RACINE WASTEWATER UTILITY

ANNUAL REPORT

2020

2021 Racine Wastewater Utility Annual Report

2021 BOARD OF WASTEWATER COMMISSIONERS
ALDER NATALIA TAFT, PRESIDENT
TERRY MCCARTHY, SECRETARY

JOHN HEWITT
CLAUDE LOIS
BOB LUI
MAYOR CORY MASON
SHANNON POWELL
MATTHEW REJC
DEAN ROSENBAUM
STACY SHEPPARD
ALDER JOHN TATE II

ALTERNATES:
ANTHONY BEYER
ANTHONY BUNKELMAN
THOMAS FRIEDEL
JERROLD KLINKOSH

INTERIM GENERAL MANAGER
MICHAEL L. GITTER

ADMINISTRATIVE MANAGER
KENNETH M. SCOLARO

SUPERINTENDENT
MARY-FRANCES T. KLIMEK

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Racine Water and Wastewater Utilities

Michael L. Gitter, P.E.
Interim General Manager

Kenneth M. Scolaro, C.P.A.
Administrative Manager
Chad W. Regalia, P.E.
Chief Engineer

RACINE ON THE LAKE
City of Racine, WISCONSIN

July 30, 2021

To: Michael L. Gitter, Interim General Manager,
Racine Wastewater Utility Commissioners

Submitted herewith is a detailed annual report of the Wastewater Treatment Plant and System for the year 2020.

Respectfully Submitted,

Kenneth M. Scolaro
Administrative Manager

Mary-Frances T. Klimek
Superintendent

Amanda E. Kaminski
Field Director

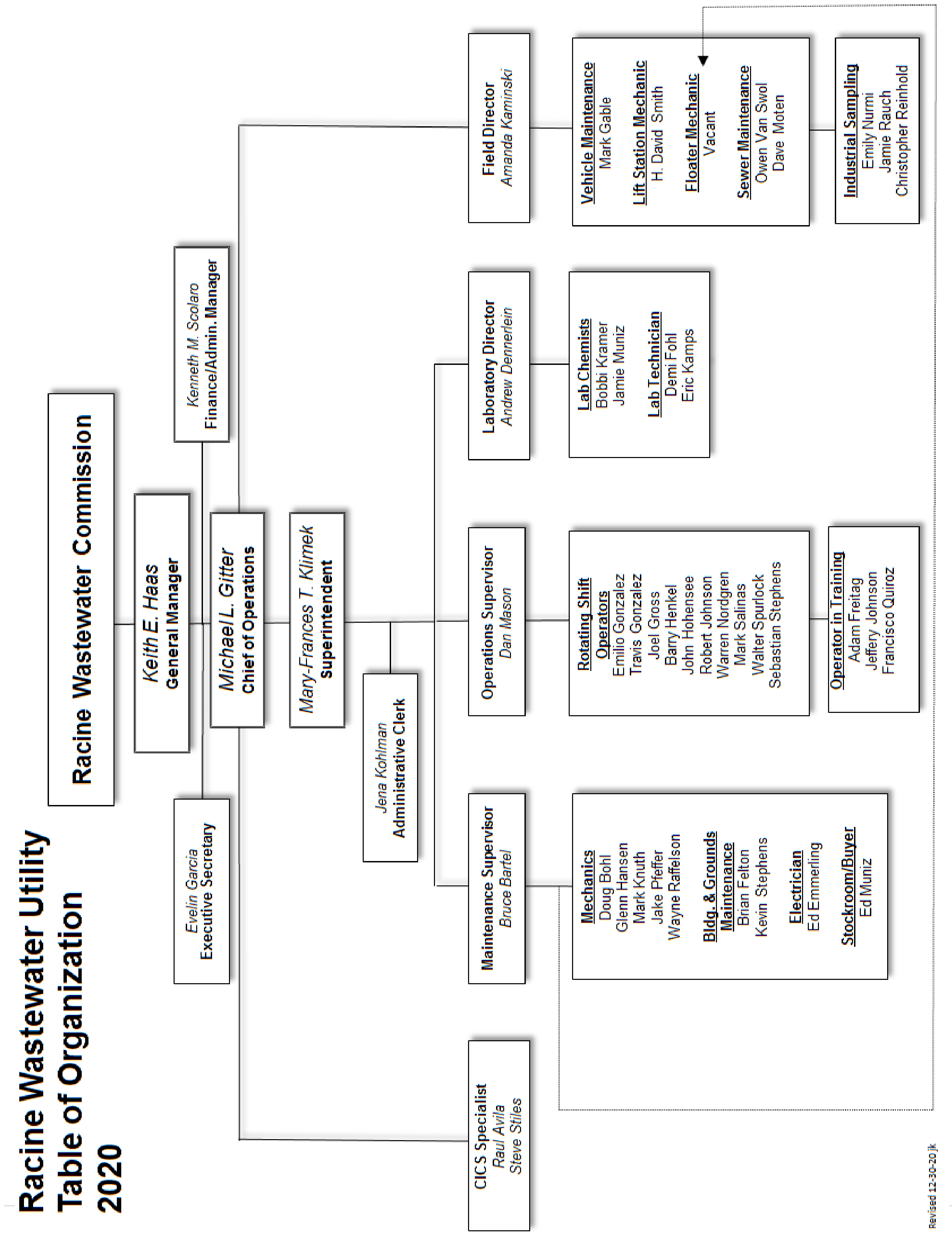
Andrew E.W. Dennerlein
Laboratory Director

Bruce J. Bartel
Maintenance Supervisor

Dan R. Mason
Operations Supervisor

Steve P. Stiles
Computer, Instrumentation and Controls System Specialist

ADMINISTRATION & EMPLOYEE INFORMATION


Racine Wastewater Utility
Table of Organization
2020
Racine Wastewater Commission
Keith E. Haas
General Manager
Evelin Garcia
Executive Secretary
Kenneth M. Scolaro
Finance/Admin. Manager
Michael L. Gitter
Chief of Operations
Mary-Frances T. Klimek
Superintendent
Jena Kohlman
Administrative Clerk
CICS Specialist
Raul Avila
Steve Stiles
Maintenance Supervisor
Bruce Bartel
Operations Supervisor
Dan Mason
Laboratory Director
Andrew Dennerlein
Field Director
Amanda Kaminski
Mechanics
Doug Bohl
Glenn Hansen
Mark Knuth
Jake Pfeffer
Wayne Raffelson
Bldg. & Grounds Maintenance
Brian Felton
Kevin Stephens
Electrician
Ed Emmerling
Stockroom/Buyer
Ed Muniz
Rotating Shift Operators
Emilio Gonzalez
Travis Gonzalez
Joel Gross
Barry Henkel
John Hohensee
Robert Johnson
Warren Nordgren
Mark Salinas
Walter Spurlock
Sebastian Stephens
Operator in Training
Adam Freitag
Jeffery Johnson
Francisco Quiroz
Lab Chemists
Bobbi Kramer
Jamie Muniz
Lab Technician
Demi Fohl
Eric Kamps
Vehicle Maintenance
Mark Gable
Lift Station Mechanic
H. David Smith
Floater Mechanic
Vacant
Sewer Maintenance
Owen Van Swol
Dave Moten
Industrial Sampling
Emily Nurmi
Jamie Rauch
Christopher Reinhold
Revised 12-30-20 jk

Administration & Staff

Administration

Michael Gitter, P.E., Interim General Manager & Chief of Operations. Mr. Gitter was hired in 2007. He is responsible for the oversight of all functions at the utilities. Mr. Gitter became the Interim General Manager in 2021 after the retirement of Keith E. Haas.

Kenneth Scolaro, CPA, Administrative Manager. Mr. Scolaro joined the Utility in 1996 as the Assistant Administrative Manager, and was promoted to Administrative Manager in 1998. Mr. Scolaro is responsible for the administration of financial, clerical, and customer service functions under the direction of the General Manager.

Evelin Garcia, Executive Secretary for the Wastewater Utility, provides administrative support to the General Manager and Chief of Operations. Ms. Garcia worked for the Racine Water Utility from 2014 to 2019 prior to moving into her current position.

Racine Wastewater Treatment Plant Staff

Mary-FrancesKlimek, Superintendent. Ms. Klimek began her employment with the Utility in 1990. She was promoted to the Operations Supervisor in 2005 and continued in that role until she was named Superintendent in 2015. Klimek is responsible for the supervision of all functions of the treatment plant

Andrew Dennerlein, Laboratory Director. Mr. Dennerlein directs, supervises and ensures proper operations of all laboratory functions. He has been with the Utility since 2018.

Amanda Kaminski, Field Director. Ms. Kaminski is responsible for overseeing external field operations, administers the industrial pretreatment program, and supervises sanitary sewer collection system maintenance & repair as well as the service garage. She has been employed with the Utility since 2011, and was appointed Field Director in 2020.

Bruce Bartel, Maintenance Supervisor. Mr. Bartel is responsible for all mechanical and grounds maintenance at the plant. He has been employed with the Utility since 2006 and was appointed Maintenance Supervisor in 2011.

Dan Mason, Operations Supervisor. Mr. Mason is responsible for process control and shift operations, including solids handling at the treatment plant. He was named Operations Supervisor in 2018. Mr. Mason has been employed with the Utility since 2011.

Steve Stiles, Computer Instrumentation and Controls System Specialist. Mr. Stiles is responsible for the operations and maintenance of all computers, electronic monitoring systems and equipment. He has been employed with the Utility since 2019.

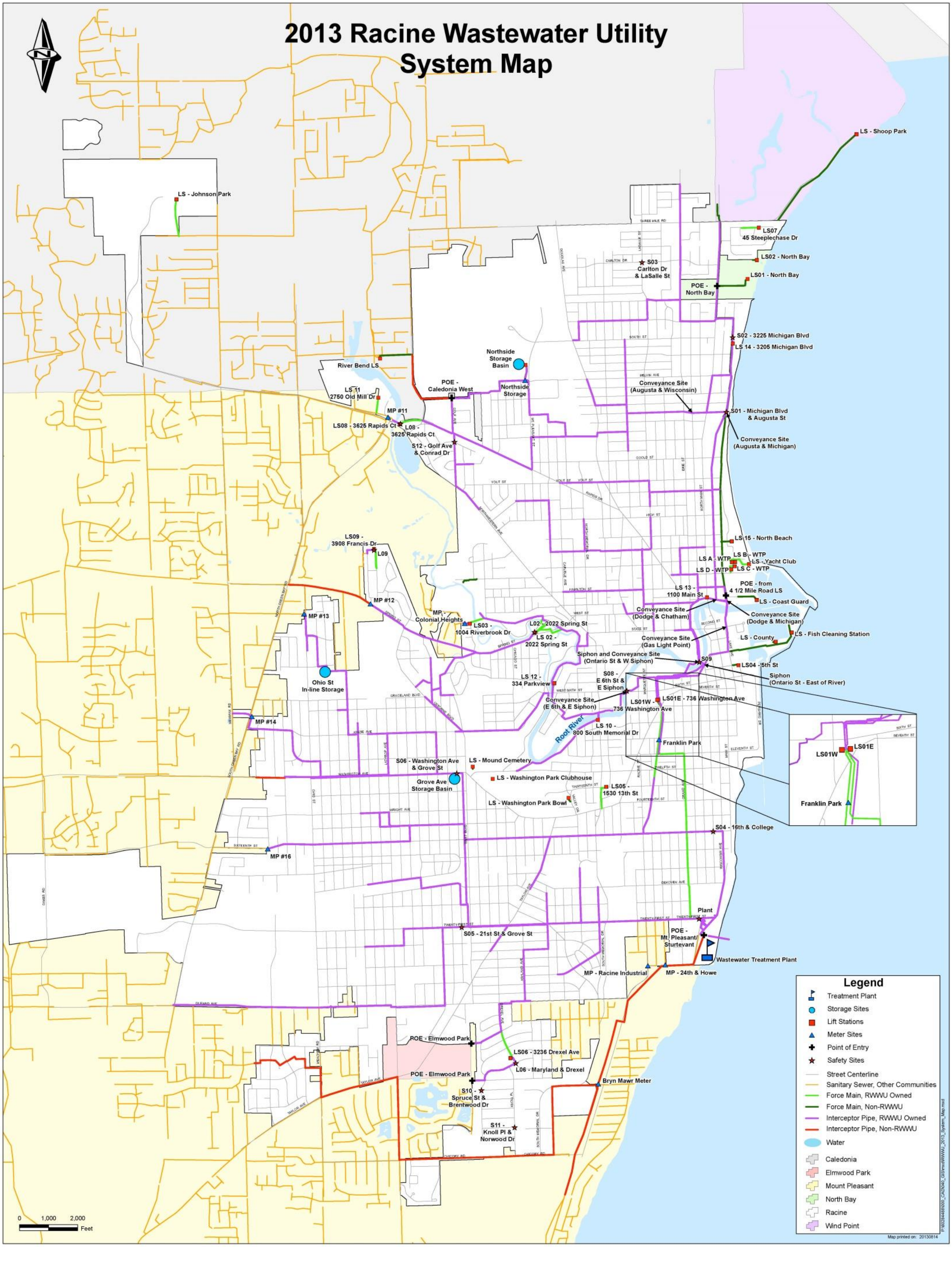
Jena Kohlman, Administrative Clerk. Ms. Kohlman performs highly responsible administrative services, including purchasing, data compilation, report preparation, dispatch and financial related duties. She has been employed with the City of Racine since 2011 and joined the Utility in 2017.

