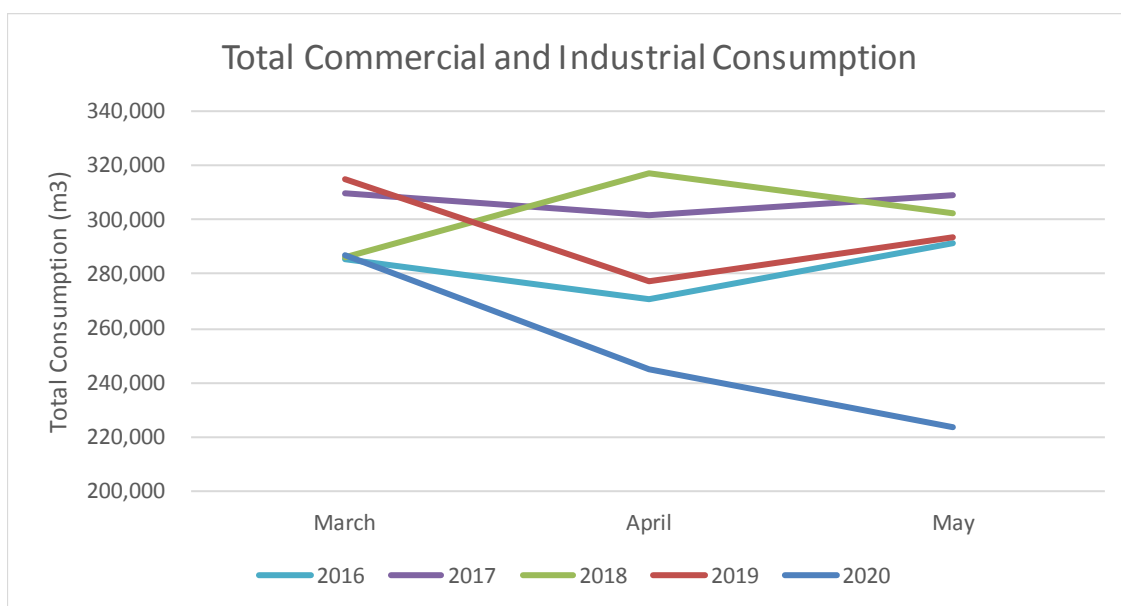
Total revenue is \$7.77 million for the first five months of 2020, compared to \$8.15 million for the same period in 2019.

| Revenue | | | | | |
|----------------------------------|---------------------------|-------|-----------|----------------|----------------|
| (unaudited, \$ thousands) | Five months ended May 31, | | | 2020 Budget | % of Budget |
| | 2020 | 2019 | \$ Change | | |
| Sale of Water | 6,942 | 6,987 | (45) | 18,096 | 38% |
| Capital installation charges | 6 | 16 | (10) | 350 | 2% |
| Development charges | 3 | 150 | (147) | 1,542 | 0% |
| Fire Protection | 271 | 271 | 0 | 650 | 42% |
| Sewer surcharge billings | 193 | 189 | 4 | 422 | 46% |
| Riverview Park & Zoo | 9 | 12 | (3) | 281 | 3% |
| Riverview Park & Zoo - donations | 0 | 1 | (1) | 25 | 0% |
| Interest | 92 | 145 | (53) | 228 | 40% |
| Electricity | 137 | 207 | (70) | 425 | 32% |
| Other | 119 | 168 | (49) | 300 | 40% |
| | 7,772 | 8,146 | (374) | 22,319 | 35% |

- Water Revenue – Revenue from the sale of water is currently \$45 thousand below the prior year and 38% of the annual budget. Through the first quarter, revenue was \$210 thousand above the previous year, but the impacts of COVID-19 have caused revenue to decrease in each subsequent month. The following will provide further detail on both the residential consumption, and the commercial and industrial consumption
 - Residential
 - In the first quarter of 2020, residential consumption was trending slightly below the previous years. Throughout April and May we have seen this increase as many people were staying home due to the COVID-19 pandemic.



- Commercial and Industrial
 - The main cause for the revenue decrease is within the commercial and industrial accounts as numerous business have been closed during the COVID-19 pandemic.
 - Billed consumption had a continued decrease through April and May, with May consumption 25% lower than the 2016-2019 average.
 - Given that many businesses, including restaurants and bars remain closed or at a significantly decreased in capacity, it is expected that this drop in consumption will remain in the coming months.



- Other revenue is \$119 thousand in 2020, compared to \$168 thousand in the prior year due to the decrease in administrative and related charges on overdue accounts.
- Development charges are \$3 thousand in 2020 compared to a budget of \$1.54 million. While Management continues to monitor development activities and engage with prospective developers, given the current environment it is likely that these plans will get pushed into 2021.

EXPENDITURES

Total expenditures for the five month period ended May 31, 2020 are \$7.59 million compared to \$7.61 million in 2019 and are 39% of budget.

Overall expenditures are trending below both the prior year and budgeted expectations. A summary of the expenditures by department are as follows, with no significant variances from budget.

| Expenditures | | | | | | |
|-----------------------------|---------------------------|-------|-----------|----------|--------|--------|
| (unaudited, \$ thousands) | Five months ended May 31, | | | | 2020 | % of |
| | 2020 | 2019 | \$ Change | % Change | Budget | Budget |
| Water treatment and storage | 1,605 | 1,706 | (101) | -6% | 4,629 | 35% |
| Distribution systems | 940 | 923 | 17 | 2% | 2,268 | 41% |
| Administrative | 552 | 502 | 50 | 10% | 1,418 | 39% |
| Support Services | 994 | 962 | 32 | 3% | 2,522 | 39% |
| Riverview Park and Zoo | 640 | 654 | (14) | -2% | 1,726 | 37% |
| Interest | 159 | 204 | (45) | -22% | 367 | 43% |
| Amortization | 2,696 | 2,663 | 33 | 1% | 6,470 | 42% |
| | 7,586 | 7,614 | (28) | 0% | 19,400 | 39% |

PETERBOROUGH UTILITIES COMMISSION **REPORT**

2.02

June 19, 2020

COMMISSION AGENDA
2020:06:25

ANNUAL DRINKING WATER REPORT

INFORMATION ITEM

Attached is the 2019 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 2019.

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 2019.

Budget and Financial Implications

No budgetary of cost implications.

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: 2019 Annual Drinking Water Report, 42 pages



WATER
RIVERVIEW PARK AND ZOO

Annual Drinking Water Report 2019



Inside this Report

| | |
|--|----|
| 2019 PETERBOROUGH UTILITIES COMMISSION..... | 1 |
| 2019 RIVERVIEW PARK AND ZOO ADVISORY COMMITTEE | 1 |
| INTRODUCTION..... | 2 |
| DRINKING WATER PROCESS DESCRIPTION | 2 |
| Source Water | 2 |
| TREATMENT PLANT OPERATIONS | 2 |
| Reservoirs, Elevated Tanks, Water Booster Pumping Stations | 3 |
| WATER DISTRIBUTION | 3 |
| PTBO H ₂ O | 3 |
| CAPITAL WORKS SUMMARY | 4 |
| Water Street Pumphouse | 4 |
| Sherbrook Street Water Tower | 4 |
| Water Main Replacement | 4 |
| New Water Main Installation | 4 |
| Water Service Replacement | 4 |
| Water Main Rehabilitation | 5 |
| SUMMARY OF INSPECTION & COMPLIANCE | 5 |
| Ministry of Environment Conservation & Parks Inspection | 5 |
| Adverse Water Quality Incidents | 5 |
| Drinking Water Quality Management System | 5 |
| WATER FLOWS..... | 6 |
| Permit to Take Water | 6 |
| Treated Water Production | 6 |
| WATER QUALITY RESULTS | 7 |
| Chlorine Residual | 8 |
| Turbidity | 8 |
| Escherichia coli | 9 |
| INORGANIC PARAMETERS | 9 |
| ORGANIC PARAMETERS..... | 9 |
| Trihalomethanes -THM | 11 |
| Haloacetic Acid | 12 |
| Sodium | 12 |

