Corporation de la ville de of the Town of HAWKESBURY

600, rue Higginson Street, Hawkesbury, ON K6A 1H1

2020

WASTEWATER TREATMENT PLANT ANNUAL PERFORMANCE REPORT

Prepared by the Environmental Service
January 1, 2020 to December 31, 2020 reporting period

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Introduction

The Corporation of the Town of Hawkesbury owns and operates the Wastewater Treatment Plant (WWTP) located at 815, Main East street. The WWTP has a rated capacity of 13,800 m^3/d and is designated a Class IV Wastewater Treatment Facility.

The wastewater collection system consists of over 45 km of sanitary sewers, 6 km of combined sewers, a raw sewage pumping station and a wastewater treatment plant that treats approximately 3,928 sanitary services.

Wastewater is conveyed through gravity to the raw sewage pumping station (RSPS) located near the WWTP. Under normal dry weather conditions, sewage that enters the RSPS is pumped to the WWTP for treatment and discharge to the Ottawa River. However, during significant wet weather events, the RSPS influent channel overflows into a tank where a large capacity pumps it into two equalization tanks to be treated by the WWTP.

The WWTP consists of two vortex grit removal screens of 6 mm in diameter, three primary clarifiers, three aeration tanks, four secondary clarifiers and an ultraviolet disinfection before discharge into the Ottawa River. Sludge handling consists of two aerobic digester and one sludge stabilizer. Digested sludge is thickened by two centrifuges and bio-solid is disposed of on approved farmlands.

The following 2020 Annual Performance Report has been prepared and submitted to meet the requirements of the Ministry of the Environment, Conservation and Parks (MECP) Amended Environmental Compliance Approval (ECA) #4692-8DVQTW for the design and operation of the Corporation of the Town of Hawkesbury Wastewater Treatment Plant (WWTP).

Interpretation of Monitoring and Analytical Data

In 2020, no effluent sample results exceeded the Monthly Average Effluent Limits outlined in Condition 7(1) to 7(4) of the amended ECA. Please refer to *Appendix A* for a detailed summary of monthly concentrations and waste loadings. *Table 1* (below) compares the Monthly Average Effluent Concentration range and Waste Loading range with the Amended ECA Monthly Criteria Effluent Compliance Limits, whereas *Table 2* summarizes the individual Notification of Effluent Quality Non-Compliance with the ECA issued during the year.

Pursuant to condition 9(5) of the ECA, un-ionized ammonia was calculated on weekly total ammonia nitrogen, temperature and pH sample results and ranged from 0.0003 mg/L to 0.0536 mg/L with an annual average of 0.0167 mg/L during 2020. Please refer to *Appendix C* for the detailed monthly results. We also tested for acute lethality for Rainbow trout and Daphnia magna with Pollutech Enviroquatics Limited. The certificate of analysis from the lab showed 0% mortality, meaning no lethality for rainbow trout and *Daphnia magna*.

TABLE 1

Monthly Average Effluent Concentration Range and Waste Loading Range compared with the Amended ECA Monthly Criteria Effluent Compliance Limits

Effluent Parameter	Monthly Average Effluent Concentration Range in mg/L	ECA Monthly Effluent Concentration Limit in mg/L	Monthly Average Effluent Waste Loading Range in kg/day	ECA Monthly Effluent waste Loading Limit in kg/day
CBOD-5	3.0 – 3.6	**25.0**	12.4 – 40.1	**345**
Total Suspended Solid	3.3 – 5.6	**25.0**	19.4 – 66.1	**345**
Total Phosphorous	0.06 – 0.39	**0.89**	0.34 – 2.93	**12.3**
E.coli (ct/100ml)	1.0 – 68.7	**200 ct/100ml**	**n/a**	**n/a**
Total Ammonia	0.09 – 0.37	**12.0 (June 1 to Sept 30)**	0.39 – 2.24	**166 (June 1 to Sept 30)**
Total Ammonia	0.26 – 4.83	**20.0 (Oct. 1 to May 31)**	1.74 – 36.51	**276 (Oct. 1 to May 31)**
pH	7.3 to 7.7	**6.0 to 9.5**	**n/a**	**n/a**

n/a - not an ECA requirement

TABLE 2

Notification of Effluent Quality Non-Compliance

Month	Parameter & Limit	Result
January	No effluent quality non-compliance	n/a
February	No effluent quality non-compliance	n/a
March	No effluent quality non-compliance	n/a
April	No effluent quality non-compliance	n/a
May	No effluent quality non-compliance	n/a
June	No effluent quality non-compliance	n/a
July	No effluent quality non-compliance	n/a
August	No effluent quality non-compliance	n/a
September	No effluent quality non-compliance	n/a
October	No effluent quality non-compliance	n/a
November	No effluent quality non-compliance	n/a
December	No effluent quality non-compliance	n/a