EMPLOYEES & CLASSIFICATIONS 2020

Last Name	First Name	Classification	DOH
Bohl	Douglas	Mechanic	3/17/2008
Emmerling	Ed	Electrician	8/30/2011
Felton	Brian	Bldg & Gr Maint	2/25/2019
Fohl	Demi	Laboratory Technician	3/16/2020
Freitag	Adam	Operator in Training	12/30/2020
Gable	Mark	Garage Mechanic	2/25/2008
Gonzalez	Emilio	Operator	11/30/2009
Gonzalez	Travis	Operator	8/17/2015
Gross	Joel	Operator	6/18/2018
Hansen	Glenn	Mechanic	2/25/2002
Henkel	Barry	Operator	4/15/1991
Hohensee	John	Operator	10/22/2018
Johnson	Jeffery	Operator In Training	2/24/2020
Johnson	Robert	Operator	3/28/2016
Kamps	Eric	Laboratory Technician	4/29/2013
Knuth	Mark	Mechanic	4/16/2012
Kramer	Bobbi	Lab Chemist	4/8/1996
Moten	David	Sewer Maintenance	4/8/2009
Muniz	Jamie	Lab Chemist	8/29/2008
Muniz	Edward	Mechanic	2/27/1984
Nordgren	Warren	Operator	1/21/2019
Nurmi	Emily	Sampling	12/23/2019
Pfeffer	Jake	Mechanic	9/16/2019
Quiroz	Francisco	Operator In Training	1/27/2020
Raffelson	Wayne	Mechanic	5/3/2004
Rauch	Jamie	Pretreatment Inspector	12/9/2019
Salinas	Mark	Operator	5/10/1999
Smith	H. David	Lift Station Mechanic	4/11/2005
Spurlock	Walter	Operator	12/18/2000
Stephens	Kevin	Bldg & Gr Maint	8/13/2012
Stephens	Sebastian	Operator	7/11/2005
Van Swol	Owen	Sewer Maintenance	11/3/2003

SERVICE AREA

2013 Racine Wastewater Utility System Map



Lift Station Photos, Addresses

Lift Station #1
736 Washington Avenue

Lift Station #2
2022 Spring Street

Lift Station #3
1004 Riverbrook Drive

Lift Station #4
6 - 5th Street

Lift Station #5
1530 - 13th Street

Lift Station #6
3236 Drexel Avenue

Lift Station #7
45 Steeplechase Drive

Lift Station #8
3625 Rapids Court

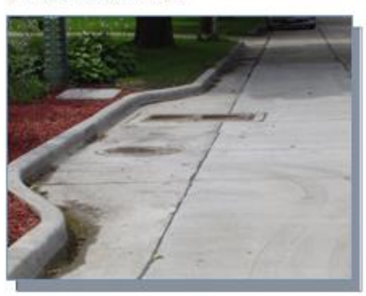
Lift Station #9
3908 Francis Drive

Lift Station #10
800 South Memorial Drive

Lift Station #11
2750 Old Mill Road

Lift Station #12
334 Parkview Drive

Lift Station #13
100 N. Main Street



Lift Station #14
3205 Michigan Boulevard

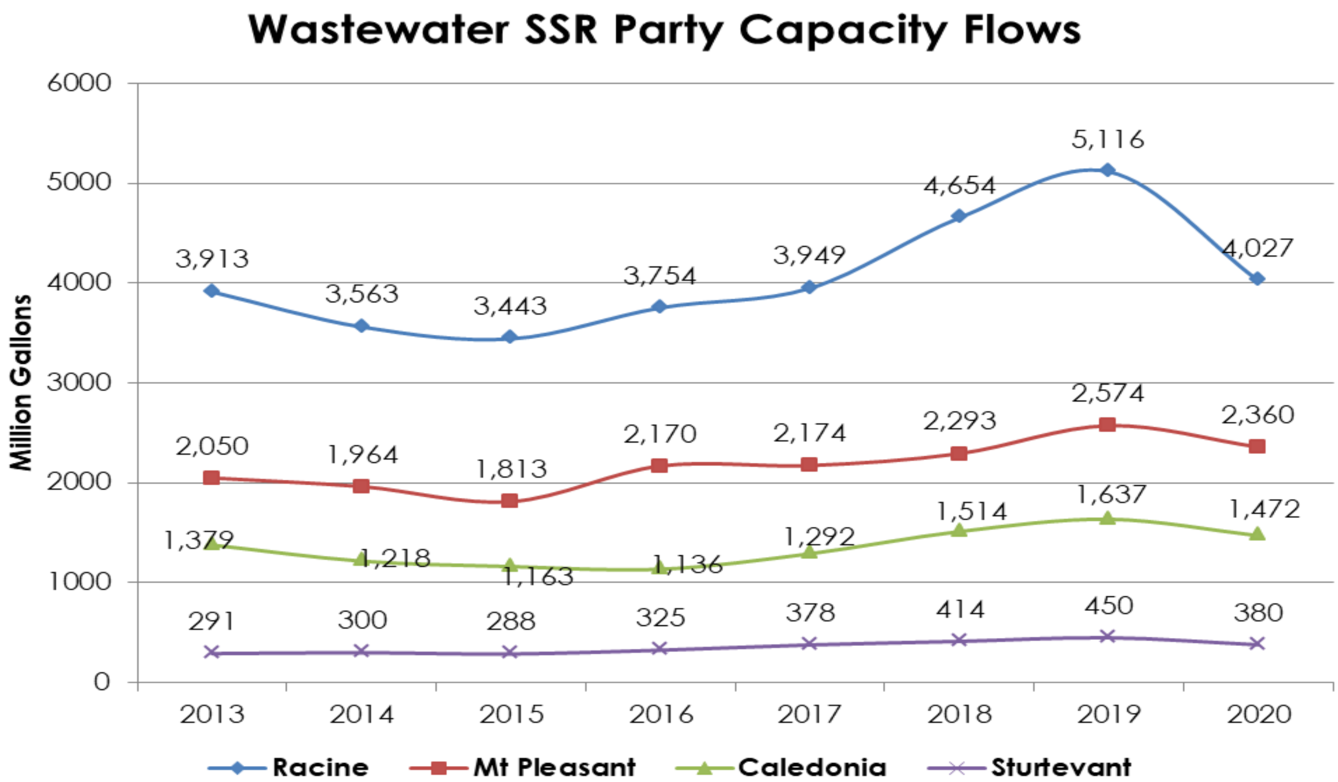
SERVICE AREA FLOW CONTRIBUTIONS

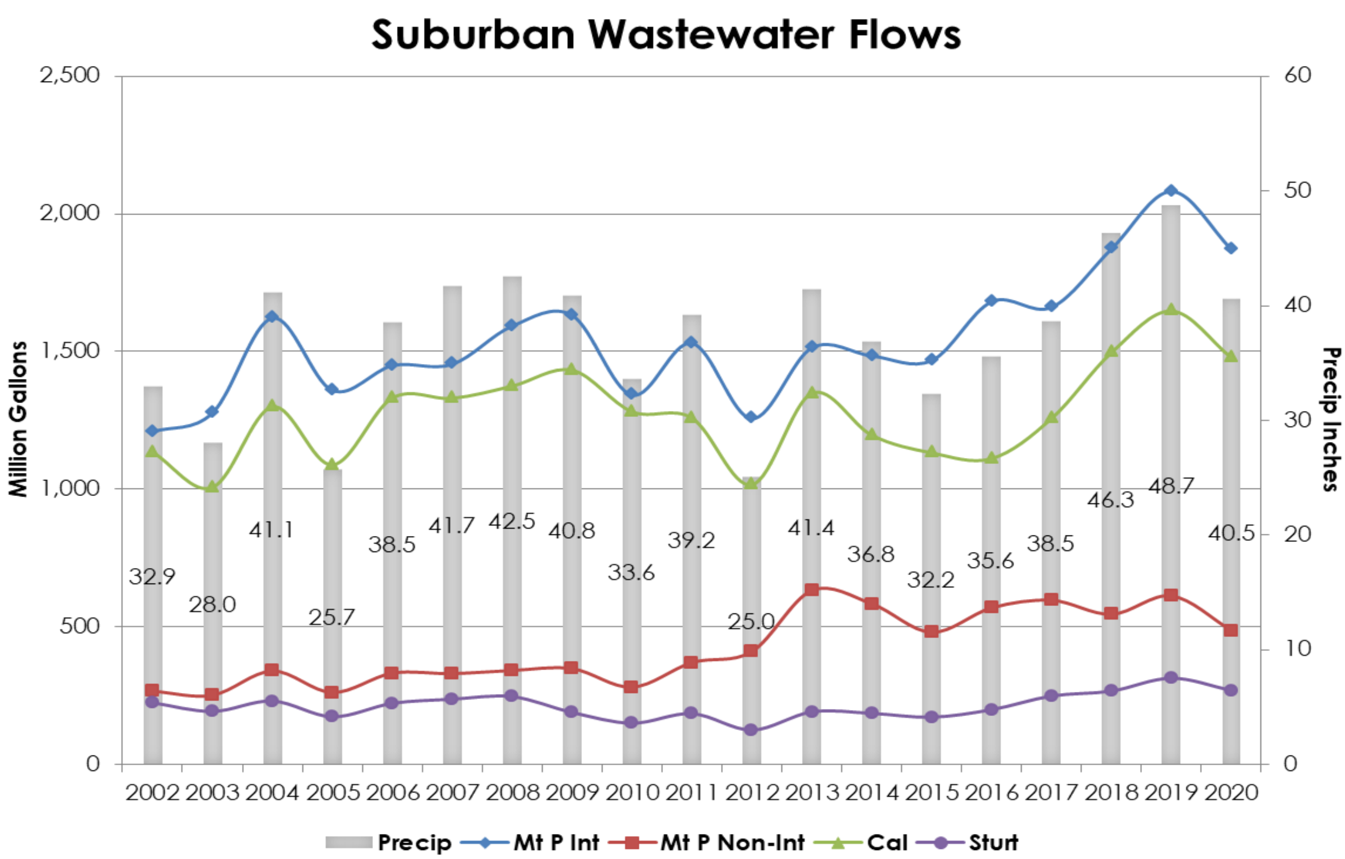
2020	MG	MGD	% Plant Flow
TREATMENT PLANT	**8,257.68**	**22.62**	**484.85**
LIFT STATION # 1	4,594.48	12.56	55.64
LIFT STATION # 2	213.02	0.58	2.58
LIFT STATION # 3	16.60	0.05	0.20
LIFT STATION # 4	3.30	0.01	0.04
LIFT STATION # 5	37.33	0.10	0.45
LIFT STATION # 6	88.32	0.24	1.07
LIFT STATION # 7	14.84	0.04	0.18
LIFT STATION # 8	151.09	0.41	1.83
LIFT STATION # 9	9.80	0.03	0.12
LIFT STATION # 10	101.71	0.28	1.23
LIFT STATION # 11	3.81	0.01	0.05
LIFT STATION # 12	7.74	0.02	0.09
LIFT STATION # 13	1.98	0.01	0.02
LIFT STATION # 14	6.01	0.02	0.07
MOUNT PLEASANT INTERCEPTOR:			
INDUSTRIAL	155.17	0.43	1.88
RESIDENTIAL	1,716.21	4.70	20.78
OTHER INTERCEPTOR FLOW:			
RACINE	221.52	0.61	2.68
STURTEVANT	268.67	0.74	3.25
CALEDONIA (HWY V)	10.63	0.03	0.13
TOTAL INTER.	2,372.20	6.50	28.73
NON-INTERCEPTOR:			
MOUNT PLEASANT	487.06	1.33	5.90
RACINE	28.31	0.08	0.34
TOTAL NON-INTER.	515.37	1.41	6.24
CALEDONIA	1,467.15	4.02	17.77
NORTH BAY	5.18	0.01	0.06
ELMWOOD PARK	13.15	0.04	0.16

% APPROX.

2020	1st	2nd	3rd	4th	MG TOTAL
MOUNT PLEASANT INTERCEPTOR FLOW					
INDUSTRIAL	33.892	40.929	44.320	36.030	155.171
RESIDENTIAL	531.151	450.997	373.326	360.731	1,716.205
OTHER INTERCEPTOR FLOW					
RACINE	64.030	57.536	52.489	47.462	221.518
STURTEVANT	84.200	81.610	53.680	49.180	268.670
CALEDONIA (HWY V)	2.614	2.618	2.724	2.676	10.632
NON-INTERCEPTOR FLOW					
MT. PLEASANT	146.019	168.232	92.822	79.984	487.058
RACINE	8.761	9.072	5.889	4.586	28.308
CALEDONIA	425.709	436.817	332.709	271.918	1,467.152
NORTH BAY	1.310	1.371	1.282	1.215	5.178
ELMWOOD PARK	3.267	2.988	2.862	4.037	13.153
TOTAL (Mgal)	**1,300.953**	**1,252.170**	**962.103**	**857.819**	**4,373.045**

SUBURBAN COMMUNITY FLOWS & WASTEWATER SSR PARTY CAPACITY FLOWS





Revision #8 – Transfer of 1.0 MGD of Average Day Flow from Caledonia to Mount Pleasant. Approved by Wastewater Commission 7/31/2018.

	Day Flow (mgd)	Day Flow (mgd)	Hour Flow (mgd)	Monthly Flow (mgd)	Daily BOD (lbs)	Monthly BOD (lbs)	Daily TSS (lbs)	Monthly TSS (lbs)	Daily TKN (lbs)	Monthly TKN (lbs)	Daily P (lbs)	Monthly P (lbs)
Racine [1]	17.06	90.59	109.12	23.2	14,555	17,466	17,796	23,313	2,253	3,019	425	543
Mount Pleasant [2][4]	11.49	51.71	91.04	15.63	10,173	12,208	13,888	18,194	1,396	1,870	290	371
Yorkville	-	-	-	-	-	-	-	-	-	-	-	-
Raymond	-	-	-	-	-	-	-	-	-	-	-	-
Caledonia [3][4]	5.13	18.32	24.72	6.97	5,716	6,859	7,054	9,241	901	1,208	170	218
Sturtevant	1.78	6.04	10.18	2.42	1,606	1,927	1,981	2,596	253	340	48	61
North Park	-	-	-	-	-	-	-	-	-	-	-	-
Crestview	-	-	-	-	-	-	-	-	-	-	-	-
Total	35.46	166.66	235.06	48.22	32,050	38,460	40,719	53,344	4,803	6,437	933	1,193

1 Includes Villages of North Bay and Elmwood Park, excludes Colonial Heights.
2 Includes Colonial Heights.
3 Includes Wind Point (from North Park).
4 Includes transfer of 1.0 MGD of Average Day Flow from Caledonia to Mount Pleasant.
5 Peak Hour Flows in Exhibits F1(a) and F1 (b) will be different than in Exhibit E due to SSR Parties purchasing additional Conveyance Capacity within the conveyance system but not at the Wastewater Treatment Plant.

A Glance Back to 1938








Exhibit F1(a) – Conveyance Capacity Allocation

2020 Facilities Plan Model Values Revision 9

Entry Point Location[1]	Peak Hourly Flow Allocation[2] (MGD)	Flow Allocation 2020 Facilities Plan MIKE URBAN Simulated Flow[3] (MGD)
Caledonia West[5,9]	10.542	15.282
Caledonia East[9]	13.074	16.265
Caledonia I-94 Area[5,9]	1.100	
Caledonia Total	24.716	31.547
MP 11	3.128	3.129
MP 12[10]	2.608	1.562
MP 13[4]	3.070	1.410
MP 14[4,6]	1.730	0.729
MP 16	0.648	0.649
Colonial Heights Meter	0.290	0.290
Downstream of MP 11 (unmetered)	0.259	0.259
Downstream of MP 12 (unmetered)[10]	0.059	0.030
Downstream of MP 13 (unmetered)[4]	0.446	0.177
Downstream of MP 14 (unmetered)[4,6]	0.270	0.122
M04107-Z0055 (MP 15) (unmetered)[4]	0.620	0.246
Enters at U0050 (unmetered)	0.160	0.160
M08006-M08005 (MP 17) (unmetered)	0.852	0.852
M08003 (MP 18) (unmetered)	0.061	0.061
Bryn Mawr (minus Sturtevant)	74.679	74.690
MP Allocation to Wastewater Treatment Facility[9]	6.694	
Mount Pleasant Total	95.574	84.366
Sturtevant Total	10.180	10.182
RA Echo Lane[6,7,8]	2.200	
Racine Total[4,10]	118.387	109.120

1. Locations include both metered and unmetered areas within the service area.
2. Based on 2020 Facilities Plan MIKE URBAN flows with adjustments for unmetered areas within Racine.
3. MIKE URBAN hydraulic model results.
4. Flow allocations adjusted to reflect approved Cost of Service Studies for Grove and Ohio Storage Facilities 20130614. (Flow allocation adjustments include revising MP 13 from 1.409 to 3.07 MGD, Downstream of MP 13 (unmetered) from 0.177 to 0.466 MGD, MP 14 from 0.728 to 1.989 MGD, Downstream of MP 14 (unmetered) from 0.122 to 0.309 MGD, M04107-Z005 (MP 15) (unmetered) from 0.246 to 0.620 MGD, and Racine Total from 109.120 to 111.502 MGD)
5. Village of Caledonia transfer of 1.100 MGD from the Caledonia West meter point to a new I-94 basin.
6. Flow allocations revised based upon modeled data to reflect additional conveyance capacity due to the relay of sewers in Kinzie Avenue from Ostergaard Avenue to Echo Lane and Echo Lane from Kinzie Avenue to Lindermann Avenue. Mount Pleasant allocations were negotiated with the Commission (see note 7). A Racine flow meter (RA Echo Lane) was added at the downstream end of the interceptor sewer upgrade project, near the intersection of Echo Lane and Lindermann Avenue.

7. The City of Racine purchased 1.28 MGD of remaining excess capacity in the Kinzie-Echo sewer system that the Commission was holding. The motion to purchase this capacity was approved at the 9/26/2017 Commission Meeting. See note 8 for additional details on the purchased capacity.