2019 Annual Drinking Water Report

| | |
|--|----|
| Lead | 12 |
| Taste and Odour | 12 |
| SUMMARY REPORT | 14 |
| CHEMICAL CONSUMPTION | 14 |
| Chlorine | 15 |
| Hydrofluorosilicic Acid (Fluoride) | 15 |
| Sodium Silicate | 15 |
| Aluminium Sulphate (Alum) | 15 |
| Water Treatment Plant | 16 |
| Water Distribution | 16 |
| IMPACT OF CLIMATE EVENT | 16 |
| PILOT PLANT | 16 |
| Ozone and Advanced Oxidation | 16 |
| Granular Activated Carbon Media | 17 |
| Chloramination | 17 |
| CUSTOMER SERVICE | 18 |
| Customer Calls | 18 |
| Tours | 18 |
| Water Rates | 19 |
| Seasonal Shut off Requests | 19 |
| Seasonal Water Meter | 19 |
| Flat Rate Surcharge | 20 |
| Turn on/ Turn Off Services | 20 |
| RIVERVIEW PARK & ZOO | 21 |
| Park Operation & Facilities | 21 |
| Zoo Operations & Facilities | 21 |
| Capital Program | 23 |
| Revenue Contributions | 23 |
| Education | 24 |
| Conservation | 24 |
| Research | 25 |
| Special Events | 25 |
| Staff & Volunteers | 25 |
| APPENDIX A – FINANCIAL STATEMENT | 26 |
| APPENDIX B – ABBREVIATIONS | 41 |

2019 Annual Drinking Water Report

2019 Peterborough Utilities Commission

Mayor Diane Therrien..... Chair

Councillor Don Vassiliadis..... Vice-Chair

Councillor Gary Baldwin Commissioner

Councillor Kim Zippel/ Dean Pappas..... Commissioner

Councillor Stephen Wright..... Commissioner

2019 Riverview Park and Zoo Advisory Committee

| Name of Volunteer | Date Appointed |
|--------------------------|-----------------------|
| Wally Davidson | Lifetime Member |
| Mike Kirkpatrick | January 2016 |
| Janet Lafortune | January 2018 |
| Dennis Carter-Edwards | January 2018 |
| Paul Hartung | January 2018 |

On the Cover

The newly refurbished Sherbrooke Water Tower had an extensive rehabilitation (page 4) in 2019. This photo was captured using drone photography, which allows the viewer to see the expansive City in the back drop. 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

2019 Annual Drinking Water Report

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 2019.

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 2019 was 11,037.65 megalitres (ML), this is an average of 30.24 ML daily (Table 1). The maximum daily pumpage of 40.07 ML, occurred on August 2nd, was a 4% decrease from the maximum daily value (41.84 ML) recorded on June 29, 2018.



2019 Annual Drinking Water Report

Table 1

| Water Treatment Plant Operations | | |
|----------------------------------|--------------------------|------------------------|
| | 2018 | 2019 |
| Total Annual Raw Water | 11,455.40 | 11,037.65 |
| Average Day ML | 31.38 | 30.24 |
| Total Annual Plant Effluent | 10,252.18 | 9,741.72 |
| Average Day ML | 28.07 | 26.68 |
| Max. Daily Pumpage | 41.84 – June 29 | 40.07 – Aug 2 |
| Max. Daily City Consumption | 40.40 – July 9 | 38.48 – Aug 2 |
| Peak Hourly Consumption Rate | 73.25 – Sept 15 @ 11:30h | 70.09– May 14 @ 15:30h |
| Total Wash Water | 197.74 | 238.81 |
| Average of Plant Effluent | 2.0 % | 2.5 % |
| Total Zone #1 Pumpage | 5,925.93 | 5,706.92 |
| Average Day | 16.23 | 15.63 |
| Total Zone #2 Pumpage | 4,326.26 | 4,034.80 |
| Average Day | 11.84 | 11.05 |

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 462 kilometres of pipe (water mains), 2,304 hydrants and 27,252 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 H₂O

The Utilities' mobile drinking water station, named PTBO H₂O operated from May – October for the fourth season in 2019. This year PTBO H₂O participated in municipally sponsored events, concerts, sporting events and local festivals.

The mobile drinking water station was created in order to provide fresh clean tap water to event patrons. Visitors to the mobile station can use a fountain to have a drink or to refill their

2019 Annual Drinking Water Report

water bottle while staff promotes our tap water and other conservation activities. The mobile unit compliments our corporate values on the Environment, with the promotion of resource conservation



Capital Works Summary

Water Street Pumphouse

The multi-year project on the Water Street Pumphouse was completed in 2019, including repairs to the parapets and painting on the North, East, West walls.

Sherbrook Street Water Tower

The Sherbrook Street water tower was rehabilitated in 2019. This project required construction of scaffolding surrounding the airtight enclosure of the tower to safely remove existing exterior lead coating using sand blasting techniques. The project also involved removal of the interior coating. Patching and welding of interior and exterior pits was completed prior to the epoxy-zinc coating being applied. The new City of Peterborough logo was also added. Replacement of existing steel fill pipe with new stainless-steel piping,

insulation and heat tracing was completed and the tank fully commissioned by the end of December.

Water Main Replacement

Approximately 150 m of distribution water mains were replaced on:

- ◆ Euclid Avenue
- ◆ Rogers Street
- ◆ Armour Road
- ◆ Parkhill Road West

New Water Main Installation

Approximately 2.2 km of water main was installed on:

- ◆ Lily Lake East Subdivision
- ◆ Harper Road
- ◆ Parkhill Road West

Water Service Replacement

A total of 77 water services were repaired and 24 water services were replaced in 2019.



2019 Annual Drinking Water Report

Water Main Rehabilitation

Cleaning and lining of approximately 4.5 km of existing distribution water mains took place on:

- ◆ Walnut Street
- ◆ Monaghan Road
- ◆ Hopkins Avenue
- ◆ Weller Street
- ◆ Homewood Avenue
- ◆ Gilmour Street
- ◆ Sherbrooke Street
- ◆ John Street
- ◆ William Street
- ◆ Thomas Street
- ◆ Rutherford Avenue
- ◆ Victory Crescent
- ◆ Boswell Avenue
- ◆ Pearl Avenue
- ◆ Elias Avenue
- ◆ Margaret Avenue
- ◆ Frederick Avenue
- ◆ Maitland Avenue

Structural lining of approximately 1.5 km of existing distribution water mains took place on:

- ◆ Lansdowne Street East

Summary of Inspection & Compliance

Ministry of Environment Conservation & Parks Inspection

During 2019, there was a Ministry of the Environment, Conservation & Parks (MECP) Inspection on November 4th, report #1-L4FPN. 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 were zero incidents of adverse drinking water quality in 2019.

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 on-site verification audit an internal audit was conducted in September 2019. The internal audit found three opportunities for improvement and no corrective actions required. The external audit, conducted by NSF International, later in September 2019 described that the management system was well documented and continues to be effective.

2019 Annual Drinking Water Report

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 2019, 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 11,037.65 megalitres (ML); this is an average of 30.24 ML daily.

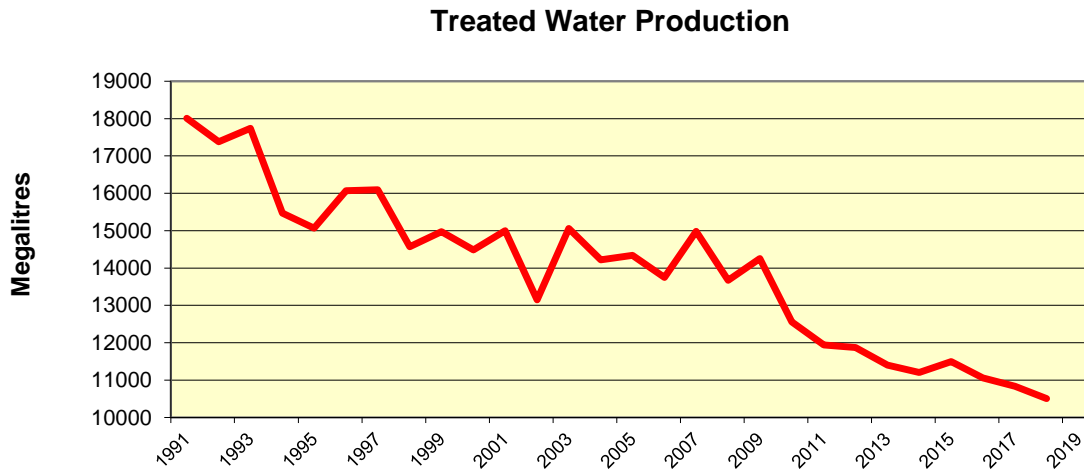
Treated Water Production

The Water Treatment Plant produced 9,741.72 megalitres (ML) in 2019, this is an average of 26.68 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 2019 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



2019 water production was 9,741.72

Water Quality Results

No known health-related water quality guidelines for inorganic (Table 2) and organic (Table 3) parameters were exceeded in 2019 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 2019. 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

2019 Annual Drinking Water Report

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 were 0.74 -2.24 mg/L.