Operating Problems Encountered and Correction Actions Taken

Due to our dynamic certified team, preventative maintenance schedule and regular equipment inspections, occasional problems were diagnosed quickly and corrected immediately. There were no major breakdown or major operating problems in 2020.

Maintenance Summary

Regular preventive maintenance of existing and new equipment was performed throughout the year. The following are the major maintenance projects completed this year at the WWTP:

- Electrical main wire repair.
- Wastewater raw sewage pumping building restoration.
- Vortex grit removal screen maintenance project.
- New variable frequency drive (VFD) installation.
- Heating system maintenance and upgrade.

Effluent Quality Assurance and Control Measures Undertaken

All sampling was performed by competent certified operators in accordance with the Terms and Conditions of the Amended Environmental Compliance Approval (ECA). Samples were submitted to an accredited laboratory (Caduceon Laboratories) for analysis. Additionally, analysis was performed on the dewatered cake (biosolids) for land application and toxicity analysis (Acute Lethality) was performed on the final effluent.

Calibration and Inspection

The following calibrations were performed:

-Flowmeters and level sensors by Capital Controls and Instrumentation Inc.
-Gas sensors from every building by CDTEC Calibrations Inc. (twice, every six month)

The following inspections were performed:

-Backflow preventers by Backflow Preventer and Plumbing
-Lifting devices by Corbett & Corbett Inc.
-Extinguishers by Champlain Fire Protection
-Fire alarm system by Chubb Edwards

Effluent Objectives

Table 3 (below) illustrates the Monthly Average Effluent Concentration Range compared to the Monthly Average Effluent Objectives outlined in Conditions 6(1) and 6(2) (a), (b) and (c) of the amended ECA. There were no effluent objective results exceedance for 2020.

TABLE 3
Monthly Average Effluent Concentration Range Vs Monthly ECA Average Effluent Objectives

Effluent Objectives Parameter	Monthly Average Effluent Concentration Range in mg/L	Monthly ECA Avg. Effluent Objectives
CBOD-5	3.0 - 6.0	15.0
Total Suspended Solids	3.3 – 5.6	15.0
Total Phosphorus	0.06 – 0.39	0.5
Total Ammonia (June 1 to Sept 30)	0.09 – 0.37	8.0
Total Ammonia (Oct 1 to May 31)	0.26 – 4.83	12.0
pH	7.3 – 7.7	6.5 to 8.5
E. Coli (ct/100ml)	1 – 68.7	100 ct/100ml
Rated Capacity	3,351 - 28,402m^3/day	13,800 m^3/day

Biosolids Generation

During 2020, the Hawkesbury WWTP hauled 259.30 dry Tons of Organic Waste (biosolids) to the transfer site (Ferme A.G.L. Malette, ECA # 8311-8UZJ8K). The *Table 4* (below) summarizes the amounts and locations of the soil conditioning activities in 2020. We anticipate the volume of biosolids to be 190 dry tons for 2021.

TABLE 4
Location of Spreading the Organic Waste

Hawkesbury Organic Soil Conditioning Summary			
Organic Soil Conditioning Location	**NASM plan**	**Field #**	**Dry Ton (kg)**
Ferme A.G.L. Malette	23299	n/a	259.30
HAWKESBURY WWTP TOTAL ORGANIC WASTE GENERATED			259.30

Summary of Complaints

There were no complaints reported in 2020.

By-passing / Spills / Abnormal Discharges

There were 6 Combined Sewer Overflow (CSO) and 1 Secondary Bypass (SB) in 2020. Please refer to *Appendix F*, 2020 Bypass Event Report and *Appendix G*, 2020 Annual Bypass Report. All bypasses were reported to the Spill Action Center and the Ministry of the Environment, Conservation and Parks (MECP) and we communicated the laboratory results of the bypasses to our MECP Environmental Officer by email. These bypasses represent 0.255% of the total annual raw sewage flow. There were no spills or abnormal discharge events to report during this year.