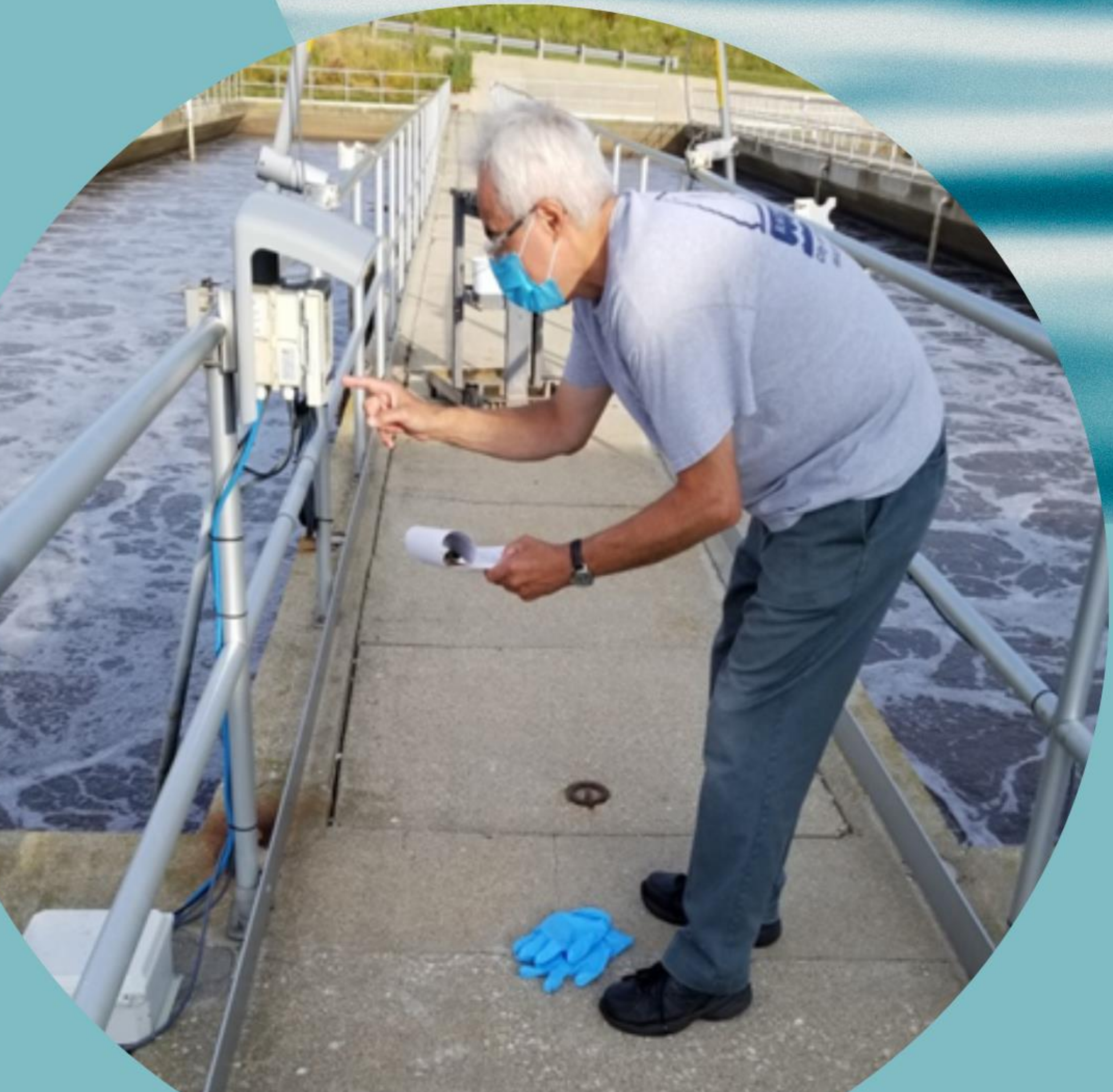
8. Commission modeling showed a need for 3.208 MGD of capacity in the Kinzie-Echo interceptor sewer. The Commission purchased 0.298 MGD of excess capacity through negotiations with Mount Pleasant, who did not believe they were in need of this much capacity. Additionally, the originally recommended 18-inch Kinze-Echo sewer upgrade, which was sized to convey a flow of 3.218 MGD, was upsized during construction to a 21-inch pipe with a flow capacity of 4.2 MGD. The Commission picked up the cost of the interceptor sewer oversizing, increasing their allocated capacity by 0.982 MGD (4.2 MGD minus 3.218 MGD), for a total puchased capacity of 1.28 MGD (0.298 MGD plus 0.982 MGD).

9. Caledonia transferred 1.0 MGD average day flow to Mount Pleasant. Based on standard transfer units Caledonia's conveyance capacity is reduced and Mount Pleasant's conveyance capacity is increased 6.694 MGD. Caledonia selected the amount to reduce Caledonia East and West to equal 6.694 MGD. Mount Pleasant will convey the additional 6.694 MGD directly to the Wastewater Treatment Facility. No additional conveyance capacity is allocated in the existing conveyance system. Standard Transfer units are defined and quantified in section 1.102 of the Racine Area Intergovernmental Sanitary Sewer Service, Revenue Sharing, Cooperation and Settlement Agreement

10. Flow allocations adjusted to reflect approved Cost of Service Study for LS02 Storage Basin. (Flow allocation adjustments include revising MP 12 from 1.561 to 2.608 MGD, Downstream of MP 12 (unmetered) from 0.030 to 0.059 MGD, and Racine Total from 111.502 to 118.387 MGD)

COMPLIANCE MAINTENANCE ANNUAL REPORT

INFLUENT FLOW & LOADINGS, EFFLUENT QUALITY (BOD, TSS, PHOSPHORUS & AMMONIA), BIOSOLIDS MANAGEMENT, STAFFING, OPERATOR CERTIFICATION, FINANCIAL MANAGEMENT, COLLECTION SYSTEMS



COMPLIANCE MAINTENANCE ANNUAL REPORT – CMAR

The Compliance Maintenance Annual Report (CMAR) has been an annual self-evaluation-reporting requirement for publicly owned wastewater treatment plants since 1987. The CMAR program was revised in 1992, in 2005, 2014, and in 2016. Annual submittal of an electronic CMAR form no later than August 30, 2021 for 2020 is required under *Wisconsin Administrative Code NR 208 – Compliance Maintenance Annual Report*.

The purpose of the CMAR is to evaluate the wastewater treatment system for problems or deficiencies. Management, operation and maintenance activities are described. Owners identify proposed actions to prevent violations of *WPDES permits* and water quality degradation. The CMAR program encourages actions that:

- Promote the owners' awareness and responsibility for wastewater conveyance and treatment needs.
- Maximize the useful life of wastewater treatment systems through improved operation & maintenance.
- Initiate formal planning, design and construction to prevent WPDES permit violations.

There are ten sections in the CMAR that apply to the Racine Wastewater Utility. Letter grades (A, B, C, D, F) are assigned to each section denoting compliance and performance. Section grades of C, D, and F require comments in the report. Section grades D & F require an action plan on the part of the Utility to correct deficiencies. An overall grade point average less than 3.00 requires an action response on the part of the Utility as well. **The Utility's overall grade point average was 4.0**. *The report submitted in 2021 is for calendar year 2020.*

CMAR Section Summaries and Grades for 2020:

Influent Flow and Loadings: *Grade A*
This section looks at plant influent loadings and design parameters to determine adequate plant capacity to treat incoming wastewater.

Effluent Quality BOD: *Grade A*
This section reviews plant performance and its ability to meet WPDES permit requirements.

Effluent Quality TSS: *Grade A*
This section reviews plant performance and its ability to meet WPDES permit requirements.

Effluent Quality Ammonia: *Grade A*
This section reviews plant performance and its ability to meet WPDES permit requirements.

Effluent Quality Phosphorus: *Grade A*
This section reviews plant performance and its ability to meet WPDES permit requirements.

Biosolids Quality and Management: *Grade A*
This section looks at biosolids use/disposal, land application sites, biosolids pollutants, pathogen control, vector attraction reduction, and biosolids storage.

Staffing and Preventative Maintenance: *Grade A*
This section looks at adequate staffing, recordkeeping, presence of a documented and implemented preventative maintenance program, as well as a detailed operation and maintenance manual.

Operator-In-Charge Certification and Education: *Grade A*
Verification is required to insure that the Operator-In-Charge is certified by the Department of Natural Resources *(NR 114)* in all subclasses required for the Racine Wastewater Treatment Plant. The Operator-In-Charge must be certified at the appropriate level to operate this plant. It must

also be stipulated that the Operator-In-Charge is maintaining certification by earning the required continuing education credits.

Financial Management: *Grade A*
Are User Charges or other revenues sufficient to cover O & M expenses? When was the User Charge System or other revenue sources last reviewed or revised? Is there a segregated Equipment Replacement Fund? What are the additions or subtractions to the fund? Future planning?

- Energy Efficiency and Use
- Electricity Consumption
- Natural Gas Consumption
- Energy Related Process and Equipment
- Energy Study
- Lift Stations
- Treatment Plant
- Biogas Generation

Sanitary Sewer Collection System: *Grade A*
Does the Utility have a Capacity, Management, Operation and Maintenance (CMOM) requirement in our WPDES permit? Is there a documented CMOM program? The report lists maintenance activities and amount maintained. These activities include:

- Sewer cleaning
- Flow monitoring
- Televising
- Lift station O & M
- Manhole Inspection and Rehabilitations
- The report also looks at performance indicators such as:
- Number of sewer pipe failures
- Basement backup occurrences
- Lift station failures
- Complaints
- Sanitary sewer overflows
- Peaking factor ratios

The collection system grade is highly influenced by the intensity of rainfall events. Many sewer system overflows (SSO) in the past were the result of high intensity rain events which exceeded collection system capacity.

The Utility has constructed underground storage basins at Grove Avenue, Ohio Street and Mt. Pleasant Street in the past decade. Construction of a 2.4 MG holding tank by lift station #2 was completed in 2020. The Utility will continue its efforts to eliminate safety site overflows in the collection system. Studies and investigations will continue to better document events that occur to refine the engineered solution. The Utility will continue to utilize engineering consultants to televise its collection system and perform lining and replacements. The Villages of Mt. Pleasant, Sturtevant, and Caledonia are working to identify locations of I&I and address them. The Capital Improvement Program will be prioritized to address the worst problem areas first to minimize damage due to basement backups.

<u>Implementation Schedule:</u>

- Finalize the Storage Optimization Study.
- Televise Utility-Owned Interceptor Sewers.
- Televise the City-Owned Collection System.
- Clean the City Sanitary Sewer Collection System on a 3 year schedule.
- Begin project design and construction on additional storage basins.

CAPACITY, MANAGEMENT, OPERATIONS & MAINTENANCE PROGRAM AUDIT

Capacity, Management, Operations, and Maintenance Program Audit – CMOM

The USEPA and WDNR proposed CMOM regulations define CMOM Program Audits as follows:

USEPA: If a Sanitary Sewer Overflow (SSO) that discharges to Waters of the United States occurs from your collection system during the term of this permit, you must conduct an audit appropriate to the size of the system and the number of overflows. A report of the audit shall be submitted evaluating your CMOM and its compliance with this subsection, including its deficiencies and steps to respond to them.

WDNR: Annual Self-Auditing of your CMOM Program to ensure above components are being implemented, evaluated, and re-prioritized as needed.

The Racine Wastewater Utility annually prepares and tracks various programs for interceptor and collection system improvements, including system component replacement or upgrades. Goals are set for long-term and short-term projects with an assessment made at year end to determine the Utility's performance in reaching the goals that are set. The Utility's annual capital improvement plan, as well as preventive maintenance programs, is included in defining the annual goals.

SANITARY SEWER OVERFLOWS: The Utility experienced 20 overflows in 2020.

Date	Location	Volume (Gallons)	Date	Location	Volume (Gallons)
5/17/2020	Lift Station #6	3,714	7/9/2020	Lift Station #9	3,168
5/17/2020	Lift Station #9	12,870	7/9/2020	Safety Site #1	80,400
5/17/2020	Safety Site #2	625,860	7/9/2020	Safety Site #2	245,700
5/17/2020	Safety Site #3	38,412	7/9/2020	Safety Site #3	27,742
5/17/2020	Safety Site #5	76,445	7/9/2020	Safety Site #6	1,601
5/17/2020	Safety Site #6	1,463,974	8/10/2020	Lift Station #9	13,440
5/17/2020	Safety Site #8	768,138	8/10/2020	Safety Site #2	403,540
5/17/2020	Safety Site #9	66,911	8/10/2020	Safety Site #3	2,836
5/17/2020	Safety Site #10	126,523	8/10/2020	Safety Site #8	282,225
5/17/2020	Safety Site #11	793,456	8/10/2020	Safety Site #9	39,486

BASEMENT BACKUPS

Number of Backups by Type (Owner or Utility responsibility)

The Utility responded to 172 calls in 2020. Two of the calls were due to sewer main plugs, 21 were due to possible nearby surcharged sewer main, and 149 calls were lateral problems and the homeowner's responsibility.

Utility Response

The Utility's response is to react immediately to the call, evaluate the situation, and then rectify the problem as quickly as possible.

MAINTENANCE- Performed by the Racine Wastewater Utility

Sanitary Sewers Cleaning Quantity

362,743.0 linear feet (26.98 % of the system)

Root Cutting Quantity

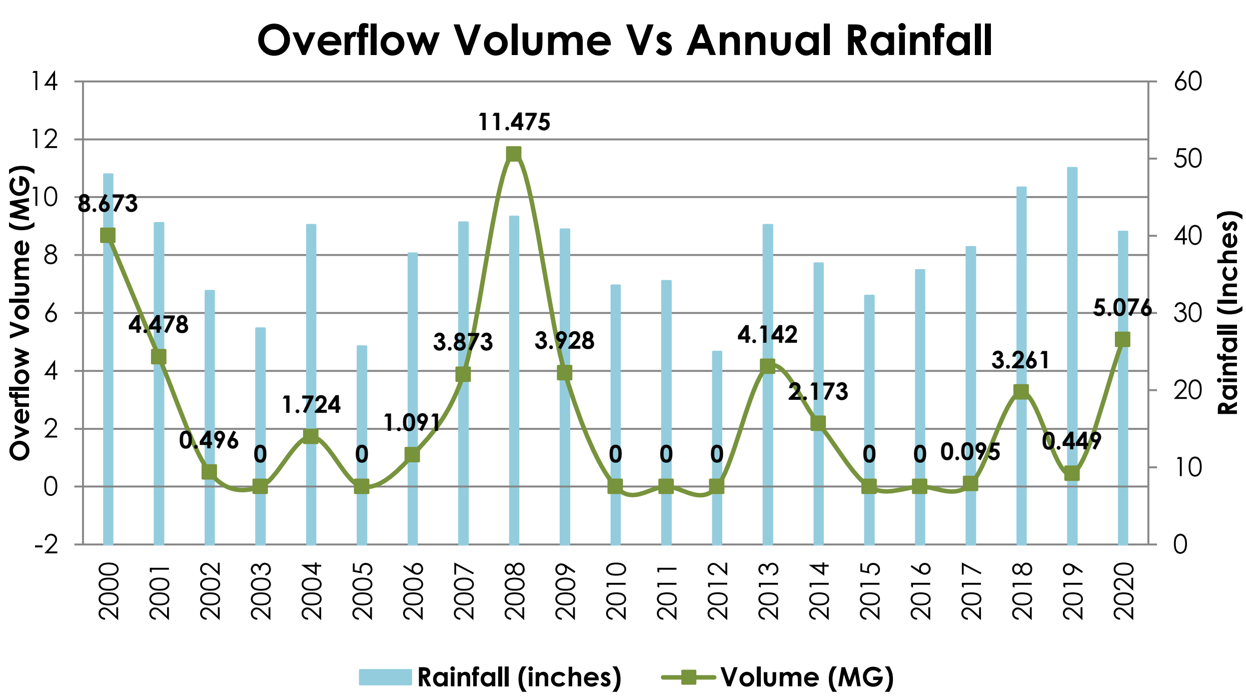
53,827.0 linear feet (4.00 % of the system)

Manhole Inspections:

675 (13.09% of the system)

The Wisconsin Department of Natural Resources requires the completion of an annual CMAR as part of the Utility's WPDES permit. CMOM program elements are addressed in the CMAR reporting to the WDNR.