Turbidity

The average raw water turbidity in 2019 was 0.50 NTU; average during 2018 was

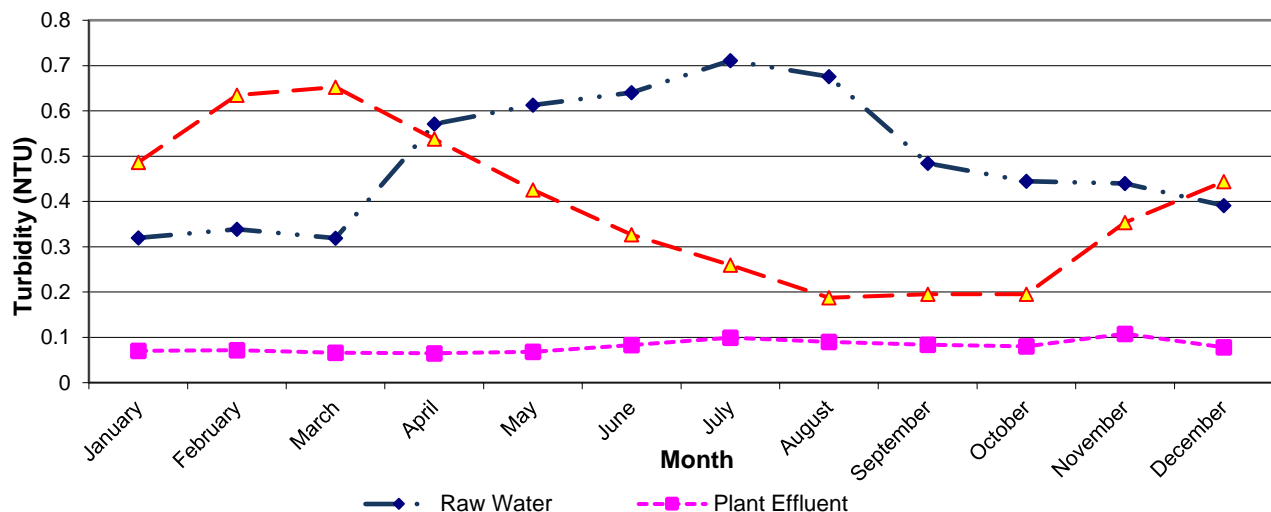
0.48 NTU. The monthly raw water turbidity peak occurred in July at 0.71 NTU as shown in Chart 2. The past 20-year average raw water turbidity was 0.57 NTU and treated water turbidity was 0.09 NTU.

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 2019 and in 2018 was 0.04 NTU. Filters are taken off-line when the turbidity reaches 0.15 NTU. The 2018 average treated water turbidity was measured at 0.08 NTU.

Chart 2

Average Monthly Turbidity 2019



2019 Annual Drinking Water Report

Microbiological Standards Testing

Escherichia coli

During 2019, a total of 249 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 135 Colony Forming Units (CFU) per litre. A total of 1533 E.coli samples were analyzed from the plant effluent and distribution system. In 2019, there were no instances where E.coli was detected in the potable drinking water.

Total Coliform

The MECP guidelines for clostridium perfringens is to have all samples collected from the plant effluent to be zero CFU per litre of water sampled. While the MECP does not require this parameter to be tested, the bacteria is analyzed as an indicator of treatment efficiency for protection from parasitic protozoan giardia and cryptosporidium.

Inorganic Parameters

Table 2

| Schedule 23 | Unit | 2019 Results | MAC |
|-------------|------|--------------|-------|
| Antimony | mg/L | <0.00005 | 0.006 |
| Arsenic | mg/L | <0.00002 | 0.025 |
| Barium | mg/L | 0.0247 | 1.0 |
| Boron | mg/L | 0.011 | 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 | 0.00004 | 0.01 |
| Uranium | mg/L | 0.000029 | 0.02 |

Organic Parameters

Table 3

| Schedule 24 | Unit | 2019 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 |

2019 Annual Drinking Water Report

| Schedule 24 | Unit | 2019 Results | MAC |
|---|------|--------------|---------|
| Carbon Tetrachloride | mg/L | <0.00016 | 0.005 |
| Chlorpyrifos | mg/L | <0.00002 | 0.09 |
| 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 |
| Malathion | mg/L | <0.00002 | 0.19 |
| 2-Methyl-4-chlorophenoxyacetic acid | mg/L | <0.00012 | 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 |

2019 Annual Drinking Water Report

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 (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

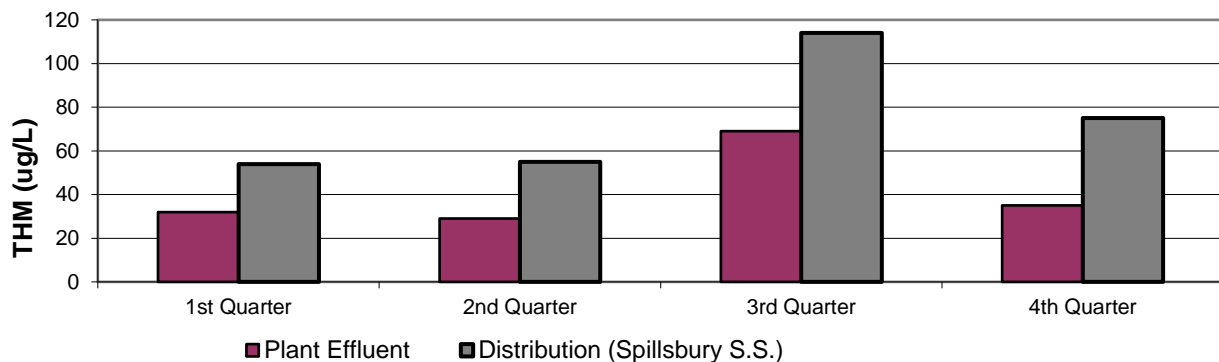
set limits on the amount permissible in drinking water.

The THM average values found leaving the Water Treatment Plant during 2019 was 41 µg/L. The past 10-year average plant effluent has been 43 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 2019, 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 75 µg/L (Chart 3). The average THM value during 2018 was 77 µg/L. The 10-year average of distribution THM concentration was found to be 76 µg/L.

Chart 3

2019 Total Trihalomethanes



2019 Annual Drinking Water Report

Haloacetic Acid

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

The 2019 average treated water HAA was 39.6 µg/L and the average distribution sample was found to be 62.6 µg/L. O Reg. 170/03 was amended to include HAAs in 2020. The regulatory limit for distribution samples are 80 µg/L; 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 2019, the sodium result was found to be 8.2 mg/L (10.6 mg/L in 2018). The local MOH 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 plus two non-residential samples every sampling period. Peterborough is required to sample any residential house in the city that requests sampling for the same parameters mentioned above.

In 2019, we sampled 45 private plumbing (residential) and 60 distribution points for lead. Customers are offered

free testing of their private dwelling. Of the 45 samples taken only 4 exceeded the Ministry guidelines. 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 2019, 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 10ng/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.