Additional Information Requested

Ongoing communication with the MECP has occurred throughout the reporting year, addressing the MUMP's data to Ottawa and Etobicoke area offices. There was no additional information requested during this reporting period. We trust this satisfies the Ministry of the Environment, Conservation and Parks (MECP) Amended Environmental Compliance Approval (ECA) #4692-8DVQTW for the design and operation of the Corporation of the Town of Hawkesbury Wastewater Treatment Plant (WWTP).

Availability of Report

This report is available at the following locations:

1. ***Environmental Service Department***
   Corporation of the Town of Hawkesbury
   815 Main East
   Hawkesbury (Ontario) K6A 1B5
   (613) 678-9269

2. ***Hawkesbury Public Library***
   550 Higginson Street
   Hawkesbury, Ontario
   K6A 1H1

3. ***Town's website*** www.hawkesbury.ca

If the format of this document is inadequate, please contact the Clerk's office at 613-632-0106 extension 2226 and the municipality will provide, to the best of its abilities, the required assistance.

This 2020 Annual Report has been prepared on March 11, 2021 and has been endorsed by the Corporation of the Town of Hawkesbury Municipal Council on March 29, 2021.

Nancy Beks

Prepared by
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DWQMS rep.
Corporation of the Town of Hawkesbury

Martin Perron

Approved by
Martin Perron
Environmental Service Superintendent
Corporation of the Town of Hawkesbury

Appendix A
2020 Monthly Performance Assessment Report

Flow Summary (m^3)	January	February	March	April	May	June	July	August	September	October	November	December
Raw Total Monthly Flow	163,231	119,555	366,028	277,764	160,421	134,581	172,001	189,140	172,241	234,349	198,664	263,230
Raw Avg. Daily Flow	5,266	4,123	11,807	9,259	5,175	4,486	5,548	6,101	5,741	7,560	6,622	8,491
Raw Max. Daily Flow	20,162	4,783	25,882	17,418	7,801	4,944	10,412	14,112	10,141	13,248	11,385	28,275
Raw Min. Daily Flow	4,083	3,762	4,486	5,751	4,265	4,191	4,198	4,457	4,749	5,222	5,471	5,667

TKN (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average	23.08	33.20	21.34	14.83	27.25	38.10	23.68	20.15	29.76	23.08	36.40	24.10
Maximum	29.30	42.40	40.80	30.80	40.80	46.80	28.80	26.70	40.20	31.10	75.60	42.30
Minimum	16.40	21.60	7.60	6.40	13.00	31.30	19.60	11.20	17.00	15.40	19.80	14.00

Total Phosphorous (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average	2.89	4.05	2.74	2.09	6.02	4.68	2.35	2.97	5.58	2.71	5.38	2.65
Maximum	4.01	5.27	4.37	4.70	14.40	6.39	2.73	3.97	9.49	3.72	12.50	5.95
Minimum	1.22	2.46	0.58	0.60	2.58	3.03	2.03	1.67	2.15	1.64	2.22	1.42

pH	January	February	March	April	May	June	July	August	September	October	November	December
Average	7.3	7.4	7.6	7.6	7.3	7.3	7.3	7.3	7.3	7.5	7.2	7.4
Maximum	7.5	7.8	7.8	7.7	7.4	7.5	7.7	7.6	7.5	7.7	7.3	7.7
Minimum	7.2	7.3	7.5	7.4	7.3	7.2	7.1	7.2	7.1	7.4	7.2	7.2

Suspended Solids (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average	231.3	195.0	144.0	147.5	550.0	286.0	107.5	232.5	330.0	142.5	291.8	139.4
Maximum	290.0	260.0	210.0	250.0	1160.0	420.0	220.0	420.0	560.0	180.0	640.0	270.0
Minimum	180.0	110.0	60.0	80.0	270.0	170.0	30.0	110.0	160.0	120.0	155.0	80.0

CBOD - 5 (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average	83.3	71.8	47.0	41.0	96.5	97.0	52.8	83.8	104.2	64.5	100.3	45.2
Maximum	119.0	90.0	84.0	79.0	166.0	109.0	87.0	127.0	170.0	84.0	135.0	99.0
Minimum	43.0	48.0	16.0	13.0	63.0	86.0	27.0	43.0	66.0	53.0	59.0	24.0