Year	Number of Overflows	Total Wet Weather Events	Quantity (MG)	Annual Rainfall (inches)
2000	20	6	8.673	47.95
2001	20	5	4.478	41.66
2002	1	1	0.496	32.87
2003	0	0	0	27.99
2004	9	4	1.724	41.39
2005	0	0	0	25.68
2006	8	3	1.091	37.73
2007	13	2	3.873	41.72
2008	16	3	11.475	42.49
2009	12	2	3.928	40.83
2010	0	0	0	33.55
2011	0	0	0	34.16
2012	0	0	0	24.96
2013	7	1	4.142	41.42
2014	6	1	2.173	36.41
2015	0	0	0	32.22
2016	0	0	0	35.55
2017	2	1	0.095	38.54
2018	13	2	3.261	46.27
2019	7	1	0.449	48.78
2020	**20**	**3**	**5.076**	**40.52**



In the event of an overflow during the course of the year, the CMOM program audit is revised to address issues related to the overflow and activities being undertaken. All activities that are being implemented are documented in the audit and results assessed as to the elimination of the causes of overflows.

COMMUNICATIONS

The USEPA and WDNR proposed CMOM regulations define communications as follows:

USEPA: The permittee should communicate on a regular basis with interested parties on the implementation and performance of its CMOM program. The communication system should allow interested parties to provide input to the permittee as the CMOM program is developed and implemented.

WDNR: Not addressed.

The Racine Wastewater Utility provides wastewater treatment for eight satellite communities as shown below:

1. City of Racine
2. Village of Mt. Pleasant
3. Village of Caledonia
4. Village of Sturtevant
5. Village of Elmwood Park
6. Village of North Bay
7. Village of Wind Point
8. Town of Somers KR Utility District

The Racine Wastewater Utility, the City of Racine and above listed satellite communities, with the exception of the Town of Somers KR Utility District, North Bay and Elmwood Park, established the Racine Area Intergovernmental Sanitary Sewer Service, Revenue Sharing, Cooperation, and Settlement Agreement in 2002. This agreement is in affect for 50 years. The Utility communicates on a regular basis with these communities in regards to system capacity as well as infiltration and inflow reduction. In 2009, a Technical Advisory Committee made up of the contributing communities met and formulated plans to address system deficiencies.

MONTHLY COMMISSION MEETINGS

The Racine Wastewater Utility is governed by an eleven person Commission. Representatives include the Racine Mayor, six representatives appointed by the Racine Mayor and confirmed by the Racine Common Council, two representatives from Mt. Pleasant, one representative from Caledonia, and one from the outlying community with the largest amount of allocated treatment capacity other than Racine, Mt. Pleasant or Caledonia.

The Commission meets on a monthly basis to decide administrative issues related to finance, personnel, operations, SSO reduction and elimination, interceptor system improvements, and other administrative issues. In addition to the Utility Commissioners, the Wastewater Utility General Manager, Chief of Operations, Superintendent, and Department Supervisors typically attend the Commission meetings. The Commission meetings are open to the public and local newspapers routinely attend. Any SSO events or sewer capacity issues are presented and discussed at the Commission meeting.

SSO REPORTING

Sanitary sewer overflows that enter the storm sewer system or open water are included in a report that is transmitted to the WDNR conforming to the Racine Wastewater Utility's WPDES permit. Overflows are reported to all parties in the Utility chain of communication, WDNR, and affected stakeholders. The Field Services Director is responsible for the verbal notification of the WDNR within 24 hours of an overflow event A detailed written response is also prepared by the Field Services Director for submittal to the WDNR within five days of the event with review by the Superintendent, Chief of Operations, and General Manager. Affected Water Utility owners are notified of the SSOs, along with local media outlets. The SSO event is also discussed at the monthly Commission meeting.

ANNUAL CMOM PROGRAM AUDIT

CMOM program elements will also be addressed on an annual basis as part of the Utility's CMAR reporting to the WDNR. The CMAR and CMOM Program Audit are included in the Utility's Annual Report which is provided to all Commissioners, agency communities, and are available for review to the general public and interested parties.

PLANT PROCESS & EQUIPMENT

Description of Plant Process & Equipment

The Racine Wastewater Treatment Plant is a conventional activated sludge plant with chemical phosphorus precipitation, anaerobic sludge digestion, belt filter press dewatering and ultraviolet disinfection of effluent.

Flow Equalization Basins: The Racine Wastewater Treatment Plant flow equalization basins are designed to reduce flow to the treatment plant during a period of high influent flow. Flows exceeding 108 MGD (million gallons per day) will be directed to the flow equalization basins. Wastewater stored in the flow equalization basins is reintroduced into the normal wastewater stream as plant capacity is available. Influent wastewater which is directed to the basins can be chlorinated using sodium hypochlorite. This will provide odor control for stored wastewater and disinfection for any amount that overflows the basins. The effluent from the basins is dechlorinated before blending with the plant effluent.

Sodium bisulfite is used for dechlorination at the wastewater treatment facility. Liquid sodium bisulfite is stored in one tank located in the preliminary treatment building. Bisulfite is transferred to the point of application by chemical metering pumps and enters the equalization basins' effluent through diffusers. Dechlorination of equalization basin effluent is provided at the dechlorination structure located downstream from the two equalization basins. For dechlorination of equalization basin effluent, the bisulfite pump is flow paced.

Prior to entering the equalization basins, wastewater is screened by mechanically cleaned bar screens. Wastewater in the basins is returned to the treatment flow scheme by gravity and by pumping. It can be returned to the headworks for full treatment, the aeration basins for secondary treatment, or to the digesters for sludge handling. Both equalization basins are 200 feet in diameter and have a storage capacity of 2.7 million gallons each.

Flow: The wastewater flow enters the headworks of the plant through 84" and 72" diameter lines. The design average flow is 36 MGD. From the headworks junction chamber, two 54" diameter pipes direct the flow into the preliminary treatment building.

Mechanically Cleaned Bar Screens and Washing Presses: The preliminary treatment building contains four (4) bar screens, each with a rated maximum capacity of 35.0 MGD. The spacing between the individual bars in one-half inch. Course sewage material is captured and removed from the flow to prevent plugging of pumps and unnecessary wear on downstream equipment. Each bar screen has a washing press to reduce organic content, moisture content and volume of screenings.

Vortex Grit Removal Equipment: Two vortex grit removal units rated at 70 MGD each remove coarse abrasive inorganic material continuously from the screened wastewater flow.

Grit Concentrators: Two grit concentrators remove water and organics from the material pumped to them from the vortex grit removal system.

Primary Influent Channel Blowers: Two Hoffman blowers (100 HP) with a capacity of 2500 CFM are used to keep solids in suspension until the flow reaches the primary clarifiers. This aeration also helps with odor control.

Chemical Feed and Storage for Phosphorus Removal: Phosphorus must be removed from wastewater to eliminate this major source of the primary nutrient required for the growth of algae in Lake Michigan. Three 12,000 gallon fiberglass tanks store ferric chloride which is used to form insoluble ferric phosphates with the soluble phosphates in the raw wastewater. Ferric chloride can be fed before primary clarifiers, after primary clarifiers, and prior to final clarifiers.

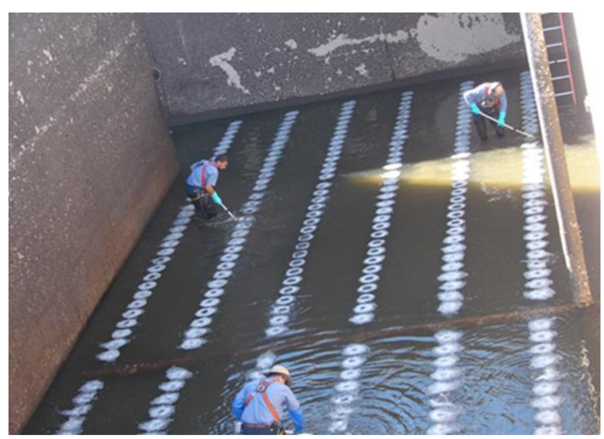
Primary Clarifiers: There are a total of 12 primary clarifiers. Six clarifiers are considered west bank and the other six are the east bank clarifiers. Four west bank clarifiers are 137.5 feet long by 34.5 feet wide by 10.5 feet deep. The other two west bank clarifiers are 122 feet long by 28 feet wide by 10.5 feet deep. The east bank of primary clarifiers has four clarifiers that are 120 feet long by 38 feet wide by 8 feet deep. The other two east bank clarifiers are 128 feet long by 30 feet wide by 10.5 feet deep. Total primary clarifier capacity is 3.7 million gallons. Average detention time in the primary clarifiers is 3.6 hours at 25 MGD. Mechanical scrapers push sludge to pits for removal by pumping to the digesters. These same scrapers also push the scum to troughs that enable the scum to be pumped to the digesters.

Anaerobic Digesters: Racine Wastewater utilizes four (4) one-million gallon capacity digesters. Sludge from the primary clarifiers and thickened waste activated sludge (TWAS) is pumped to the digesters. Mechanical mixers keep the organic material in contact with the anaerobic organisms. Heat exchangers provide heat to ensure that temperature is maintained at 95 degrees Fahrenheit. Through anaerobic bacterial action, sludge is decomposed and converted into a more stable product. Methane gas (biogas) is produced as a by-product of this decomposition. Biogas is used as a fuel supply for large internal combustion engines and boilers. Approximately 200,000 cubic feet of biogas is produced daily.

Holding Tank for Belt Filter Press Operation: One (1) fixed cover tank with a volume of 552,000 gallons is used as part of the sludge dewatering operation. After primary digestion, sludge is transferred to the holding tank.

Gas Storage Sphere: The gas produced in the digesters as a by-product of the digestion process consists mainly of methane and carbon dioxide. It is used as fuel for the engine driven blowers and in the boilers for building and sludge heating. Since gas production and usage is not uniform in rate, a gas storage sphere is used during periods when demand is greater than production. The sphere is 40 ft. in diameter, providing storage at 50 psi for 200,000 cubic feet of digester gas. If gas production exceeds capacity, the gas is routed and burned by a safety device.

Aeration Tanks: The aeration tanks are two (2) pass tanks, each pass measuring 168 feet by 30 feet by 15 feet. The total volume of five (5) aeration tanks equals 5.65 million gallons. The aeration system can be operated in several modes. Currently the conventional activated sludge process is being used. It consists mainly of microbiological organisms (bugs) and organic material (wastewater). The contents are mixed by the introduction of air through 10,000 (9 inch diameter) fine bubble diffuser discs located along the length of each tank. The air also provides a supply of oxygen for the microorganisms which feed



and multiply on organic materials contained in the wastewater. The resulting mixed liquor is transferred from the aeration tanks to the final clarifier tanks where settling occurs followed by return pumping microorganisms to the aeration tanks or waste pumping of excess organisms.

Aeration Control Buildings: These buildings house the controls for the pumps and equipment involved with the aeration system.

Air Blowers:

Three (3) Engine Driven Blowers:

#2 Engine 380 HP, Blower Capacity 9,600 CFM at 8.2 psig

#3 Engine 675 HP, Blower Capacity 15,000 CFM at 8.5 psig

#5 Engine 440 HP, Blower Capacity 9,600 CFM at 8.2 psig

Two (2) Motor Driven Blowers:

#1 Motor HP 500, Blower Capacity 11,000 CFM at 8.5 psig

#4 Motor HP 300, Blower Capacity 6,900 CFM at 8.5 psig

The blowers provide air for the aeration tanks. All air for the low-pressure system is filtered by a combination electrostatic and mechanical air filter. Accessory equipment includes silencers on air intake and discharge for each blower, and combination silencers and heat recovery units on the engine exhausts. Heat is recovered from engines by circulating the engine jacket water through heat exchangers in the building and sludge heating system. The engines can be operated on biogas produced by the treatment plant or natural gas.

Final Clarifiers: There are nine (9) final clarifiers. Three 85 in diameter, three 93 feet in diameter and three 90 feet in diameter. Total volume equals 5,930,000 gallons. Detention time is 5.1 hours at 25 MGD. The activated sludge produced in the aeration tanks settles in the final tanks. The settled sludge is drawn through rotating collector tubes and the connected piping system by pumps, which return the major portion to the aeration tanks. Because a balance must be maintained between the amount of microorganisms held in the secondary treatment plant and the food supply in the primary effluent, the excess waste activated sludge (WAS) is pumped to the primary tanks or gravity belt thickeners. The clarified water or secondary plant effluent is conveyed to the U.V. system for disinfection.

Ultraviolet Light (U.V.) and Hypochlorite Disinfection: Two U.V. systems are provided at the Racine facility. Ultraviolet light is used to provide disinfection of final clarifier effluent and a sodium hypochlorite system is used to provide disinfection of wastewater delivered to the flow equalization basins.

The sodium hypochlorite system is used to disinfect the flow equalization tanks. Chlorination is provided for odor control of wastewater temporarily stored in the equalization basins and for disinfection of wastewater which may overflow the equalization basins. Chlorination is provided at the equalization basin bar screen effluent channel and at the lift station force main discharge structure. Sodium hypochlorite application to the return activated sludge (RAS) system is also provided. Sodium hypochlorite is stored in two (2) tanks located in the liquid chlorine building. Liquid sodium hypochlorite solution is delivered to the various points of application by chemical feed pumps located in the liquid chlorine building. The hypochlorite feed pumps are flow paced.

Ninety-Six and Seventy-Two Inch Diameter Outfalls: Two outfall lines (72" and 96") extend 500 feet out into the lake. There are three 36" openings at the end of the 72" pipe and three (3) 48" openings at the end of the 96" pipe for discharge purposes.

Belt Filter Presses: Six - two meter presses. The continuous stage belt filter presses consists of two polyester cloth belt sets one above another that maneuver through a series of pressure rollers. Sludge is conditioned with a liquid polymer and is fed onto a gravity drainage section of the belts. Following gravity drainage, the sludge is distributed on the lower pressure belt. After an additional small section of gravity drainage, the concentrated sludge comes in contact with additional small section of gravity drainage; the concentrated sludge comes in contact with the upper belt. The two (2) belts form a wedge which gradually forces removal of water. The water removed (filtrate) is collected in drainage pans and combined with gravity drainage water and recycled back to the head of the plant. Pressure is increased as the belts pass through rollers of decreasing size. The final three rollers form an S-shaped configuration which generates a shear force and creates additional water drainage. Dewatered sludge is hauled by truck to ultimate disposal. The filter belts are continuously washed with water at high pressure.

Gravity Belt Thickeners: The two gravity belt thickeners are used to dewater waste activated sludge (WAS) from the secondary activated sludge treatment process. Polymer is added to the WAS to help the dewatering process.

Final Effluent Systems: Three final effluent pumps are located in the aeration pipe gallery. Final effluent is pumped to the yard hydrants and street hydrants. There are also two cooling water pumps installed in the aeration pipe gallery to pump screened final effluent to the engine jacket water cooling heat exchangers.