2019 Annual Drinking Water Report

Geosmin is thought to originate higher in the water column and produce an earthy odour. The average raw water value during 2019 was 7 ng/L and the average plant treated water was 8 ng/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 2019

was 5 ng/L and the average plant effluent was 5 ng/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

2019 Average Monthly Geosmin

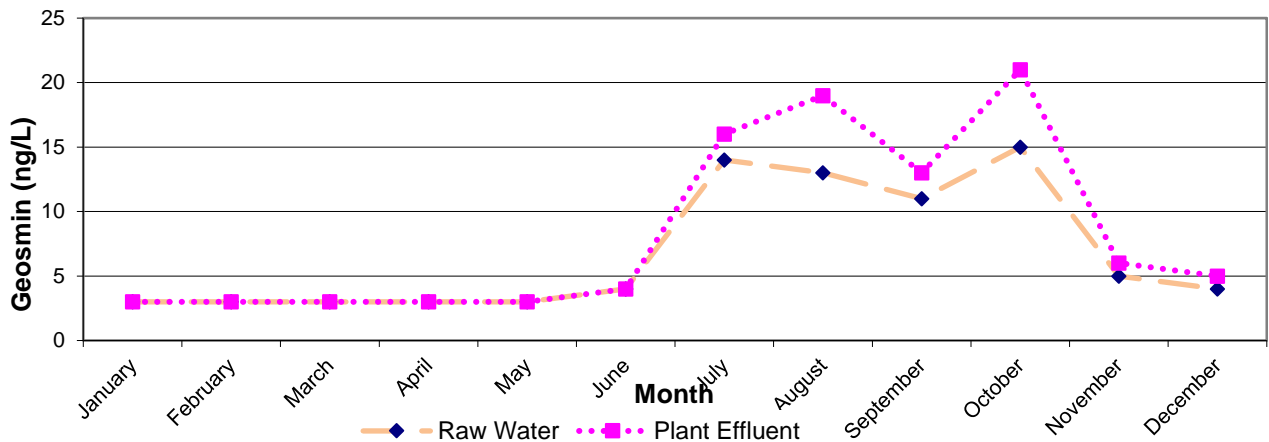
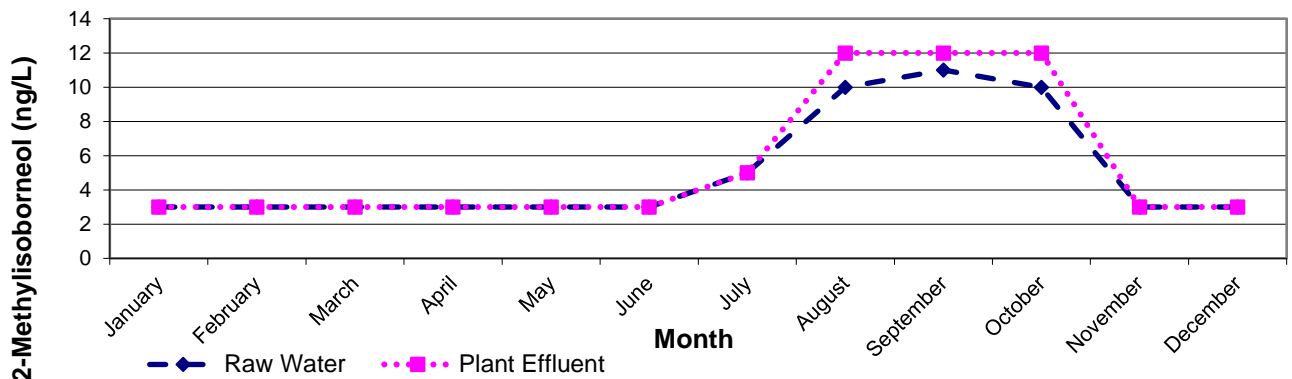


Chart 5

2019 Average Monthly 2-Methylisoborneol (2-MIB)



2019 Annual Drinking Water Report

Summary Report

The summary of water delivered as per O. Reg. 170/03 Schedule 22 in 2019 is in Table 4.

Table 4

| Month | Average Day (M ³ /d) | Maximum Day (M ³ /d) | Peak Flows (L/m) |
|-------------------|------------------------------------|------------------------------------|---------------------|
| January | 26,267 | 37,126 | 25,782 |
| February | 25,298 | 33,555 | 23,302 |
| March | 24,745 | 27,430 | 19,049 |
| April | 24,458 | 29,005 | 20,142 |
| May | 25,380 | 28,543 | 19,822 |
| June | 28,180 | 30,558 | 21,221 |
| July | 32,896 | 37,619 | 26,124 |
| August | 31,109 | 40,067 | 27,824 |
| September | 28,236 | 30,701 | 21,320 |
| October | 25,234 | 27,478 | 19,082 |
| November | 24,842 | 26,505 | 18,406 |
| December | 24,463 | 33,843 | 23,502 |
| Rated Capacity | 104.00 | ---- | ---- |
| Approved Flowrate | ---- | 190.68 | 132,743 L/m |

Chemical Consumption

Table 5

| Chemical Use | 2018 | 2019 |
|-----------------------------|-----------|-----------|
| Total Chlorine | 40,422 kg | 39,366 kg |
| Average Dosage | 1.23 mg/L | 1.26 mg/L |
| Total Aluminum Sulphate | 807,321 L | 827,259 L |
| Average Dosage | 46.1 mg/L | 48.5 mg/L |
| Total Hydrofluosilicic Acid | 24,298 L | 24,702 L |
| Average Dosage | 0.67 mg/L | 0.69 mg/L |
| Total BW46M Sodium Silicate | 21,071 | 97,776 |
| Average Dosage | 7.4 mg/L | 8.5 mg/L |

Chlorine

The average dose of chlorine for 2019 was 1.26 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 May to October. The addition of zebra mussel chlorine is dosed only during the months when there are warmer water temperatures (usually when water temperature is above 12°C). This is when the zebra mussels will colonize on surfaces such as the intake pipe walls.

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 2019 was approximately 0.69 mg/L (Table 5). The average treated water fluoride residual was 0.57 mg/L. The average fluoride concentration found in the raw water (natural fluoride) during 2019 was 0.12 mg/L.

Sodium Silicate

Sodium silicate (BW46) 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 BW46 increases the pH to a more acceptable value of 7.1. The addition of BW46 contributes to the total silica level found in the water. The level of silica in the distribution system is monitored monthly. Silica levels throughout the distribution system generally ranged between 2.0 mg/L and 14.0 mg/L with an annual average of 5.1 mg/L.

Aluminium Sulphate (Alum)

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 2019 at an average rate of 48.5 mg/L (Table 5). The average alum dosage during 2018 was 46.1 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 2019 was 0.017 mg/L the operational guideline for aluminium is 0.1 mg/L.

2019 Annual Drinking Water Report

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 26.2°C. This is considered to be above normal summertime temperature. Environment Canada data describes the average normal value of 18.3°C (normal data 1981 – 2010). The summer months in 2019 were hotter than normal with 16 days where temperatures were higher than 30°C. Rainfall totals for the three summer months of June, July and August was 153.9 mm. This is considered to be below normal rainfall values for the three summer months.

Otonabee Regional Conservation Authority (ORCA) issued a Level 1 Low Water declaration on September 11, 2019. This advisory notice is based on the preceding three months period, receiving less than 80% of normal precipitation. Low precipitation levels continued in September and a Level 2

Low was issued on October 3. All advisories were lifted by ORCA on November 8, 2019.

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 and Advanced Oxidation

Ozone application and the benefits for enhanced water quality has been an important focus of our pilot-scale research program since 2015. Ozone has been shown as an effective technology in the reduction of organic carbon, disinfection by-product (DBP) formation, and taste-odour-compounds, geosmin (GSM) and 2-methylisoborneol (2-MIB). Advantages to ozone application also play a prominent role in the oxidation of cyanotoxins and environmental pollution, including endocrine disrupting compounds and pharmaceuticals. Our current studies remained focused on integration of

2019 Annual Drinking Water Report

ozone into full-scale applications as a next generation technology. Application of ozone post-filtration was shown to reduce natural organic matter 30%, resulting in a corresponding reduction of regulated DBPs, including trihalomethanes (THMs) and haloacetic acids (HAAs), by 50% and 40%, respectively. Post-filtration ozonation was also shown to effectively improve water quality, enhance disinfection, and reduce chlorine demand. Similar to the application of ozone pre-filtration, integration and infrastructure capital costs remain barriers to the implementation of this technology. Moving forward in 2020, ozone application and integration as a pre-treatment technology will be the focus. Early results indicate pre-treatment application will improve water quality without the requirement of prohibitive capital infrastructure costs.