Appendix B
2020 Monthly Raw Sewage Data Report

Flow Summary (m^3)	January	February	March	April	May	June	July	August	September	October	November	December
Raw Total Monthly Flow	163,231	119,555	366,028	277,764	160,421	134,581	172,001	189,140	172,241	234,349	198,664	263,230
Raw Avg. Daily Flow	5,266	4,123	11,807	9,259	5,175	4,486	5,548	6,101	5,741	7,560	6,622	8,491
Raw Max. Daily Flow	20,162	4,783	25,882	17,418	7,801	4,944	10,412	14,112	10,141	13,248	11,385	28,275
Raw Min. Daily Flow	4,083	3,762	4,486	5,751	4,265	4,191	4,198	4,457	4,749	5,222	5,471	5,667

TKN (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average	23.08	33.20	21.34	14.83	27.25	38.10	23.68	20.15	29.76	23.08	36.40	24.10
Maximum	29.30	42.40	40.80	30.80	40.80	46.80	28.80	26.70	40.20	31.10	75.60	42.30
Minimum	16.40	21.60	7.60	6.40	13.00	31.30	19.60	11.20	17.00	15.40	19.80	14.00

Total Phosphorous (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average	2.89	4.05	2.74	2.09	6.02	4.68	2.35	2.97	5.58	2.71	5.38	2.65
Maximum	4.01	5.27	4.37	4.70	14.40	6.39	2.73	3.97	9.49	3.72	12.50	5.95
Minimum	1.22	2.46	0.58	0.60	2.58	3.03	2.03	1.67	2.15	1.64	2.22	1.42

pH	January	February	March	April	May	June	July	August	September	October	November	December
Average	7.3	7.4	7.6	7.6	7.3	7.3	7.3	7.3	7.3	7.5	7.2	7.4
Maximum	7.5	7.8	7.8	7.7	7.4	7.5	7.7	7.6	7.5	7.7	7.3	7.7
Minimum	7.2	7.3	7.5	7.4	7.3	7.2	7.1	7.2	7.1	7.4	7.2	7.2

Suspended Solids (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average	231.3	195.0	144.0	147.5	550.0	286.0	107.5	232.5	330.0	142.5	291.8	139.4
Maximum	290.0	260.0	210.0	250.0	1160.0	420.0	220.0	420.0	560.0	180.0	640.0	270.0
Minimum	180.0	110.0	60.0	80.0	270.0	170.0	30.0	110.0	160.0	120.0	155.0	80.0

CBOD - 5 (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average	83.3	71.8	47.0	41.0	96.5	97.0	52.8	83.8	104.2	64.5	100.3	45.2
Maximum	119.0	90.0	84.0	79.0	166.0	109.0	87.0	127.0	170.0	84.0	135.0	99.0
Minimum	43.0	48.0	16.0	13.0	63.0	86.0	27.0	43.0	66.0	53.0	59.0	24.0

Appendix C
2020 Monthly Effluent Data Report

Flow Summay (m^3)	January	February	March	April	May	June	July	August	September	October	November	December
Effluent Total Monthly Flow	158,938	111,830	363,448	274,327	157,099	131,098	167,874	185,747	169,300	230,987	195,364	259,512
Effluent Avg. Daily Flow	5,127	3,856	11,724	9,144	5,068	4,370	5,415	5,992	5,643	7,451	6,512	8,371
Effluent Max. Daily Flow	20,055	4,366	25,898	17,209	7,722	4,825	10,257	13,969	10,053	13,122	11,243	28,402
Effluent Min. Daily Flow	3,965	3,351	4,326	5,652	4,160	4,070	4,077	4,360	4,662	5,091	5,351	5,537

TKN (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average	5.68	6.88	2.86	2.10	1.78	1.46	1.05	1.35	1.27	7.15	1.30	1.34
Maximum	11.50	10.00	4.60	2.50	2.20	1.70	2.10	1.90	1.40	22.50	2.00	2.30
Minimum	2.00	5.20	1.30	1.70	1.40	1.20	0.20	1.00	1.03	1.40	0.90	0.90

NH3 as N (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average	4.10	4.50	2.50	1.03	0.53	0.09	0.23	0.37	0.26	4.83	0.26	0.30
Maximum	8.08	7.09	6.01	1.45	1.02	0.10	0.79	1.00	0.57	16.30	0.78	0.75
Minimum	0.98	3.21	0.33	0.68	0.12	0.07	0.03	0.05	0.06	0.50	0.07	0.04