One F.E. Pump: 200 gmp at 243 ft. head
One Cooling Water Pump: 550 gpm at 55 ft. head
One Auxiliary Engine: Use at time of power failure
Pump: 550 gpm at 50 ft. head

Tank Drainage System: The tank drainage system consists of the drain system for all the treatment units and the bypassing arrangements for these units. Two tank drainage wells and five drainage pumps are provided.

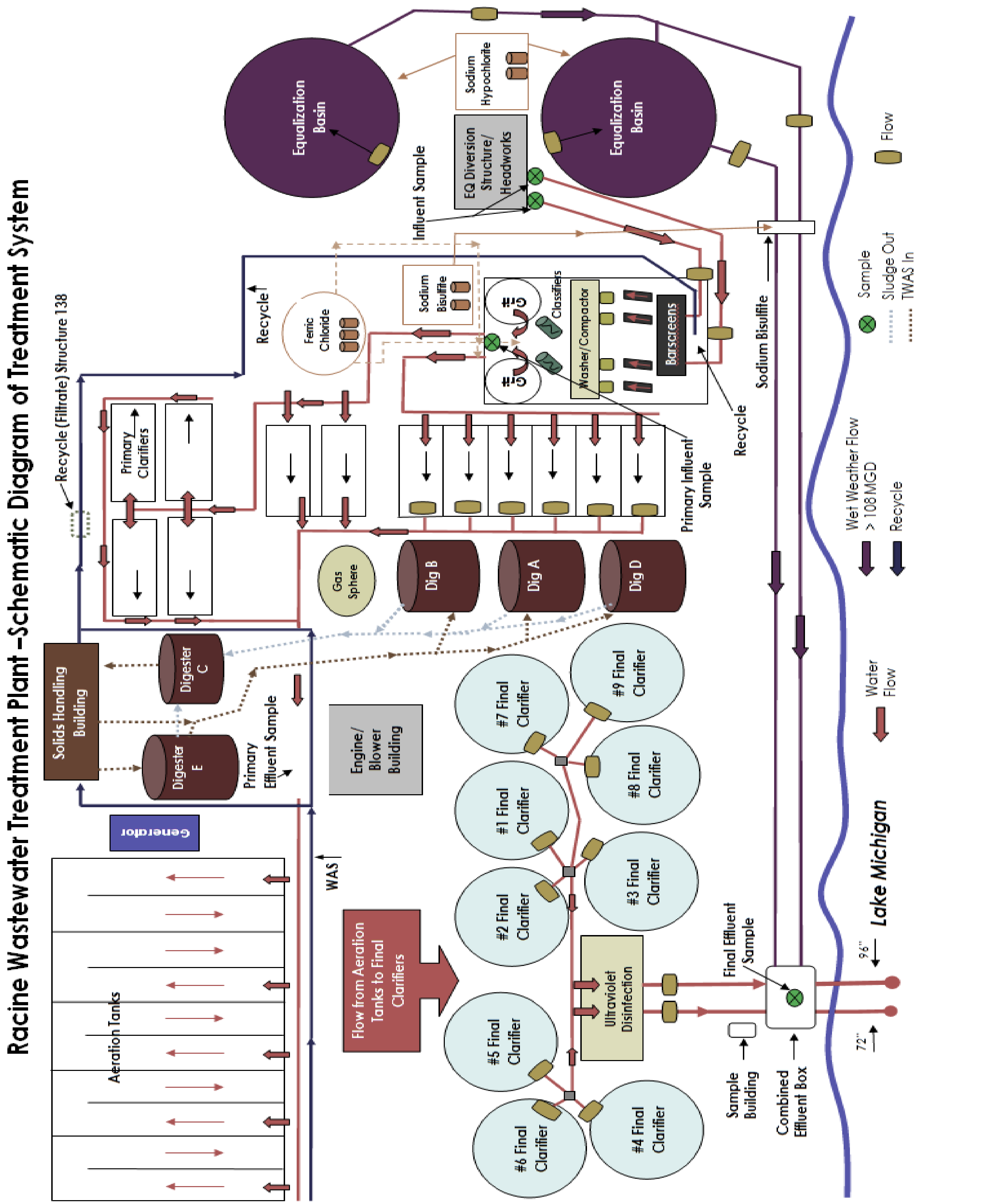
Five Tank Drainage Pumps: 700 gmp at 30 ft. TDH

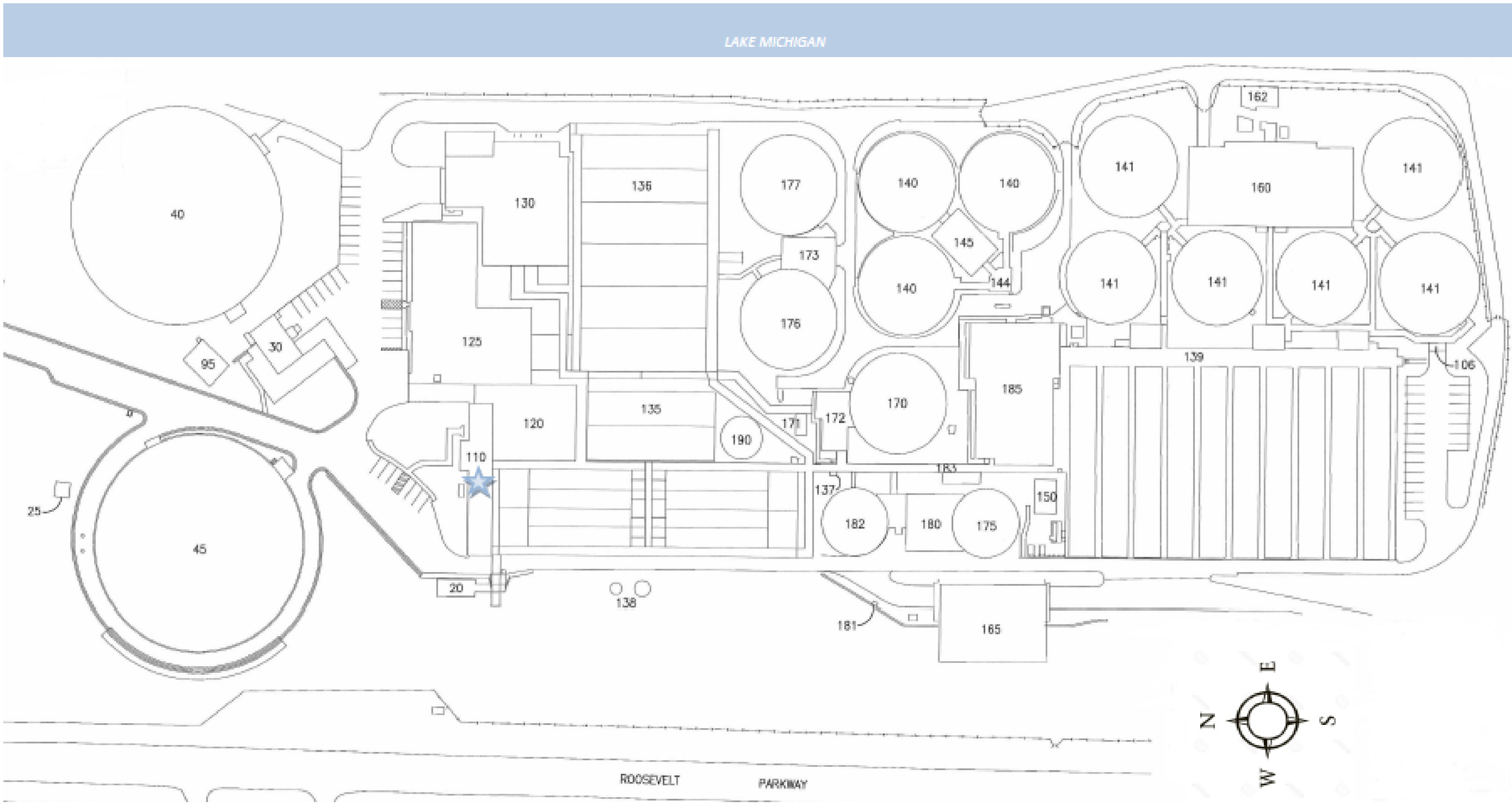
Pipe Gallery: Connection between primary plant and secondary plant. All necessary systems run through the pipe gallery.

Plant Water Systems: This system provides a physical break between the incoming city water and the plant water distribution system.

Heating, Ventilation and Air Conditioning: Hot water for space heating is provided by one continuous loop system. The system is provided with four multiple pass, horizontal fire tube boilers with five square feet of heating surface per rated boiler horsepower. Two of the four units can be fired by biogas or natural gas. Air circulation systems have been installed for space heating and cooling, odor control and removal of dangerous gases. At critical areas or areas where air handling unites are not installed, unit heaters are provided to heat the space, and exhaust fans with separate air intake louvers provide ventilation.

Flow Monitoring and Schematic Diagram



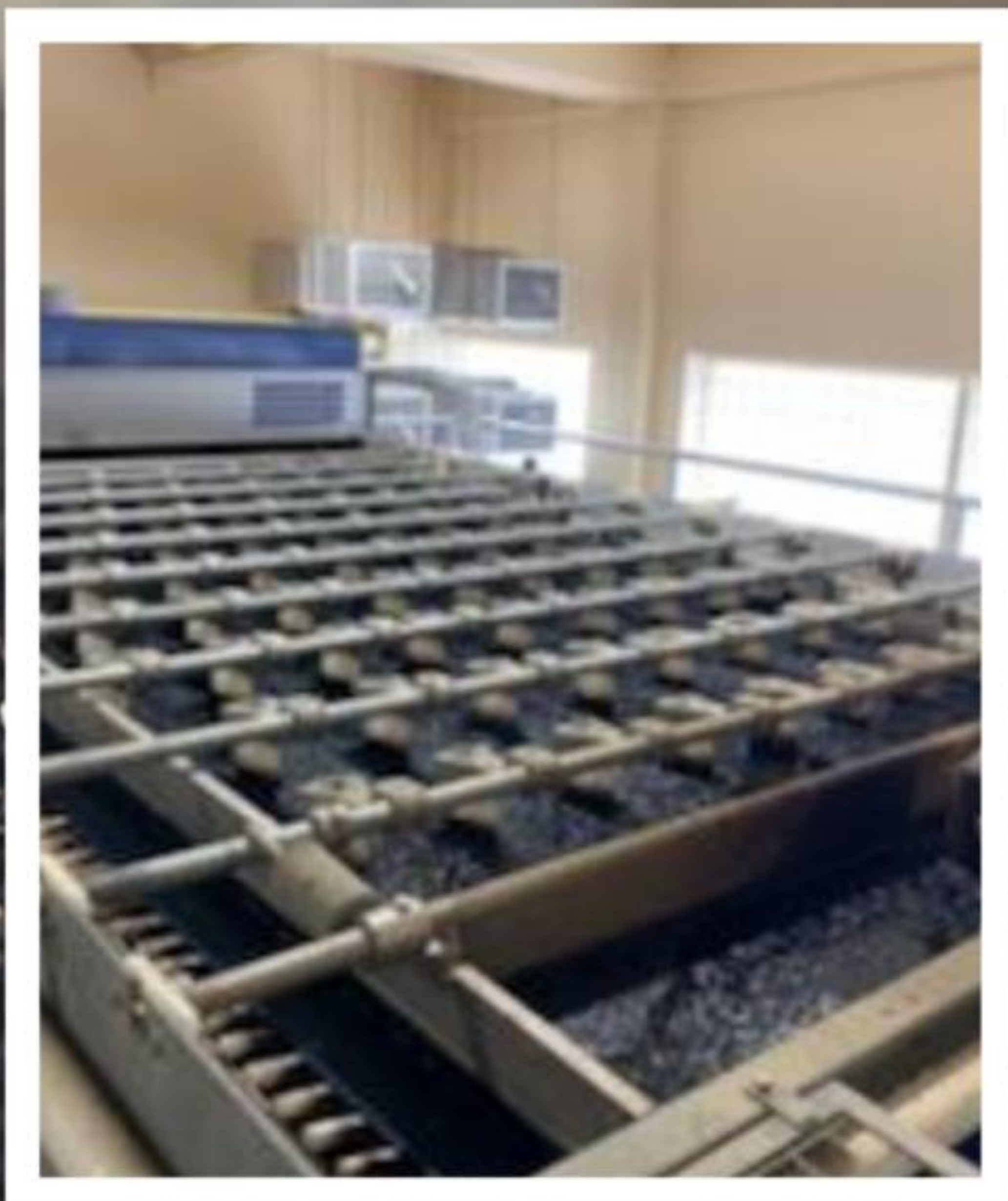


STRUCTURE CHART

20—DIVERSION STRUCTURE
25—JUNCTION STRUCTURE
30—EQ SCREENING BUILDING
40—EQUALIZATION BASIN NO. 1
45—EQUALIZATION BASIN NO. 2
106—VACTOR DUMP STATION
110— ★ ADMINISTRATION BUILDING
120—CHEMICAL WING
125—PRETREATMENT BUILDING (REMOVALS)
125—LAB/OFFICE (NEW)
130—PRELIMINARY TREATMENT BUILDING
135—PRIMARY CLARIFIERS (WEST BANK)
136—PRIMARY CLARIFIERS (EAST BANK)
137—PRIMARY CLARIFIER TUNNEL
138—WEST DRAIN PUMP STATION
139—AERATION BASIN/GALLERY
140—FINAL CLARIFIERS
141—MODIFICATIONS TO EXISTING FINAL CLARIFIERS
144—DISTRIBUTION BOX
145—RAS PUMP STATION
150—PLANT GENERATOR BUILDING
160—UV DISINFECTION
162—EFFLUENT JUNCTION BOX
165—SOLIDS PROCESSING BUILDING
170—DIGESTER "B"
171—ACCESS VAULT
172—DIGESTER CONTROL BUILDING NO. 1
173—DIGESTER CONTROL BUILDING NO. 2
175—DIGESTER "E"
176—DIGESTER "A"
177—DIGESTER "D"
180—DIGESTER CONTROL BUILDING NO. 3
181—WASTE GAS BURNER NO. 2
182—DIGESTER "C"
183—TUNNELS
185—MAIN EQUIPMENT BUILDING
190—GAS STORAGE SPHERE
250—GENERATOR BUILDING (OFF SITE)

Bio Management Program

- The Utility generated over 10.7 wet Ktons of biosolids in 2020
- Solids content of the biosolids averaged 20%
- Biosolids land applied to 659 acres of farmland