Granular Activated Carbon Media

Pilot-scale studies have focused on enhanced water quality and improved water quality aesthetics through the use of Granular Activated Carbon (GAC) media. Our objective in 2019 was to optimize our current treatment strategy to mitigate DBP formation and taste-and-odour compounds, GSM and 2-MIB. GAC media caps integrated with our current filtration technology, were shown to decrease THM and HAA formation by 10% and 12%, respectively. GSM and 2-MIB compounds were reduced below the odour threshold concentration of 9 parts-per-trillion (ppt). GAC media was also shown to reduce filtered water turbidity, reduce chlorine demand, and provide enhanced organic carbon removal and bioactivity, further enhancing water quality and

performance. The installation of GAC media caps in 2020 will play a prominent role to immediately enhance water quality and improve aesthetics for our consumers.

Chloramination

The application of chloramination as a secondary disinfectant for our distribution system remained a key focus of our pilot-scale research program in 2019. The focus of the program was to investigate alternative treatment strategies to improve water quality, mitigate DBP formation, and ameliorate chlorine taste-and-odour issues for our consumers. During the annual study, chloramination was shown to reduce THM and HAA formation, resulting in a 40% and 45% reduction, respectively.

Chloramination was also shown to provide increased stability as a secondary disinfectant in our distribution system. Increased stability of a secondary disinfectant has the potential to improve water quality aesthetics, mitigate taste-and-odour issues, and reduce operational costs.

Our current focus in 2020 is to determine the optimal pH setpoint required for monochloramine formation, and to evaluate any potential impacts of chloramination on lead-corrosion in premise plumbing. The integration of ozone pre-treatment in conjunction with chloramination as a secondary disinfectant will also be examined for any potential synergistic effects.

2019 Annual Drinking Water Report

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 2019, staff responded to a total of 35 inquiries, this was an increase of 34.6% from 2018. The 35 inquiries were related to the following concerns; 17% of customer concern calls were relating to colour (usually rusty coloured water), 12% were relating to particulate matter, a total of 60% relating to taste and

odour, and 11% relating to bacteriological concerns (Chart 5).

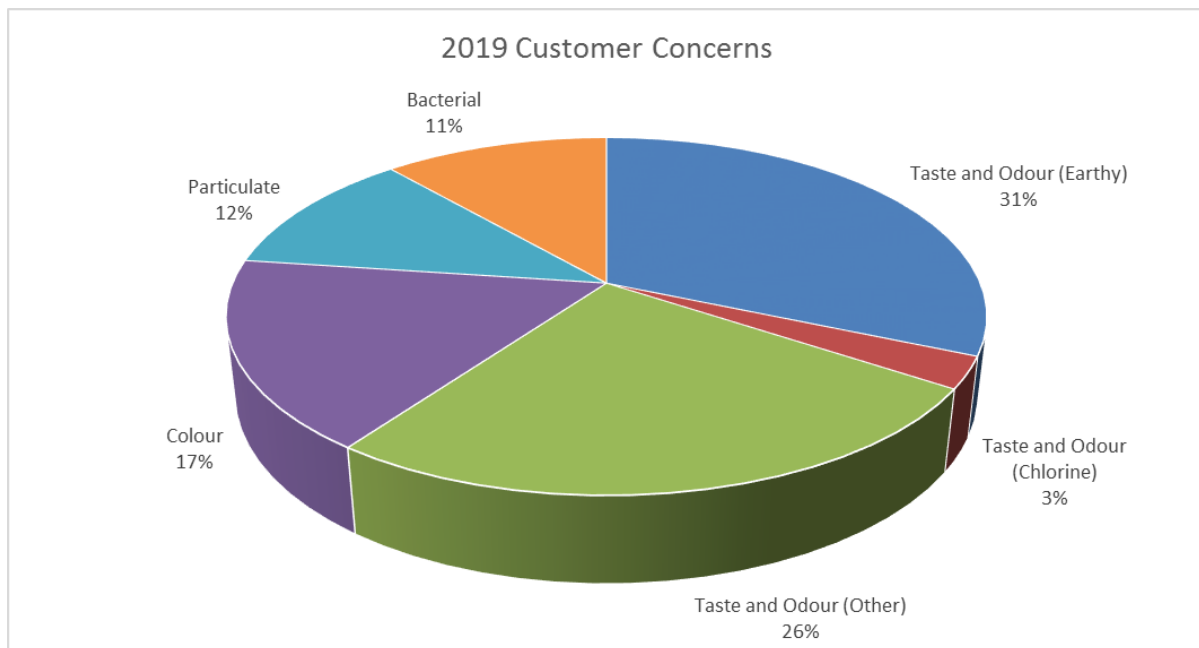
In every inquiry regarding bacteriological issues, the water was tested for bacteria and none was found.

A further breakdown of the 21 taste and odour complaints revealed the following: 11 concerns were for an earthy musty odour, 1 concern was for a chlorine taste and odour, and 9 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. Over 549 people had a tour of the Water Treatment Plant process during 2019 (over 2,862 people in the last 10 years).

Chart 6



2019 Annual Drinking Water Report

Water Rates

Table 6

| Meter Basic Charge | 2018 | 2019 |
|---------------------|------------|------------|
| 15mm (5/8") Meter | \$20.76 | \$21.28 |
| 20mm (1/2") Meter | \$20.76 | \$21.28 |
| 25mm (1") Meter | \$38.24 | \$39.20 |
| 40mm (1 1/2") Meter | \$65.56 | \$67.20 |
| 50mm (2") Meter | \$92.88 | \$95.20 |
| 75mm (3") Meter | \$166.09 | \$170.24 |
| 100mm (4") Meter | \$335.83 | \$344.23 |
| 150mm (6") Meter | \$582.78 | \$597.35 |
| 200mm (8") Meter | \$829.71 | \$850.45 |
| 250mm (10") Meter | \$1,158.84 | \$1,187.81 |
| 300 mm (12") Meter | \$1,645.54 | \$1,686.68 |

Table 7

| Consumption Charge | 2018 | 2019 |
|-------------------------|----------|----------|
| 0-20 cubic metres | \$1.3549 | \$1.3888 |
| 21-100 cubic metres | \$1.4204 | \$1.4560 |
| 101-4,999 cubic metres | \$0.7411 | \$0.7596 |
| 5,000 plus cubic metres | \$0.5110 | \$0.5238 |

Table 8

| Flat Rate Service | 2018 | 2019 |
|--|---------------------------|---------------------------|
| Basic Charge | \$12.43 | \$12.74 |
| Rooms | \$2.68 | \$2.75 |
| Lot Area (charge subject to 1500 m ² maximum) | \$2.47/100 m ² | \$2.53/100 m ² |
| Swimming Pool | \$0.25/ m ³ | \$0.26/ m ³ |

Seasonal Shut off Requests

A \$62 fee will apply for customers who request to have their service disconnected during the winter months; a \$62 fee will also apply for reconnection of the service. The applicable Basic Charges still apply during the months when the service is off.

Seasonal Water Meter

Services that are removed for the winter and re-installed in the spring will incur a \$151 fee for both the installation and removal of the meter.

2019 Annual Drinking Water Report

Flat Rate Surcharge

Customers who have not allowed the installation of a water meter are subject to a 65% surcharge on each billed component.

Turn on/ Turn Off Services

There is no charge for this service during normal business hours unless it is on a repeat basis. Repeat requests during normal working hours are subject to a \$62 fee and a \$151 minimum fee plus actual costs for after hour requests.

Table 9

| | Metered | Flat Rate |
|---|---------------|------------|
| Residential | 26,211 | 153 |
| Industrial, Institutional, Commercial & Multi-Residential | 2,169 | 0 |
| Woodland Acres | 1 | 0 |
| | <u>28,381</u> | <u>153</u> |

■ The total number of customer connection is 28,534.

2019 Annual Drinking Water Report

Riverview Park & Zoo

In 2019 Riverview Park and Zoo was open and operating during regular hours (8:30 AM – dusk) from January 1st to December 31st. Attendance was not as strong in 2019 with total annual attendance estimated at less than 250,000 visitors. This was likely impacted in part by a late and very wet spring.

Ongoing improvements to the facilities and equipment continued in 2019 and included major upgrades to animal exhibits, accessibility upgrades, replacement of the deck at the river's edge, repairs to the snack bar building and numerous improvements made in preparation for our CAZA Accreditation Audit.