Un-Ionized Ammonia (NH3) mg/L	January	February	March	April	May	June	July	August	September	October	November	December
Average	0.0237	0.0249	0.0177	0.0082	0.0045	0.0007	0.0033	0.0055	0.0059	0.0239	0.0016	0.0023
Maximum	0.0536	0.0390	0.0402	0.0139	0.0090	0.0013	0.0107	0.0130	0.0148	0.0423	0.0042	0.0053
Minimum	0.0064	0.0188	0.0024	0.0054	0.0010	0.0005	0.0004	0.0013	0.0010	0.0074	0.0005	0.0003

Total Phosphorous (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average	0.08	0.09	0.08	0.06	0.07	0.10	0.13	0.06	0.06	0.39	0.07	0.06
Maximum	0.10	0.14	0.11	0.10	0.10	0.16	0.24	0.08	0.10	1.38	0.08	0.14
Minimum	0.05	0.07	0.06	0.03	0.05	0.06	0.05	0.04	0.03	0.04	0.04	0.02

Suspended Solids (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average	5.3	5.3	5.6	4.5	4.5	4.6	3.5	4.5	3.6	3.8	3.3	3.4
Maximum	8.0	8.0	8.0	8.0	9.0	8.0	4.0	7.0	5.0	4.0	4.0	4.0
Minimum	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

CBOD - 5 (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average	3.0	3.0	3.4	3.0	3.0	3.0	3.0	3.0	3.6	3.0	3.0	3.0
Maximum	3.0	3.0	5.0	3.0	3.0	3.0	3.0	3.0	6.0	3.0	3.0	3.0
Minimum	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

pH	January	February	March	April	May	June	July	August	September	October	November	December
Average	7.5	7.5	7.6	7.6	7.5	7.3	7.5	7.5	7.6	7.7	7.4	7.6
Maximum	7.5	7.5	7.7	7.7	7.6	7.5	7.7	7.6	7.7	7.8	7.5	7.7
Minimum	7.3	7.4	7.6	7.5	7.4	7.1	7.3	7.4	7.6	7.6	7.4	7.5

Temperature	January	February	March	April	May	June	July	August	September	October	November	December
Average	8.2	7.5	7.3	8.7	13.6	18.7	22.5	22.4	20.5	16.9	10.9	7.6
Maximum	10.1	8.8	8.5	11.0	17.9	21.2	24.0	23.8	24.3	19.0	16.1	13.4
Minimum	6.5	6.2	6.0	7.1	11.0	15.5	21.0	20.4	18.5	14.8	4.1	6.3

Appendix D
2020 Monthly Chemical Data Report

Disinfection \ Effluent E. Coli (cfu / 100 mL)	January	February	March	April	May	June	July	August	September	October	November	December
Average	3.3	1.4	2.9	1.2	1.2	3.3	7.2	12.3	68.7	3.8	12.7	11.2
Maximum	59.0	4.0	25.0	2.0	2.0	21.0	220.0	40.0	200.0	33.0	280.0	127.0
Minimum	1.0	1.0	1.0	1.0	1.0	1.0	1.0	5.0	11.0	1.0	1.0	1.0

Phosphorous Removal \ Chem. Add Coagulant (kg)	January	February	March	April	May	June	July	August	September	October	November	December
Average	156	120	363	285	129	127	167	180	114	152	133	174
Total	4,845	3,479	11,244	8,549	3,999	3,815	5,186	5,585	3,435	4,726	3,987	5,390

Coagulant Dosage (mg/L)	January	February	March	April	May	June	July	August	September	October	November	December
Average (dry)	16.0	16.0	16.0	16.0	13.0	15.0	16.0	15.0	10.0	10.0	10.0	10.0
Maximum (dry)	16.0	16.0	16.0	16.0	13.0	16.0	16.0	16.0	13.0	11.0	11.0	11.0
Minimum (dry)	15.0	15.0	12.0	13.0	12.0	12.0	14.0	13.0	10.0	10.0	10.0	10.0

Polymer	January	February	March	April	May	June	July	August	September	October	November	December
Total (kg)	825.4	1098.0	924.6	822.3	935.4	944.2	1073.4	722.2	630.0	491.9	514.7	1118.9