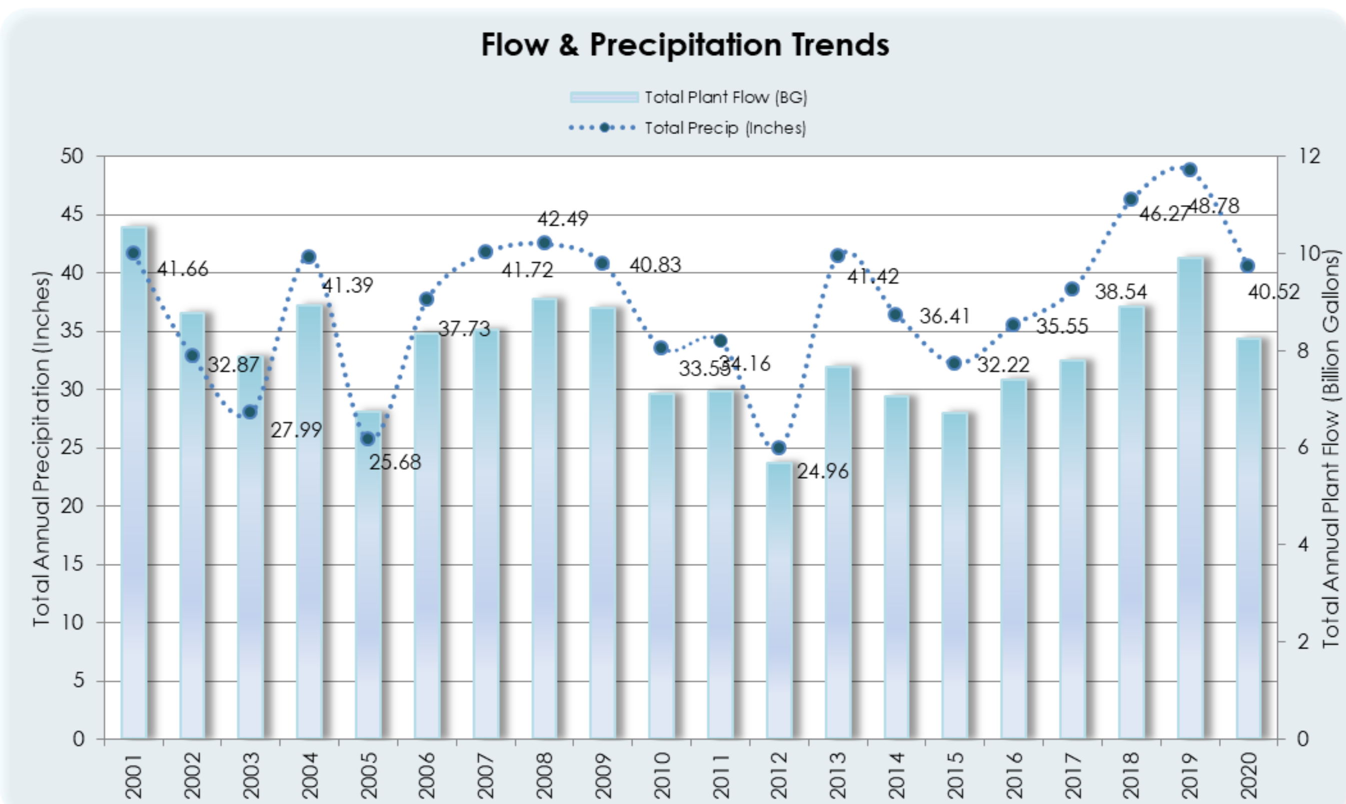


WASTEWATER OPERATIONS

FLOW & PRECIPITATION TRENDS

The graph below shows 20 years of rainfall and flow trends at the Racine Wastewater Plant. Rainfall can have an influence on peak events and increases in annual flow trends. However, economic factors and industrial water usage can also have an impact on baseline flows at the Wastewater Plant. In 2008, the Racine Water Utility stopped sending its daily sludge loadings to the plant, which resulted in increased treatment capacity at the plant and a decrease in annual plant flow. This trend can be seen on the graph as having some of the lowest annual flows in a 20 year period. The country has also suffered a severe recession in the past few years with a decrease in domestic use of wastewater and water from residential customers as well.

The decade from 2000 to 2010 is the wettest decade on record in the State of Wisconsin. It also contained unprecedented peak rain events in terms of inches per hour and inches per day. The summers of 1990 and 1993 were extremely wet in the Midwestern states. The Racine Wastewater Plant exceeded 10 BG (billion gallons) per year. These concerns, along with some peak rain events, caused the Utility to prepare a facilities plan in 1996 to ensure that the Wastewater Plant had adequate treatment capabilities to treat increased average day flow and peak day flow. Plant flow for 1997 and 1998, plant flow exceeded the peaks of 1990 and 1993, further reinforcing the need for more treatment capacity. The years of 2000 and 2001 continued to have flows over 10 BG/year. The Wastewater General Manager was forced to invoke a sewer moratorium for new construction until an agreement could be entered into with all of the local flow communities. A sewer agreement was signed in the spring of 2002 to address treatment capacity issues at the Wastewater Plant and to address known deficiencies in the collection system getting flows to the plant.



While the rainfall graph shows peaks and valleys in the decade of 2000 (wettest on record in the state), plant flows relaxed to under 9 BG/year (2006-2009) and most recently near 7 BG/year (2010-2016). Year 2012 was the worst drought in the Midwest in decades. The 2012 wastewater plant flows were measured at 5.7 BG/year. These flows are nearly half of the yearly flows experienced just 10 years earlier. In 2005, the Utility experienced a heavy rain event that led to an SSO to the Root River in west Racine. The enforcement branch of the DNR issued Racine a Notice of Violation and ordered that Racine install a storage basin to capture the quantity of rainfall that was discharged to the river in 2005. The resulting project is referred to as the Grove Avenue Storage Basin.

As a result of a 40 year storm that occurred in August of 2007 spreading over 6 inches of rain in a 36 hour period, the Utility was forced to study and address the concerns related to this event. Widespread surcharging occurred in the sewer system across the entire City as a result of this rainfall. Several homes experienced basement backups, even though SSO's were allowed in the collection system to relieve the greater than normal rainfall. A subset of the Wastewater Commission was formed called the TAC, or Technical Advisory Committee, to study and evaluate issues surrounding the 40 year rain event that occurred. A draft final report of its findings was submitted to the full Commission in October of 2010. Costs of Service Studies (COSS) were commissioned to evaluate the costs and how they would be applied to the local Sewer Service Recipient (SSR) Parties of the agreement.

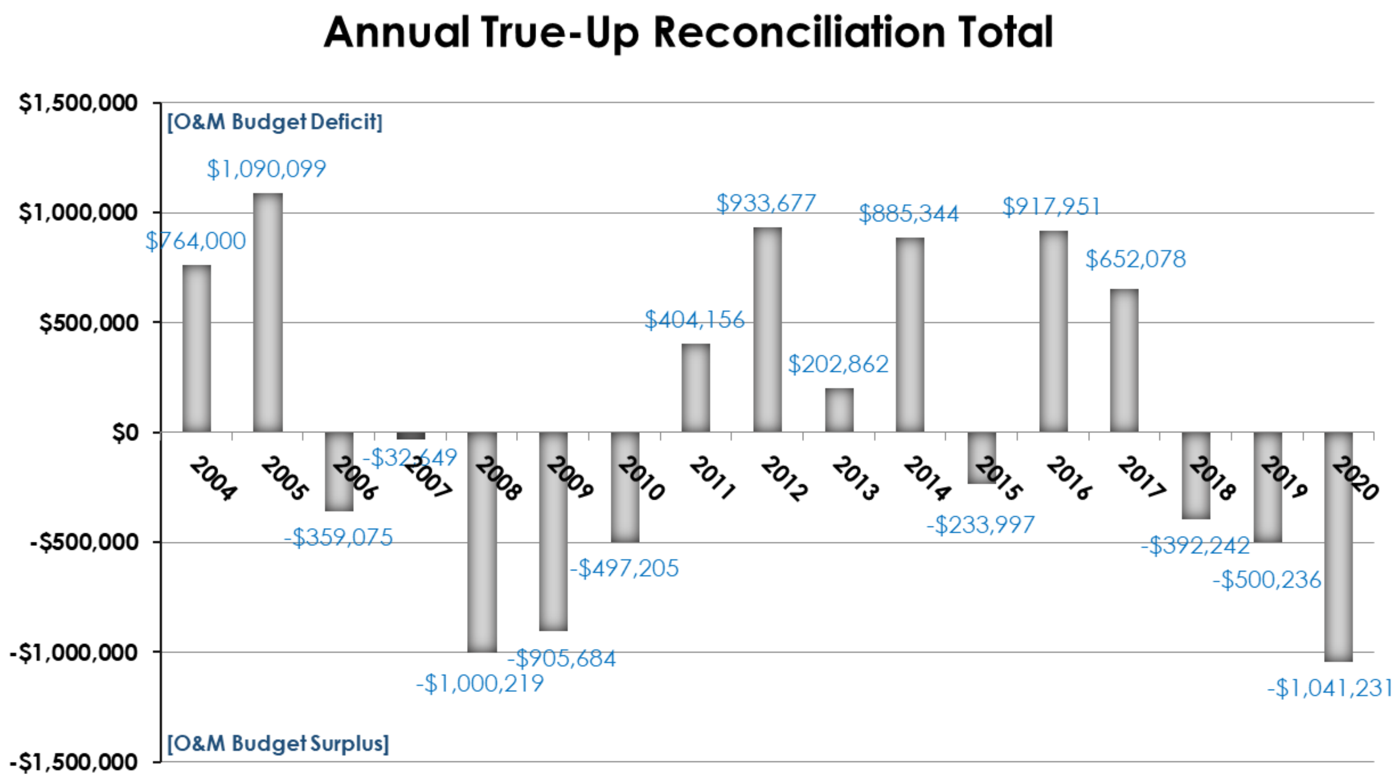
In May of 2014, the Racine area experienced an intense rain storm over a short amount of time. This storm produced a number of basement backups in specific areas of the City. These areas included Roosevelt and Kinzie, Spring Street near Dombrowski and Graham and areas in and around Horlick Field. The Utility installed a new interceptor sewer in Echo Lane and Kinzie Avenue east of Green Bay Road in 2016 to address some neighborhood flooding issues. A larger diameter interceptor sewer was installed in Spring Street upstream of Lift station No. 2 in 2017. In 2018, construction of a 2.4 million gallon attenuation basin was begun at Lift Station No. 2 to protect basements in the neighborhood from flooding during peak rainfall events. That project was substantially completed in 2019.

Historic trends are an important element in the planning for long range projects in the wastewater industry. This discussion serves to place historical perspective on the need for a sewer agreement and plant expansion that occurred in 2002 – 2005. Recent trends and economic conditions in the local area show roughly a 20% drop in wastewater flows as compared to the previous average over twenty years (say 7 BG/year vs. 9 BG/year).

Wastewater Flow Trends: Wastewater plant flow can be cyclical. The flow rates that have been used for budgeted flow over the past few years are very close to the six-year average of actual flow. The actual plant flow in 1998 thru 2001 was on average higher resulting in higher revenues than what was budgeted. This trend led to a concept called the True-up to be incorporated into the April 2002 Racine Area Intergovernmental Sanitary Sewer Service, Revenue Sharing, Cooperation and Settlement Agreement. The concept was that the Utility should no longer profit from abnormally high flows, due to wetter than normal years, and that any additional revenue should be put back into the rate formula to offset rate increases instead of building reserves within the utility. Conversely if the flows went below normal and a deficit of flow was realized, all parties to the agreement should contribute additional money through the rates to offset the deficit. This concept was negotiated into the contract with all parties in agreement. The Utility is made whole by making sure that it can stay in business and positive returns on investments are returned to the ratepayer or customers of the Utility.

Recent History: Over the five years, starting in 2004, the Utility experienced a wetter period and higher flows resulting in an excess of revenues over budgeted expectations, which caused negative true-up and decreased revenue needs to the rate models from 2006 through 2010.

Revenues from 2011 to 2014 were lower because of lower than expected flows reaching the plant. The rates for 2019 were influenced by a surplus of $500,235 from the 2017 fiscal year. Rates did not change significantly as $400,000 was placed in a Rate Stabilization fund that was approved by the Commission. The second half of 2018 was extremely wet resulting in increased revenues in 2018. The wettest year for rainfall in 40 years occurred in 2019. The excess revenues over expenditures of about $1.04 million in 2018 were factored into wastewater rates in for year 2020. The true up serves as a self-correcting financial tool that over a period of time will insure that the ratepayer is treated fairly and that the Utility will not incur huge losses or gains that could impact its financial viability.



Flow & Precipitation 2020

	JANUARY			FEBRUARY			MARCH			APRIL			MAY			JUNE		
DATE	PREC.	DAILY FLOW	PEAK FLOW	PREC.	DAILY FLOW	PEAK FLOW	PREC.	DAILY FLOW	PEAK FLOW	PREC.	DAILY FLOW	PEAK FLOW	PREC.	DAILY FLOW	PEAK FLOW	PREC.	DAILY FLOW	PEAK FLOW
1	0.00	31.27	38.40	T	22.15	27.90	0.00	17.32	21.40	T	33.18	38.40	T	32.70	85.20	0.00	21.09	32.20
2	0.00	29.79	33.50	0.00	27.55	21.80	0.00	18.86	21.00	0.00	30.25	35.70	0.00	43.46	54.80	0.00	21.64	23.70
3	0.00	28.54	26.30	0.00	34.05	37.60	0.00	18.91	21.90	T	28.45	28.60	0.00	39.41	42.10	0.27	24.21	28.30
4	0.00	26.26	30.60	0.00	33.99	38.00	0.04	18.68	22.20	0.12	22.27	29.10	0.00	37.04	45.30	0.00	21.96	23.90
5	0.00	24.65	29.40	0.00	31.72	33.80	0.00	18.80	22.80	0.00	21.82	26.70	0.00	33.34	39.10	0.00	20.08	23.60
6	0.00	24.42	27.40	0.00	26.66	31.10	T	18.09	21.90	0.00	22.85	25.50	0.00	28.07	31.40	0.00	19.46	22.30
7	0.00	23.23	26.20	0.00	24.95	27.80	0.00	18.06	21.80	0.04	21.07	24.80	0.00	24.87	29.00	0.00	18.05	22.20
8	0.00	21.46	24.00	0.00	21.43	26.30	0.00	16.74	21.90	0.00	22.53	25.90	0.00	25.14	30.10	0.00	18.81	21.70
9	0.00	21.27	23.60	0.00	22.66	25.30	0.00	23.57	50.00	0.23	21.44	24.50	0.00	22.68	27.20	0.00	19.43	23.10
10	0.04	21.31	24.10	0.23	22.04	25.10	1.01	44.46	57.50	0.00	19.83	24.20	0.01	28.28	42.10	0.34	20.44	25.80
11	0.79	39.69	49.30	0.00	21.25	22.80	0.02	31.06	36.90	0.00	20.22	22.60	0.42	25.14	30.70	0.30	21.64	26.30
12	0.35	32.33	37.70	0.00	19.66	22.50	0.02	27.48	29.40	0.27	20.88	25.00	0.00	24.73	26.90	T	18.14	21.00
13	0.00	29.08	33.70	0.13	19.25	22.40	0.05	24.20	27.90	0.30	25.12	27.50	0.00	21.51	24.70	0.00	18.36	20.20
14	0.00	29.97	32.30	T	18.71	20.60	0.00	22.44	25.60	0.00	20.69	23.20	0.46	28.53	39.60	0.00	16.75	21.00
15	0.00	28.53	32.40	0.00	18.33	22.10	T	21.05	26.00	0.00	20.52	22.10	0.73	43.10	59.40	0.00	17.96	19.30
16	0.05	26.81	33.10	0.00	17.71	21.70	0.00	21.03	23.80	0.00	18.99	21.20	0.02	33.09	36.80	0.00	16.50	21.50
17	0.00	23.19	26.80	0.00	18.15	22.00	T	19.84	23.60	0.00	18.71	22.00	1.18	121.75	99.50	0.00	16.84	19.20
18	0.73	25.49	30.20	0.18	20.91	22.70	0.00	18.76	22.00	0.02	17.64	20.40	2.69	129.88	93.70	0.00	16.05	18.00
19	0.03	22.53	27.70	0.00	19.16	21.80	0.00	23.07	35.90	0.00	17.24	20.40	0.29	91.55	93.00	0.00	15.86	18.20
20	0.00	21.42	24.10	0.00	18.37	20.70	0.92	45.05	58.70	0.00	17.15	20.30	0.10	70.37	82.70	0.00	15.39	19.90
21	0.00	20.06	24.80	0.00	17.51	19.80	0.00	33.45	39.20	0.09	16.83	19.30	0.00	56.65	66.40	0.11	15.67	19.60
22	0.00	20.02	22.40	0.00	18.47	19.90	0.00	28.40	32.30	0.00	16.73	19.70	T	40.62	50.00	0.00	16.53	20.30
23	0.09	19.41	22.10	0.00	18.27	22.20	0.08	27.70	30.90	0.19	19.24	26.70	T	35.99	40.70	0.90	21.12	26.90
24	0.27	27.66	40.90	0.00	19.44	22.00	0.00	25.42	28.50	0.30	18.81	23.80	0.05	32.58	36.40	0.01	17.40	20.10
25	0.28	39.92	37.50	0.00	19.65	21.90	0.00	24.29	25.90	0.00	17.49	20.60	0.00	30.36	35.30	T	17.17	21.00
26	0.20	30.53	35.00	0.01	18.39	21.30	0.00	21.22	24.90	0.02	16.93	20.40	T	27.95	31.90	0.00	18.91	32.90
27	0.00	29.32	32.50	0.00	18.91	22.80	0.03	21.84	94.40	0.00	17.30	28.00	T	26.90	29.90	0.73	20.64	30.50
28	0.00	26.38	29.80	0.00	17.70	20.00	1.87	78.17	24.10	0.30	28.19	74.80	0.00	24.58	27.90	0.00	17.35	21.80
29	T	25.81	27.70	0.00	17.80	21.70	0.33	62.61	83.10	1.33	98.75	94.10	0.25	26.54	29.60	0.00	20.78	35.50
30	0.00	22.83	26.60				0.02	43.65	50.60	1.51	115.10	95.30	0.00	24.49	27.00	0.43	25.84	36.80
31	T	23.39	24.90				0.00	34.13	38.00				0.00	22.76	26.50			
TOTAL	2.83	816.57		0.55	624.84		4.39	868.35		4.72	806.22		6.20	1254.06		3.09	570.07	
AVG	0.10	26.34	30.16	0.02	21.55	24.33	0.16	28.01	34.33	0.17	26.87	31.03	0.24	40.45	45.64	0.11	19.00	23.89
MAX	0.79	39.92	49.30	0.23	34.05	38.00	1.87	78.17	94.40	1.51	115.10	95.30	2.69	129.88	99.50	0.90	25.84	36.80
MIN	0.00	19.41	22.10	0.00	17.51	19.80	0.00	16.74	21.00	0.00	16.73	19.30	0.00	21.51	24.70	0.00	15.39	18.00