The zoo's animal collection saw many changes in 2019 with the deaths of some of our older animals as well as new acquisitions. Deaths included a whooper swan, a Gouldi's monkey, our female two-toed sloth, as well as the sudden and unexpected death of our male Bactrian camel. Other changes included the acquisition of two new young river otters and a Eurasian Lynx.

Park Operation & Facilities

The miniature train ride opened approximately four weeks late due to delays on the Pumphouse Rehabilitation Project. Completion of this project was later than planned due to a late and very rainy spring. The ride ran daily (weather permitting) from June 14th until September 22nd. With the late start, ridership was down significantly with an estimated 53,000 train riders in 2019.

The Park and Zoo's implementation of the PerfectMind software was completed for the most part in the spring of 2019. This new package facilitates facility bookings, program registrations, retail sales, donations, memberships, etc.

The Kiwanis Club of Peterborough operated the snack bar again in 2019 daily from May through September 4th and on weekends in the fall until Thanksgiving Day. Snack bar profits remained high for the fourth year in a row. Proceeds from the snack bar were shared between the Park and Zoo and the Kiwanis Club of Peterborough.

Zoo Operations & Facilities

The Park and Zoo's CAZA accreditation audit was conducted on July 16th, 17th and 18th following more than a year of extensive preparation by department staff and with additional support from other utility staff. The audit was very positive and the audit team stated they were very pleased with their findings. They identified seven areas of non-compliance and made seven additional recommendations for improvements. Park and Zoo staff were able to promptly resolve each of the issues and recommendations. Staff continue to

2019 Annual Drinking Water Report

exploring options to address automated perimeter containment options. The Park and Zoo was granted accreditation at the CAZA national conference in September of 2019.

Regular and emergency veterinary care was provided primarily by consulting veterinarian Dr. John Sallaway throughout 2019 with some occasional care being provided by Dr. Mike Cranfield. 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 2019 there were 3 births and 15 deaths of animals during the year. Post mortems were performed on those animals that had died in an attempt to determine cause of death. 22 new animals were acquired during the year.

As of December 31, 2019, the animal collection on site consisted of 111 animals, representing a total of 43 species (excluding groups of fish and invertebrates). The collection had 29 animals in on loan and 13 animals out on loan (Table 10).

Table 10

| | January 1 | Birth/ Hatchings | Acquisitions | Deaths | Disposition | December 31 |
|--------------------------|-----------|---------------------|--------------|--------|-------------|-------------|
| # Animals Owned on site | 74 | 8 | 14 | 13 | 1 | 82 |
| # Animals at Zoo on Loan | 29 | 0 | 8 | 2 | 6 | 29 |
| # Animals out on loan | 13 | 0 | 0 | 0 | 0 | 13 |
| Total Animals On Site | 103 | 8 | 22 | 15 | 7 | 111 |

2019 Annual Drinking Water Report

Capital Program

The 2019 capital program included the wrap up of the outdoor cat exhibit expansion and upgrade as well as a complete overhaul and expansion of the indoor meerkat exhibit.



Other capital items included new shade shelters for the splash pad, replacement of the deck at the river's edge, repairs to the snack bar building and upgrades to many of the food preparation/animal servicing facilities.

There were also numerous upgrades made to various animal exhibits and holdings.

Revenue Contributions

In 2019, Riverview Park and Zoo saw an increase in revenue from gift shop sales, educational programming and room rentals fees reaching over \$86,000. An interesting addition to the gift shop merchandise was Riverview Park and Zoo branded honey. This is prepared from honeycomb gathered from a new apiary located on the Park and Zoo's grounds.

Fundraising efforts grew significantly with an increase of 50% over 2018 totals. This included a 120% increase of individual donors who gifted over \$41,000, animal adoptions that were up 10% and bench dedications that were up 225%.

Notable fundraising achievements included obtaining the support of 100 Men Peterborough, who donated \$11,900 towards the expansion and upgrade of the slender-tailed meerkat exhibit. This project also benefited from a record-breaking 10th Anniversary Fun Run and Walk which raised an additional \$13,500 towards the project. The event had 429 participants and was supported by 20 community partners and business sponsors. Another significant donation was made by the Rotary Club of Peterborough Kawartha who provided \$30,000 toward the purchase of an outdoor musical playground.

A total of \$290,180 revenue was provided to the Park and Zoo through operational sources and fundraising in 2019 (Table 11).



2019 Annual Drinking Water Report

Table 11

| Fundraising Activity | 2018 | 2019 |
|--------------------------------------|------------------|------------------|
| Train Ticket Sales | \$133,573 | \$106,037 |
| Donation Boxes/ Fountain | \$8,340 | \$19,400 |
| Snack Bar Revenue | \$7,000 | \$17,000 |
| Other Donations<\$25,000 | \$27,220 | \$30,475 |
| Animal Adoption Program | \$13,450 | \$14,855 |
| RPZ 5 km Fun Run | \$12,080 | \$13,500 |
| Education Programs | \$10,561 | \$11,750 |
| Facility Rentals | \$2,532 | \$3,084 |
| Guest Services Kiosk | \$53,401 | \$74,079 |
| TOTAL DONATIONS & REVENUE | \$268,157 | \$290,180 |

Education

The 2019 education program continued to grow and benefited from strong support from our volunteers and our partnership with the School of Education at Trent University. Last year's program included Educators with roving "touch-tables", public speaking engagements, "behind-the-scenes" tours, the parent & tot "Zoo Crew" program, formal guided tours, our "Zoo Academy" and "Zoo Trek" half-day curriculum-based day sessions as well as the animal placement program developed in support of the project pilot of the Pathway to Stewardship and Kinship regional education initiative.

As part of this program, Park and Zoo staff provided a variety of creatures (turtles, fish, a tarantula, etc.), aquariums, and all of the required supplies (on loan) to five classes at local schools. Staff also provided a brief presentation on the species, its conservation significance and instruction on how to care for it.

The Park and Zoo also collaborated with Otonabee Conservation to deliver the renowned Bondar Challenge education program at Riverview Park and Zoo and

the Warsaw Caves Conservation Area. Developed by The Roberta Bondar Foundation, the Bondar Challenge is a unique experiential program that helps children make a connection to nature through the art of photography.

Other programming included the "Meet the Keeper" sessions, custom sessions for visiting groups, sleepover programs for Brownies/Scouts, the Homeschool Spelling Bee, and our seasonal conservation exhibit. Last year, the "Canada's Accredited Zoos and Aquariums" exhibit featured content highlighting the significance of accreditation, the important contribution CAZA's members make to conservation and education and also noted significant achievements of the Park and Zoo. The exhibit also included a series of special events delivered by partner organizations including Camp Kawartha, Otonabee Conservation, the Ontario Turtle Conservation Centre, and Kawartha Wildlife Rehabilitation.

Conservation

Last year the Park and Zoo's conservation program included cooperative projects with the Otonabee Region Conservation authority as well as

2019 Annual Drinking Water Report

supporting 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 African red-billed hornbill, slender-tailed meerkat and common squirrel monkey AZA Species Survival Plans, as well as the Emu and Brazilian agouti Population Management Plans.

In June, the Park and Zoo Supervisor travelled to Quebec on two occasions to provide animal care support to the Montreal SPCA and Humane Society International. The work was at a non-accredited zoo in Quebec that had been ordered closed and the animals seized. Our staff assisted with health evaluation of the animals, preparing animals for transportation as well as providing a temporary home (at the Park and Zoo) for a few of the seized animals.

Research

In 2019 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

The following events were hosted at the Riverview Park & Zoo:

- 18th Annual Peterborough Children's Water Festival

- Eight musical groups performed in the 2019 summer season at the Gazebo
- The 10th annual 5 km Fun Run with the Animals, raising \$13,500 for the Zoo
- Hosting the Rotary Spelling Bee

Staff & Volunteers

As of December 2019, permanent staff included 1 Manager and Curator, 1 Program Supervisor, 1 Groundskeeper, 1 Animal Care Technician, 3.5 Zookeepers and 1 Park & Zoo Maintenance.

From May to August a total of 19 seasonal student employees assisted with Park and Zoo operations. Student employee positions included 3 zookeepers, 2 zoo maintenance workers, 4 public educators, 1 park maintenance worker, 4 horticulture/grounds keeping workers and 5 train operators.