Appendix E
2020 Monthly Cake Analysis

Month	Cake Hauled (Dry Ton)	pH	Total Solids (%)	NH_3 (µg/g)	TKN (µg/g)	NO_2 (µg/g)	NO_3 (µg/g)	P (µg/g)	K (µg/g)	Al (µg/g)	As (µg/g)	Ca (µg/g)	Cd (µg/g)	Cr (µg/g)	Co (µg/g)	Cu (µg/g)	Pb (µg/g)	Hg (µg/g)	Mo (µg/g)	Ni (µg/g)	Se (µg/g)	Zn (µg/g)
January	23.93	6.90	22.9	497	57300	1	10	23200	2370	54700	0.8	27300	0.6	45	3	589	14	0.210	4	22	1	1060
February	27.17	5.72	18.8	324	70500	1	1	24400	2390	53400	3		0.5	36	2	517	11	0.270	5	16	2	786
March	24.55	6.43	19.4	820	73000	3	5	22800	2500	54100	3	12100	0.5	33	3	481	10	0.2	4	14	2	770
April	23.04	7.06	23.5	1080	50700	10	10	27600	1800	56400	4	21400	0.6	37	3	437	14	0.230	4	17	2	853
May	27.05	6.38	20.6	388	45800	1	2	18700	2470	70200	3	20100	0.6	50	5	419	15	0.190	4	22	2	798
June	23.92	7.12	22.7	824	51800	1	62	26800	1950	53700	3	19400	0.6	32	3	294	11	0.240	3	16	2	833
July	24.77	6.65	24.7	3180	57300	10	10	24500	2060	52800	2	21700	0.5	33	4	314	13	0.260	3	16	2	890
August	15.09	6.45	21	360	53200	10	1050	22900	1990	50500	3	19000	0.5	35	4	315	15	0.230	3	21	2	880
September	13.13	6.15	20.2	139	51600	1	446	28800	1690	60000	3	17200	0.6	42	4	426	19	0.290	5	22	2	1110
October	13.10	6.23	22.2	18200	47500	10	194	30200	1700	59900	3	19900	0.8	39	3	417	19	0.27	5	21	2	1270
November	14.57	6.14	24.4	334	49500	10	3060	30500	1860	56000	2	24200	0.7	35	3	375	20	0.240	3	19	2	1260
December	28.97	6.53	34.2	521	62800	10	65	27400	1700	58400	3	20100	0.6	30	3	364	15	0.340	4	18	2	1110

Total Cake Hauled (dry ton) = 259.30

Appendix F
2020 Bypass Event Report

Date	Location	Type	Duration (hours)	Volume (m^3)	Reason (Code)
March 13, 2020	Main East & Cameron Street intersection	CSO	1 hour 12 minutes	432	1
March 29, 2020	Main East & Cameron Street intersection	CSO	6 hour 59 minutes 7 seconds	2,515	1
March 30, 2020	Main East & Cameron Street intersection	CSO	54 minutes	324	1
July 16, 2020	Main East & Cameron Street intersection	CSO	73 minutes	438	1
July 27, 2020	Main East & Cameron Street intersection	CSO	5 minutes, 46 seconds	35	1
August 2, 2020	Main East & Cameron Street intersection	CSO	7 minutes, 24 seconds	44	1
November 16 to 17, 2020	Wastewater Treatment Plant - Effluent	SB	20 hours	2,420	3

Type
PB (Primary Bypass)
SB (Secondary Bypass)
STPO (Sewage Treatment Plant Overflow)
PSO (Pumping Station Overflow)
CSO (Combined Sewer Overflow)

Reason Codes	
1 : Heavy Precipitation	5 : Sewer Problems
2 : Snow Melt	6 : Power Failure
3 : Equipment Failure	7 : Exceed Design Capacity
4 : Maintenance/upgraded	O : Others

Appendix G
2020 Annual Bypass Summary Report

Month	WasteWater Treatment Plant Primary Bypass		
	Number (days)	Duration (hours)	Volume (m^3)
January	0	0.0	0
February	0	0.0	0
March	3	545.0	3271
April	0	0.0	0
May	0	0.0	0
June	0	0.0	0
July	2	79.0	473
August	1	7.0	44
September	0	0.0	0
October	0	0.0	0
November	2	1200.0	2420
December	0	0.0	0
Total	8	1831.0	6208
Volume of ByPass as % of Average Daily			0.255%