Flow & Precipitation 2020 - Continued

	JULY			AUGUST			SEPTEMBER			OCTOBER			NOVEMBER			DECEMBER		
DATE	PREC.	DAILY FLOW	PEAK FLOW	PREC.	DAILY FLOW	PEAK FLOW	PREC.	DAILY FLOW	PEAK FLOW	PREC.	DAILY FLOW	PEAK FLOW	PREC.	DAILY FLOW	PEAK FLOW	PREC.	DAILY FLOW	PEAK FLOW
1	0.00	19.38	23.10	0.00	15.87	18.40	0.00	14.86	18.90	0.01	14.05	17.80	0.00	13.67	16.60	0.00	16.72	18.80
2	0.00	19.49	21.30	0.00	18.90	34.90	0.12	14.07	16.60	0.16	13.83	16.70	0.00	13.70	16.50	0.00	15.37	18.20
3	0.00	16.93	20.70	1.01	32.09	39.70	0.00	14.10	16.40	0.00	14.02	17.10	0.00	13.90	15.90	0.00	15.40	18.10
4	0.00	17.31	21.60	0.00	23.99	26.50	0.00	12.74	15.00	0.06	13.38	17.20	0.00	13.38	16.00	0.00	14.76	16.90
5	0.00	15.80	20.10	0.00	20.38	24.00	0.00	12.37	15.80	0.00	12.69	16.00	0.00	12.67	15.20	0.00	14.46	17.20
6	0.00	17.27	19.10	0.00	17.99	21.00	0.05	12.21	16.10	0.00	13.33	16.30	0.00	13.09	15.50	0.00	14.13	17.90
7	0.00	16.67	19.20	0.00	17.31	21.70	0.02	12.38	16.40	0.00	13.79	16.10	0.00	12.23	16.40	0.00	14.26	17.60
8	0.12	17.07	19.60	0.00	16.53	19.50	0.79	26.08	41.50	0.00	13.02	15.40	0.00	12.80	16.10	T	14.00	17.30
9	0.01	25.34	80.20	0.00	17.18	25.00	0.94	25.03	24.20	0.00	12.87	15.10	0.00	12.47	15.00	0.00	13.56	16.30
10	2.82	96.22	95.70	0.35	44.11	95.60	0.14	21.12	28.70	0.00	12.49	15.30	0.47	13.55	22.90	0.00	13.67	16.10
11	T	40.36	52.30	2.74	61.58	94.70	0.05	18.00	21.40	0.00	11.87	15.00	0.00	15.57	21.00	0.00	15.47	28.60
12	0.00	29.69	35.80	0.00	39.92	46.20	0.18	20.81	28.50	0.00	12.74	16.20	T	13.63	15.60	0.77	51.90	65.00
13	0.00	27.57	35.60	0.00	29.88	38.10	0.18	19.44	22.30	0.15	12.72	15.00	0.00	13.31	15.30	0.30	35.69	43.90
14	0.00	25.73	31.90	0.00	25.42	27.60	0.00	18.10	21.00	0.00	12.28	14.50	0.00	13.09	16.60	0.00	28.70	32.80
15	0.02	23.63	38.90	0.00	21.29	25.20	0.00	15.62	18.90	0.00	11.92	14.30	0.18	14.61	17.80	0.00	23.51	28.10
16	0.41	26.01	40.30	0.00	20.13	24.00	0.00	15.98	17.20	0.00	12.27	14.50	0.00	13.91	15.50	0.00	22.05	25.30
17	0.01	22.19	25.10	0.00	20.00	23.10	0.00	14.97	17.90	0.00	11.38	15.20	0.00	12.97	15.50	0.00	19.93	22.80
18	0.00	19.69	23.80	0.00	18.92	21.50	0.00	13.91	15.90	T	12.67	17.50	0.00	12.90	14.30	0.00	18.79	20.90
19	0.09	20.43	22.90	0.00	17.19	20.90	0.00	13.33	17.40	0.20	11.92	15.30	0.00	12.81	15.90	0.00	17.69	21.80
20	0.03	18.44	21.80	0.00	17.14	19.20	0.00	13.55	18.00	0.06	12.91	15.80	0.00	11.67	13.70	0.00	16.96	20.80
21	0.00	19.38	21.20	0.00	15.65	19.80	0.00	12.73	15.80	0.08	12.77	14.50	0.00	12.33	14.90	0.00	17.17	19.90
22	T	17.80	20.40	0.00	16.21	19.30	0.00	13.20	15.50	0.96	28.55	48.80	0.00	11.30	15.10	0.00	16.57	18.90
23	0.00	18.27	21.60	0.00	14.52	19.00	0.00	13.00	15.60	0.61	31.82	43.20	0.00	12.09	14.10	T	16.15	19.70
24	0.00	16.07	18.70	0.00	16.23	19.20	0.00	11.61	14.10	0.32	23.09	31.36	0.11	14.03	21.60	T	15.65	19.70
25	0.00	16.14	18.20	0.24	17.83	24.80	0.00	12.91	14.70	0.00	17.73	23.10	0.50	31.40	55.50	0.00	14.61	19.10
26	0.00	16.36	40.60	0.22	16.57	20.10	0.00	11.34	14.80	T	18.46	20.00	0.70	27.30	36.40	0.00	14.41	17.90
27	1.50	23.49	40.80	0.00	15.48	21.50	0.00	13.21	18.10	0.00	16.34	18.80	0.00	20.59	23.30	0.00	14.45	17.80
28	0.00	18.49	21.30	0.00	15.17	17.00	0.42	14.44	18.00	0.00	15.13	18.00	0.00	17.48	21.50	T	14.93	17.20
29	0.00	17.99	19.00	0.00	13.91	17.60	0.09	13.76	16.30	0.00	15.10	18.50	0.00	17.48	20.60	0.00	14.49	16.60
30	0.00	16.82	19.10	0.00	13.89	19.80	0.00	13.37	16.00	0.00	14.46	16.40	T	16.78	19.60	0.55	14.42	17.60
31	0.00	15.72	20.30	0.00	13.78	16.40				0.00	13.66	17.20				0.00	13.60	16.70
TOTAL	5.01	711.75		4.56	665.05		2.98	458.24		2.61	463.26		1.96	446.71		1.62	563.47	

Total Plant Flow (MG) 8248.59

AVG	0.17	22.96	30.01	0.15	21.45	28.43	0.10	15.27	18.90	0.09	14.94	18.91	0.07	14.89	19.00	0.06	18.18	22.11
MAX	2.82	96.22	95.70	2.74	61.58	95.60	0.94	26.08	41.50	0.96	31.82	48.80	0.70	31.40	55.50	0.77	51.90	65.00
MIN	0.00	15.72	18.20	0.00	13.78	16.40	0.00	11.34	14.10	0.00	11.38	14.30	0.00	11.30	13.70	0.00	13.56	16.10

Daily Flow = MG (Million Gallons)
Peak Flow = MGD (Million Gallons per Day)

Precipitation = Inches
Precipitation Record = 8AM to 8AM

Total Precipitation (Inches) 40.52
Average Daily Flow (MG) 22.60

BOD – TSS - Phosphorus

	BOD					TOTAL SUSPENDED SOLIDS					PHOSPHORUS					FLOW		2019
	RAW	PRI IN	PRI EFF	FIN	% R	RAW	PRI IN	PRI EFF	FIN	% R	RAW	PRI IN	PRI EFF	FIN	% R	MGD	Total MG	MGD
January	82	94	48	10	88%	72	98	31	5	93%	2.0	2.3	1.7	0.66	67%	26.47	820.68	20.78
February	105	95	54	12	89%	84	97	33	4	95%	2.4	2.5	1.8	0.72	70%	21.75	630.67	34.97
March	94	98	55	12	87%	79	108	35	5	94%	2.1	2.4	1.7	0.70	67%	28.01	868.35	31.57
April	103	122	55	13	87%	101	143	35	5	95%	2.3	2.7	1.7	0.71	69%	26.87	806.22	25.06
May	75	87	41	9	88%	64	91	30	6	91%	1.6	1.9	1.3	0.61	62%	40.45	1254.05	38.06
June	121	130	63	7	94%	113	142	41	3	97%	3.0	3.1	2.0	0.73	76%	19.00	570.07	25.78
July	109	114	65	10	91%	95	115	48	5	95%	2.8	2.8	1.9	0.69	75%	22.93	710.75	19.10
August	107	124	67	8	93%	112	147	50	5	96%	2.9	3.0	2.0	0.67	77%	21.45	665.05	16.81
September	139	150	88	10	93%	132	169	56	6	95%	3.5	4.0	2.5	0.74	79%	15.27	458.24	26.92
October	149	158	94	12	92%	122	202	48	7	94%	3.7	4.4	2.3	0.74	80%	14.96	463.78	36.78
November	155	174	94	9	94%	140	192	48	4	97%	3.7	4.2	2.3	0.68	82%	14.89	446.71	25.27
December	138	140	80	9	93%	116	139	42	6	95%	3.2	3.3	2.2	0.74	77%	18.16	563.11	22.42
AVG	115	124	67	10	91%	103	137	41	5	95%	2.8	3.1	2.0	0.7	73%	22.62	8257.68	26.91
2019	93	109	54	10	89	88	123	37	7	92	2.2	2.5	1.7	0.7	66	26.91		
2018	114	142	66	11	91	107	160	43	6	95	3	3	2	1	68	24.37		
2017	126	141	67	10	92	115	166	41	5	96	2.8	3.2	1.9	0.8	69	21.41		
2016	124	132	67	9	93	120	157	41	5	96	2.9	3.1	1.9	0.8	72	20.29		
2015	137	156	72	11	92	129	193	43	5	96	3.2	3.6	1.9	0.8	74	18.43		
2014	130	142	71	13	90	122	168	43	7	94	3.1	3.7	2.0	0.8	74	19.36		
2013	137	139	70	13	90	128	158	41	6	95	3.2	3.7	2.0	0.8	75	20.98		
2012	159	156	75	15	91	143	195	43	7	95	3.9	4.7	2.1	0.8	80	15.54		
2011	151	159	71	13	91	139	222	43	7	95	3.4	4.7	1.9	0.7	78	19.62		
2010	144	158	68	12	92	137	223	38	6	96	3.5	4.7	1.9	0.7	78	19.50		
2009	119	138	68	11	90	121	196	48	7	94	3.1	5.2	2.0	0.7	76	24.32		
2008	122	147	68	12	90	126	188	49	7	94	3.2	4.2	2.1	0.7	78	24.76		
2007	122	150	66	14	89	139	199	48	7	95	3.2	4.3	2.1	0.7	78	23.07		
2006	125	158	60	15	87	137	240	44	7	95	3.1	4.3	1.9	0.7	77	19.71		

Beginning in 2007, flow numbers are effluent flow.

LOADING CHARACTERISTICS CHART

2020	MG Flow	AVG Daily Flow MGD	INF BOD	LBS BOD/Day	INF T.S S.	LBS T.S.S./DAY	INF P	LBS/P Day
January	820.68	26.47	82	18102	72	15895	2.0	442
February	630.67	21.75	105	19046	84	15237	2.4	435
March	868.35	28.01	94	21959	79	18455	2.1	491
April	806.22	26.87	103	23082	101	22634	2.3	515
May	1254.05	40.45	75	25301	64	21591	1.6	540
June	570.07	19.00	121	19174	113	17906	3.0	475
July	710.75	22.93	109	20845	95	18167	2.8	535
August	665.05	21.45	107	19142	112	20036	2.9	519
September	458.24	15.27	139	17702	132	16810	3.5	446
October	463.78	14.96	149	18590	122	15222	3.7	462
November	446.71	14.89	155	19248	140	17386	3.7	459
December	563.11	18.16	138	20901	116	17569	3.2	485
Total	8257.68			7,419,212		6,619,509		177,165
AVG/Day	22.56		115	20,258	103	18,076	2.8	484

2019	MG Flow	AVG Daily Flow MGD	INF BOD	LBS BOD/Day	INF T.S S.	LBS T.S.S./DAY	INF P	LBS/P Day
January	644.32	20.78	103	17850	93	16117	2.4	416
February	979.11	34.97	78	22749	73	21290	1.7	496
March	978.64	31.57	80	21064	74	19484	1.9	500
April	751.91	25.06	93	19437	88	18392	2.2	460
May	1179.94	38.06	62	19680	66	20950	1.5	476
June	773.31	25.78	88	18920	86	18490	2.0	430
July	591.95	19.10	107	17044	105	16726	2.6	414
August	521.08	16.81	140	19627	133	18646	3.2	449
September	807.61	26.92	94	21104	88	19757	2.3	516
October	1140.29	36.78	74	22699	69	21165	1.7	521
November	758.03	25.27	83	17492	79	16649	2.1	443
December	695.09	22.42	117	21877	105	19633	2.8	524
Total	9821.28			7,280,742		6,909,205		171,651
AVG/Day	26.91		93	19,962	88	18,942	2.2	470

2018	MG Flow	AVG Daily Flow MGD	INF BOD	LBS BOD/Day	INF T.S S.	LBS T.S.S./DAY	INF P	LBS/P Day
January	453.14	14.62	176	21460	152	18533	3.7	451
February	581.09	20.75	128	22151	109	18863	2.6	450
March	533.55	17.21	127	18228	111	15932	2.8	402
April	746.13	24.87	112	23231	113	23438	2.5	519
May	1131.38	36.50	79	24048	79	24048	1.9	578
June	879.20	29.31	98	23956	98	23956	2.3	562
July	600.85	19.38	117	18911	112	18102	3.0	485
August	548.12	17.68	139	20496	135	19906	3.2	472
September	744.65	24.82	112	23184	118	24426	2.5	517
October	1143.30	36.88	86	26452	85	26144	1.9	584
November	702.27	23.41	98	19133	88	17181	2.2	430
December	832.06	26.84	99	22161	89	19922	2.1	470
Total	8895.74			8,009,814		7,618,483		180,154
AVG/Day	24.37		114	21,951	107	20,871	2.6	493

Beginning in 2007, flow numbers are effluent flow.