A total of 6 student employees worked part-time hours starting in September. The students operated Guest Services on weekends until Thanksgiving, assisted with workload in the park until the end of October, and assisted zoo staff on weekends for the remainder of the calendar year.

The Park and Zoo hosted fourteen college/university student placements over the year as well as three high school co-op placement students.

In 2019 the Volunteer Program continued to have strong support with a total of 31 volunteers assisting with our education program, and the operation of our seasonal conservation exhibit.

Appendix A – Financial Statement

PETERBOROUGH UTILITIES COMMISSION
FINANCIAL STATEMENTS
AT DECEMBER 31, 2019

TABLE OF CONTENTS

| | <u>Page Number</u> |
|---|-------------------------------|
| INDEPENDENT AUDITOR'S REPORT | |
| FINANCIAL STATEMENTS | |
| Statement of Financial Position | 1 |
| Statement of Operations and Accumulated Surplus | 2 |
| Statement of Cash Flows | 3 |
| Statement of Changes in Net Financial Assets | 4 |
| Notes to Financial Statements | 5 to 12 |



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, 2019 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, 2019, and its financial performance and its 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.

ASSURANCE • TAX • ADVISORY

Baker Tilly KDN LLP is a member of Baker Tilly Canada Cooperative, which is a member of the global network of Baker Tilly International Limited. All members of Baker Tilly Canada Cooperative and Baker Tilly International Limited are separate and independent legal entities.

Peterborough

Courtice

Lindsay

Cobourg

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
May 26, 2020

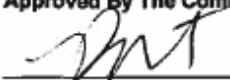
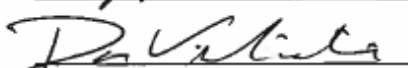


2019 Annual Drinking Water Report

PETERBOROUGH UTILITIES COMMISSION
STATEMENT OF FINANCIAL POSITION
At December 31, 2019

| | 2019 \$ | 2018 \$ |
|---|-------------|-------------|
| FINANCIAL ASSETS | | |
| Cash (Note 3) | 15,108,328 | 15,682,690 |
| Accounts receivable | | |
| Customer accounts | 955,369 | 886,668 |
| Sewer surcharge | 903,535 | 876,985 |
| Sundry | 285,532 | 434,896 |
| Unbilled water revenue on customer accounts | 1,362,000 | 1,316,000 |
| Unbilled sewer surcharge | 1,300,000 | 1,251,000 |
| | 19,914,764 | 20,448,239 |
| LIABILITIES | | |
| Accounts payable and accrued charges | 2,923,470 | 2,705,865 |
| Sewer surcharge payable | 2,971,495 | 2,914,539 |
| Long term debt (Note 4) | 9,605,703 | 10,981,703 |
| Customer deposits | 714,327 | 616,421 |
| | 16,214,995 | 17,218,528 |
| NET FINANCIAL ASSETS | 3,699,769 | 3,229,711 |
| NON-FINANCIAL ASSETS | | |
| Inventories | 423,339 | 363,471 |
| Tangible capital assets (Note 5) | 122,125,221 | 121,580,113 |
| Prepaid expenses | 291,424 | 6,587 |
| | 122,839,984 | 121,950,171 |
| ACCUMULATED SURPLUS (Note 6) | 126,539,753 | 125,179,882 |

Approved By The Commission

 Chair
 Member

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

2019 Annual Drinking Water Report

PETERBOROUGH UTILITIES COMMISSION STATEMENT OF OPERATIONS AND ACCUMULATED SURPLUS For The Year Ended December 31, 2019

| | Budget 2019 \$ (Unaudited) | Actual 2019 \$ | Actual 2018 \$ |
|--|-------------------------------------|----------------------|----------------------|
| REVENUES | | | |
| Sale of water | 17,615,000 | 17,539,039 | 17,394,669 |
| Contributed capital installation charges | 518,000 | 213,590 | 107,905 |
| Development charges earned | 1,810,000 | 218,888 | 2,119,948 |
| Fire protection | 650,000 | 650,000 | 650,000 |
| Sewer surcharge billings | 414,000 | 414,000 | 406,000 |
| Riverview Park and Zoo (Note 11) | 223,000 | 241,318 | 232,597 |
| Interest | 229,000 | 336,191 | 301,136 |
| Other | 230,000 | 348,919 | 200,934 |
| Electricity | 425,000 | 417,942 | 467,134 |
| Donations | 25,000 | 19,401 | 16,908 |
| | 22,139,000 | 20,399,288 | 21,897,231 |
| EXPENSES | | | |
| Water treatment and storage | 4,511,000 | 4,216,040 | 3,985,702 |
| Water distribution | 2,255,000 | 2,550,019 | 2,478,251 |
| Riverview Park and Zoo (Note 11) | 1,685,000 | 1,938,691 | 1,682,650 |
| Administration | 3,665,000 | 3,823,270 | 3,421,714 |
| Amortization | 6,390,000 | 6,185,433 | 6,043,949 |
| Interest | 478,000 | 325,964 | 379,704 |
| | 18,984,000 | 19,039,417 | 17,991,970 |
| ANNUAL SURPLUS | 3,155,000 | 1,359,871 | 3,905,261 |
| OPENING ACCUMULATED SURPLUS | 125,139,000 | 125,179,882 | 121,274,621 |
| CLOSING ACCUMULATED SURPLUS | 128,294,000 | 126,539,753 | 125,179,882 |

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

2019 Annual Drinking Water Report

PETERBOROUGH UTILITIES COMMISSION
STATEMENT OF CASH FLOWS
For The Year Ended December 31, 2019

| | 2019 \$ | 2018 \$ |
|---|-------------|-------------|
| CASH PROVIDED BY (USED IN): | | |
| OPERATIONS | | |
| Annual surplus | 1,359,871 | 3,905,261 |
| Add: Non-cash charges to operations | | |
| Amortization | 6,185,433 | 6,043,949 |
| Contributed capital installation charges | (213,590) | (107,905) |
| | 7,331,714 | 9,841,305 |
| Change in non-cash working capital items (Note 8) | (13,125) | 774,832 |
| | 7,318,589 | 10,616,137 |
| INVESTING ACTIVITY | | |
| Purchase of tangible capital assets | (6,516,951) | (7,891,223) |
| FINANCING ACTIVITIES | | |
| Repayment of long term debt | (1,376,000) | (1,363,080) |
| NET CHANGE IN CASH DURING THE YEAR | (574,362) | 1,361,834 |
| CASH POSITION - BEGINNING OF YEAR | 15,682,690 | 14,320,856 |
| CASH POSITION - END OF YEAR | 15,108,328 | 15,682,690 |

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

2019 Annual Drinking Water Report

PETERBOROUGH UTILITIES COMMISSION STATEMENT OF CHANGES IN NET FINANCIAL ASSETS For The Year Ended December 31, 2019

| | Budget 2019 \$ (Unaudited) | Actual 2019 \$ | Actual 2018 \$ |
|--|-------------------------------------|----------------------|----------------------|
| Annual Surplus | 3,155,000 | 1,359,871 | 3,905,261 |
| Acquisition Of Tangible Capital Assets | (8,919,000) | (6,730,541) | (7,999,128) |
| Amortization Of Tangible Capital Assets | 6,390,000 | 6,185,433 | 6,043,949 |
| Decrease (Increase) in Inventories | - | (59,868) | (140,214) |
| Decrease (Increase) in Prepaid Expenses | - | (284,837) | 83,272 |
| Change In Net Financial Assets | 626,000 | 470,058 | 1,893,140 |
| Net Financial Assets, beginning of year | 2,638,000 | 3,229,711 | 1,336,571 |
| Net Financial Assets, end of year | 3,264,000 | 3,699,769 | 3,229,711 |

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, 2019

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) Use of 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, 2019

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.

2019 Annual Drinking Water Report

PETERBOROUGH UTILITIES COMMISSION NOTES TO THE FINANCIAL STATEMENTS For The Year Ended December 31, 2019

3. CASH

| | 2019 \$ | 2018 \$ |
|-------------------|------------|------------|
| Unrestricted cash | 5,649,929 | 7,169,688 |
| Restricted cash | 9,458,399 | 8,513,002 |
| | 15,108,328 | 15,682,690 |

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 % | 2019 \$ | 2018 \$ |
|--|--------------------|------------|------------|
| March 5, 2020, annual principal payments of \$660,000, interest paid semi-annually | 3.893 | 660,000 | 1,320,000 |
| July 5, 2027, semi-annual blended payments of \$274,120 | 3.180 | 3,845,703 | 4,261,703 |
| November 6, 2036, semi-annual principal payments of \$150,000 plus interest | 2.790 | 5,100,000 | 5,400,000 |
| | | 9,605,703 | 10,981,703 |

Future repayments for the long term debt are as follows:

| | Principal \$ | Interest \$ | Total \$ |
|------------|-----------------|----------------|-------------|
| 2020 | 1,389,334 | 274,740 | 1,664,074 |
| 2021 | 743,095 | 236,956 | 980,051 |
| 2022 | 757,297 | 214,384 | 971,681 |
| 2023 | 771,955 | 191,356 | 963,311 |
| 2024 | 787,083 | 168,157 | 955,240 |
| Thereafter | 5,156,939 | 715,670 | 5,872,609 |
| | 9,605,703 | 1,801,263 | 11,406,966 |

2019 Annual Drinking Water Report

PETERBOROUGH UTILITIES COMMISSION **NOTES TO THE FINANCIAL STATEMENTS** **For The Year Ended December 31, 2019**

5. 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, 2018 | 50,596,273 | 167,677,934 | 9,938,277 | 17,403 | 2,334,331 | 230,564,218 |
| Additions | 114,745 | 5,298,214 | 615,32 | - | 1,970,838 | 7,999,128 |
| Balance At December 31, 2018 | 50,711,018 | 172,976,148 | 10,553,608 | 17,403 | 4,305,169 | 238,563,346 |
| Additions | 313,710 | 9,544,779 | 733,859 | - | (3,861,807) | 6,730,541 |
| Balance At December 31, 2019 | 51,024,728 | 182,520,927 | 11,287,467 | 17,403 | 443,362 | 24,529,387 |
| Accumulated Amortization | | | | | | |
| Balance at January 1, 2018 | 23,571,974 | 82,922,683 | 4,427,382 | 17,235 | - | 110,939,284 |
| Amortization for the year | 1,241,599 | 4,511,414 | 290,828 | 8 | - | 6,043,949 |
| Balance At December 31, 2018 | 24,813,513 | 87,434,107 | 4,178,310 | 17,243 | - | 116,893,233 |
| Amortization for the year | 1,190,231 | 4,685,083 | 310,111 | 8 | - | 6,185,433 |
| Balance At December 31, 2019 | 26,003,804 | 92,119,190 | 5,028,421 | 17,251 | - | 123,168,666 |
| Net Book Value | | | | | | |
| At December 31, 2018 | 25,897,445 | 85,542,041 | 5,835,298 | 160 | 4,305,169 | 121,580,113 |
| At December 31, 2019 | 25,020,924 | 90,401,737 | 6,259,046 | 152 | 443,362 | 122,125,221 |

PETERBOROUGH UTILITIES COMMISSION

NOTES TO THE FINANCIAL STATEMENTS

For The Year Ended December 31, 2019

6. ACCUMULATED SURPLUS

Accumulated surplus consists of the following:

| | 2019 \$ | 2018 \$ |
|--|-------------|--------------|
| Operating surplus | 4,561,836 | 6,068,470 |
| Investment in tangible capital assets | | |
| Tangible capital assets - net book value | 122,125,221 | 121,580,113 |
| Long term debt | (9,605,703) | (10,981,703) |
| Reserve funds (Note 10) | 9,458,399 | 8,513,002 |
| | 126,539,753 | 125,179,882 |

7. 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 Distribution 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:

| | 2019 \$ | 2018 \$ |
|-----------------------------|------------|------------|
| Expenditures | | |
| Professional services | 9,029,241 | 8,628,889 |
| Building rent | 393,618 | 384,729 |
| Software and equipment rent | 104,000 | 114,000 |
| | 9,526,859 | 9,127,618 |

Billing and collecting for the sewer surcharge is done by the Commission for the City of Peterborough. During the year \$414,000 (2018 - \$406,000) was recognized as revenue for providing this service. At December 31, the sewer surcharge payable of \$2,971,495 (2018 - \$2,914,539) 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, 2019

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

| | 2019 \$ | 2018 \$ |
|--|------------|------------|
| Accounts receivable | 54,113 | (141,693) |
| Unbilled revenue and sewer surcharge | (95,000) | 136,000 |
| Inventories | (59,868) | (140,214) |
| Prepaid expenses | (284,837) | 83,272 |
| Accounts payable and sewer surcharge payable | 274,561 | 828,656 |
| Customer deposits | 97,906 | 8,811 |
| | (13,125) | 774,832 |
| Other information: | | |
| Interest paid | 325,964 | 375,836 |

9. BUDGET FIGURES

The budget, approved by the Commission, for 2019 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.

2019 Annual Drinking Water Report

PETERBOROUGH UTILITIES COMMISSION
NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended December 31, 2019

10. RESERVE FUNDS

| | Budget 2019 \$ (Unaudited) | Actual 2019 \$ | Actual 2018 \$ |
|--|-------------------------------------|----------------------|----------------------|
| TRANSFERS FROM OPERATIONS: | | | |
| Sale of water | 735,000 | 728,877 | 728,152 |
| Development charges | 1,810,000 | 218,889 | 2,119,948 |
| Interest | 153,000 | 199,650 | 147,394 |
| Donations | 25,000 | 19,401 | 16,860 |
| Riverview park and zoo | 50,000 | - | 50,000 |
| | 2,773,000 | 1,166,817 | 3,062,354 |
| TRANSFERS | | | |
| For tangible capital assets | (2,030,000) | (221,420) | (2,136,828) |
| CHANGE IN RESERVE FUNDS | 743,000 | 945,397 | 925,526 |
| OPENING RESERVE FUNDS | 8,308,000 | 8,513,002 | 7,587,476 |
| CLOSING RESERVE FUNDS | 9,051,000 | 9,458,399 | 8,513,002 |
| ANALYZED AS FOLLOWS: | | | |
| INTERNALLY RESTRICTED | | | |
| Water treatment plant reserve fund | 8,230,000 | 8,274,498 | 7,374,136 |
| Park and zoo state of good repair reserve fund | 153,000 | 102,835 | 100,633 |
| | 8,383,000 | 8,377,333 | 7,474,769 |
| EXTERNALLY RESTRICTED | | | |
| Park and Zoo major projects reserve fund | 606,000 | 594,745 | 562,551 |
| Park and Zoo major animal care reserve fund | 62,000 | 486,321 | 475,682 |
| | 668,000 | 1,081,066 | 1,038,233 |
| | 9,051,000 | 9,458,399 | 8,513,002 |

PETERBOROUGH UTILITIES COMMISSION
NOTES TO THE FINANCIAL STATEMENTS
For The Year Ended December 31, 2019

11. OPERATIONS FOR RIVERVIEW PARK AND ZOO

| | Budget 2019 \$ (Unaudited) | Actual 2019 \$ | Actual 2018 \$ |
|----------------------------------|-------------------------------------|----------------------|----------------------|
| EXPENSES | | | |
| Maintenance park | 659,000 | 677,966 | 606,668 |
| Maintenance train | 99,000 | 98,476 | 70,834 |
| Animal care and zoo maintenance | 927,000 | 1,162,249 | 1,005,148 |
| | 1,685,000 | 1,938,691 | 1,682,650 |
| REVENUES | | | |
| Train | 130,000 | 106,037 | 133,573 |
| Miscellaneous | 93,000 | 135,281 | 99,024 |
| | 223,000 | 241,318 | 232,597 |
| NET EXPENSES FOR THE YEAR | 1,462,000 | 1,697,373 | 1,450,053 |

12. SUBSEQUENT EVENT

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 |
| m ² | Square Meters |
| m ³ | Cubic Meters |
| MAC | Maximum Acceptable Concentration |
| mg/L | Milligram per Litre |
| ML | Megalitres |
| MECP | Ministry of Environment & Climate Change |
| MOH | Medical Officer of Health |
| ng/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 |