Summary of Sampling of POTW Influent and Effluent Waterstreams

Date of Sample	Parameters (µg/L - micrograms/liter)																							
	Arsenic (T)		Cadmium (T)		Chromium (T)		Copper (T)		Lead (T)		Molybdenum (T)		Nickel (T)		Selenium (T)		Silver (T)		Zinc (T)		Mercury (T)		Cyanide	
	Inf	Eff	Inf	Eff	Inf	Eff	Inf	Eff	Inf	Eff	Inf	Eff	Inf	Eff	Inf	Eff	Inf	Eff	Inf	Eff	Inf	Eff	Inf	Eff
01/08/20	<30	<30	<2	<2	<5	<5	30	10	<10	<10	<20	<20	10	10	<30	<30	<5	<5	60	40	0.0054	0.00097		
02/04/20	<30	<30	<2	<2	<5	<5	20	10	<10	<10	<20	<20	<10	<10	<30	<30	<5	<5	80	50	0.0072	0.0013		
03/04/20	<30	<30	<2	<2	<5	<5	50	10	<10	<10	<20	<20	10	10	40	30	<5	<5	70	40	0.0080	0.00074		
04/07/20	<30	<30	<2	<2	<5	<5	30	10	<10	<10	<20	<20	10	10	<30	<30	<5	<5	50	<40	0.0056	0.00064		
05/06/20	30	<30	<2	<2	<5	<5	30	20	<10	<10	<20	<20	10	10	<30	<30	<5	<5	70	50	0.014	0.00092	<6	<6
06/09/20	<30	<30	<2	<2	5	<5	60	10	<10	<10	<20	<20	10	10	<30	<30	<5	<5	130	40	0.021	0.00076		
07/08/20	<30	<30	<2	<2	<5	<5	60	10	<10	<10	<20	<20	10	10	<30	30	<5	<5	130	60	0.024	0.00069		
08/04/20	<30	<30	<2	<2	<5	<5	30	10	<10	<10	<20	<20	10	10	<30	<30	<5	<5	70	40	0.027	0.0013		
09/02/20	<30	<30	<2	<2	<5	<5	50	10	<10	<10	<20	<20	10	10	<30	<30	<5	<5	100	40	0.029	0.00077		
10/06/20	<30	<30	<2	<2	5	<5	50	10	<10	<10	<20	<20	10	10	<30	<30	<5	<5	100	50	0.020	0.0014		
11/04/20	<30	<30	<2	<2	4	<2	40	<10	<10	<10	<20	<20	10	10	<30	<30	<5	<5	100	<40	0.018	0.00083	<6[1]	<6[1]
12/01/20	<30	30	<2	<2	2	<2	30	10	<10	<10	30	<20	10	10	<30	<30	<5	<5	70	70	0.032	0.00077		
Minimum	*<30*	*<30*	<2	<2	<2	<2	*20*	*<10*	*<10*	*<10*	*<20*	*<20*	*<10*	*<10*	*<30*	*<30*	<5	<5	*50*	*<40*	*0.0054*	*0.0006*	<6	<6
Maximum	*30*	*30*	<2	<2	*5*	<5	*60*	*20*	*<10*	*<10*	*30*	*<20*	*10*	*10*	*40*	*30*	<5	<5	*130*	*70*	*0.032*	*0.0014*	<6	<6
Average	***<30***	***<30***	***<2***	***<2***	***<2***	***<2***	***40***	***10***	***<10***	***<10***	***<20***	***<20***	***<10***	***<10***	***<30***	***<30***	***<5***	***<5***	***86***	***40***	***0.018***	***0.0009***	***<6***	***<6***

Per DNR requirements, any "less than" (<) result reported is treated as a zero when calculating monthly averages

Detection limit change effective October 2020

[1]Grab sample collected 11/05/20

The Racine POTW does not currently have discharge limits for metals with the exception of mercury. The mercury limit is 0.0040 µg/L (4.0 ng/L). Influent and effluent samples are analyzed monthly and reported to the WDNR as required in the Racine WPDES permit. All metals (except mercury) are analyzed by the Racine WWTP Laboratory, WDNR certification #252003400. Low level mercury (Inf) and ultra-low level mercury (Eff) are analyzed by Northern Lake Service, a WDNR certified laboratory.

PRIMARY & DIGESTED BIOSOLIDS

	Clarifiers 1-12		Post Digestion		VOL Reduction
2020	% SOL	% VS	% SOL	% VS	%
January	4.3	82	2.1	61.6	65
February	4.1	82	2.1	60.9	66
March	4.3	80	2.2	63.0	57
April	4.5	74	2.3	59.4	49
May	4.1	76	2.2	57.5	57
June	4.1	76	2.4	55.6	60
July	4.8	74	2.3	56.6	54
August	4.9	73	2.4	55.8	53
September	4.2	75	2.4	55.8	58
October	4.2	76	2.4	57.8	57
November	4.0	78	2.2	54.8	66
December	4.2	81	2.1	58.5	67
Average	**4.3**	**77**	**2.3**	**58**	**59**

	Clarifiers 1-12		Post Digestion		VOL Reduction
2019	% SOL	% VS	% SOL	% VS	%
January	4.0	81	2.1	58.8	67
February	4.0	80	2.0	59.2	64
March	4.1	79	2.1	59.7	61
April	4.5	76	2.0	55.0	61
May	4.8	75	2.1	58.9	52
June	4.5	78	2.2	59.1	59
July	4.6	77	2.1	57.2	60
August	4.7	75	2.1	58.2	54
September	4.9	73	2.2	56.6	52
October	4.5	74	2.3	54.8	57
November	4.1	78	2.2	53.9	67
December	4.0	81	2.1	59.9	65
Average	**4.4**	**77**	**2.1**	**58**	**60**

	Clarifiers 1-12		Post Digestion		VOL Reduction
2018	% SOL	% VS	% SOL	% VS	%
January	4.4	80	2.1	60	62
February	4.7	81	2.2	62	62
March	4.3	80	2.1	59	64
April	4.7	76	2.2	59	55
May	5.1	74	2.2	59	49
June	4.8	75	2.4	58	54
July	4.5	74	2.2	58	51
August	4.2	77	2.2	57	60
September	4.2	75	2.2	56	58
October	4.3	73	2.1	56	53
November	4.3	79	2.2	57	65
December	4.1	78	1.9	58	61
Average	**4.5**	**77**	**2.2**	**58**	**58**

% Sol = % Solids
% VS = % Volatile Solids

DIGESTER OPERATIONS

	Raw Sludge AVG /Day (1000 Gallon)							Transfer Sludge AVG/Day (1000 Gallon)				
	A	B	D	E	GBT	Total In	TWAS/PS	A	B	D	E	Total Out
January	9	9	9	9	28	64	0.778	22	14	19	11	66
February	8	8	8	8	25	57	0.781	19	13	14	9	55
March	9	9	9	9	29	65	0.806	21	14	18	10	63
April	9	9	9	8	29	64	0.829	22	13	19	9	63
May	9	8	8	8	31	64	0.939	24	16	19	11	70
June	9	7	9	9	28	62	0.824	21	13	18	10	62
July	10	8	8	7	32	65	0.970	23	13	22	10	68
August	9	8	8	8	32	65	0.970	23	12	19	10	64
September	8	9	8	8	28	61	0.848	20	13	17	10	60
October	9	8	9	8	28	62	0.824	21	13	18	9	61
November	9	8	9	9	30	65	0.857	22	13	18	10	63
December	10	8	9	9	30	66	0.833	20	14	20	10	64
AVG	**9**	**8**	**9**	**8**	**29**	**63**	**0.855**	**22**	**13**	**18**	**10**	**63**

Solids enter the plan, are digested and dewatered. Biological solids are produced, thickened, treated and also digested with solids that entered the plant. After digestion, this mixture is dewatered by belt filter presses and hauled from the plant to storage and ultimately land application. Due to WPDES permit changes regarding effluent ammonia limits in 2011, process control changes were implemented in 2010 that reduced biological solids (this reducing total tons entering the digesters ultimately leaving the plant.

													Polymer Dose		lb/DT Based	Haul Cost		Landfill
Month	Days	Hours	MG	% SOL	Dry Tons	DT/Day	Dry Tons	Capture	% SOL	Wet Tons	$/DT	POLY $	LBS	LB/D.T.	on Feed	&/W.T.	$	Fee
January	17	512.1	2.591	2.1	227	7.3	217	95.7	21.8	996.30	42	9,127.28	5,216	24.0	23.0	29.46	29,351.00	
February	14	333.8	1.626	2.1	142	5.1	142	99.8	20.5	693.40	47	6,680.00	3,817	26.9	26.8	56.84	39,416.31	216.00
March	16	432.8	2.162	2.2	198	6.4	195	98.5	19.5	1,001.94	49	9,616.71	5,495	28.1	27.7	101.71	101,907.32	810.00
April	17	449.7	2.038	2.2	187	6.2	182	97.3	20.1	904.82	44	7,953.75	4,545	25.0	24.3	62.96	$56,963.65	$324.00
May	16	445.2	2.346	2.3	225	7.3	198	87.9	21.6	915.58	39	7,776.74	4,444	22.5	19.8	29.16	$26,698.31	
June	17	427.1	2.133	2.3	205	6.8	183	89.5	21.6	847.57	42	7,697.20	4,398	24.0	21.5	29.16	$24,715.14	
July	18	492.5	2.409	2.3	231	7.5	211	91.1	21.6	974.89	43	9,143.03	5,225	24.8	22.6	29.07	$28,340.05	
August	17	447.4	2.239	2.4	224	7.2	206	91.7	22.8	901.40	37	7,613.13	4,350	21.2	19.4	29.07	$26,203.70	
September	18	480.1	2.400	2.4	240	8.0	211	87.8	22.7	929.40	40	8,451.14	4,829	22.9	20.1	29.07	$27,017.66	
October	16	401.0	2.095	2.5	218	7.0	188	86.3	22.9	822.70	37	6,940.87	3,966	21.1	18.2	29.04	$23,891.21	
November	15	404.1	2.016	2.2	185	6.2	177	95.6	22.5	786.17	41	7,318.66	4,182	23.6	22.6	29.04	$22,830.38	
December	17	474.0	2.438	2.2	224	7.2	215	96.1	22.6	950.74	36	7,666.58	4,381	20.4	19.6	29.04	$27,609.49	
Total	198	5,300	26.493		2,506.50	82.23	2,324.65			10,724.91		95,985.09	54,849			40.55	$434,944.22	
									Wet Tons/Day	29.38		Polymer lbs/day	150.27					
AVG	17	441.7	2.208	2.3	208.9	6.9	194	93.1	21.7	893.74	41	7,998.76	4,571	23.7	22.1	22.1	$36,245.35	
2019	192	5,167	26.360	2.1	2,304		2,096		21.3	10,476	41	85,835	50,369	24	21.8	28.80	$301,751	
2018	199	5,687	26.801	2.2	2,405		2,219		20.7	10,995	35	77,218	51,454	23	20.7	29.68	$326,338	
2017	215	5,925	29.184	2.1	2,508		2,172		19.4	11,414	34	73,848	51,284	24	20.4	27.54	$314,384	
2016	204	5,702	28.733	2.1	2,486		2,115		19.6	11,017	35	74,684	51,864	24	20.9	26.02	$286,714	
2015	202	5,541	30.722	2.2	2,816		2,197		20.4	10,801	32	71,199	50,331	23	17.9	27.92	$301,610	
2014	201	5,104	31.258	2.4	3,129		2,358		22.2	10,790	31	73,791	52,708	22	16.9		$332,625	
2013	205	5,161	30.137	2.5	3,089		2,517		23.8	10,609	31	76,169	54,406	22	17.7	45.75	$486,375	
2012	201	5,090	31.529	2.4	3,111		2,592		23.8	11,009	29	75,583	53,988	21	17.4	44.75	$492,671	
2011	231	5,439	34.914	2.1	3,181		2,542		22.6	11,260	27	67,813	51,401	20	16.3	43.75	$492,621	
2010	244	5,514	36.905	2.1	3,256		2,788		23.8	11,737	23	62,617	50,495	18		42.75	$501,768	
2009	251	6,779	37.986	2.4	3,819		3,719		23.9	15,518	26	96,358	78,339	21		41.75	$647,891	
2008	244	6,789	43.595	2.3	4,190		3,684		24.5	14,920	24	86,945	71,642	20		40.75	$607,997	
2007	215	7,277	53.426	2.0	4,393		3,686		25.0	14,795	23	85,176	74,065	20		39.75	$588,112	
2006	248	7,740	55.187	2.1	4,824		3,795		24.3	15,909	24	90,184	78,421	21		38.75	$616,506	

$1.750
Polymer cost/lb

GRAVITY BELT THICKENER SUMMARY

	Days	WAS Feed MG Total	GPD	TWAS MG	GPD	mg/l WAS (Lab)	Pounds In	Pounds Out	%S TWAS (Lab)	Belt Speed	WAS GPM	TWAS GPM	Total Hours	Inch	Polymer Gal	Pounds	Water Rate	Conc.	Batches	Poly Dosage lbs/tons	Polymer Cost	$ per lb Out
January	31	12.861	0.415	0.8530	0.0275	2870	9931	11245	4.90	15	303	19.11	744.0	24.71	303	2603	5	0.40	477	22	$ 4,654.11	$ 0.41
February	29	10.999	0.393	0.7390	0.0264	3122	10228	10839	5.10	15	283	17.69	696.0	12.88	158	1357	5	0.36	275	14	$ 2,526.34	$ 0.23
March	30	10.458	0.337	0.8660	0.0279	3592	10106	13241	5.50	15	259	20.04	701.0	11.4	140	1201	5	0.40	258	12	$ 2,317.84	$ 0.18
April	29	8.398	0.280	0.8340	0.0278	3551	8290	12712	5.30	15	210	19.97	640.0	12.8	157	1347	5	0.40	326	19	$ 2,224.60	$ 0.18
May	31	11.501	0.371	0.9500	0.0306	4365	13504	14824	5.80	15	293	21.27	704.0	18.7	229	1972	5	0.38	446	15	$ 3,733.49	$ 0.25
June	28	9.724	0.324	0.7750	0.0258	3755	10151	11542	5.00	15	270	19.23	616.0	13.11	161	1381	5	0.40	335	15	$ 2,456.27	$ 0.21
July	31	12.140	0.392	0.9840	0.0317	3808	12436	12707	4.80	15	286	22.04	720.0	18.7	229	1967	5	0.40	387	14	$ 3,356.31	$ 0.26
August	31	12.211	0.394	0.9930	0.0320	3510	11531	12556	4.70	15	304	22.24	712.0	22.2	271	2335	5	0.45	442	18	$ 3,675.02	$ 0.29
September	30	10.160	0.339	0.8300	0.0277	3341	9435	10153	4.40	15	241	19.21	698.0	13.4	164	1413	5	0.45	241	12	$ 2,468.32	$ 0.24
October	31	10.646	0.343	0.8670	0.0280	2976	8524	9797	4.20	15	252	19.43	720.0	14.9	182	1566	5	0.42	302	15	$ 2,862.96	$ 0.29
November	29	9.299	0.310	0.8570	0.0286	3302	8535	11091	4.50	15	230	20.53	696.0	11.7	143	1230	5	0.40	244	14	$ 2,257.73	$ 0.20
December	30	9.616	0.310	0.9020	0.0291	3426	8864	11033	4.40	15	237	20.88	664.0	11.4	140	1202	5	0.43	203	10	$ 3,080.84	$ 0.28

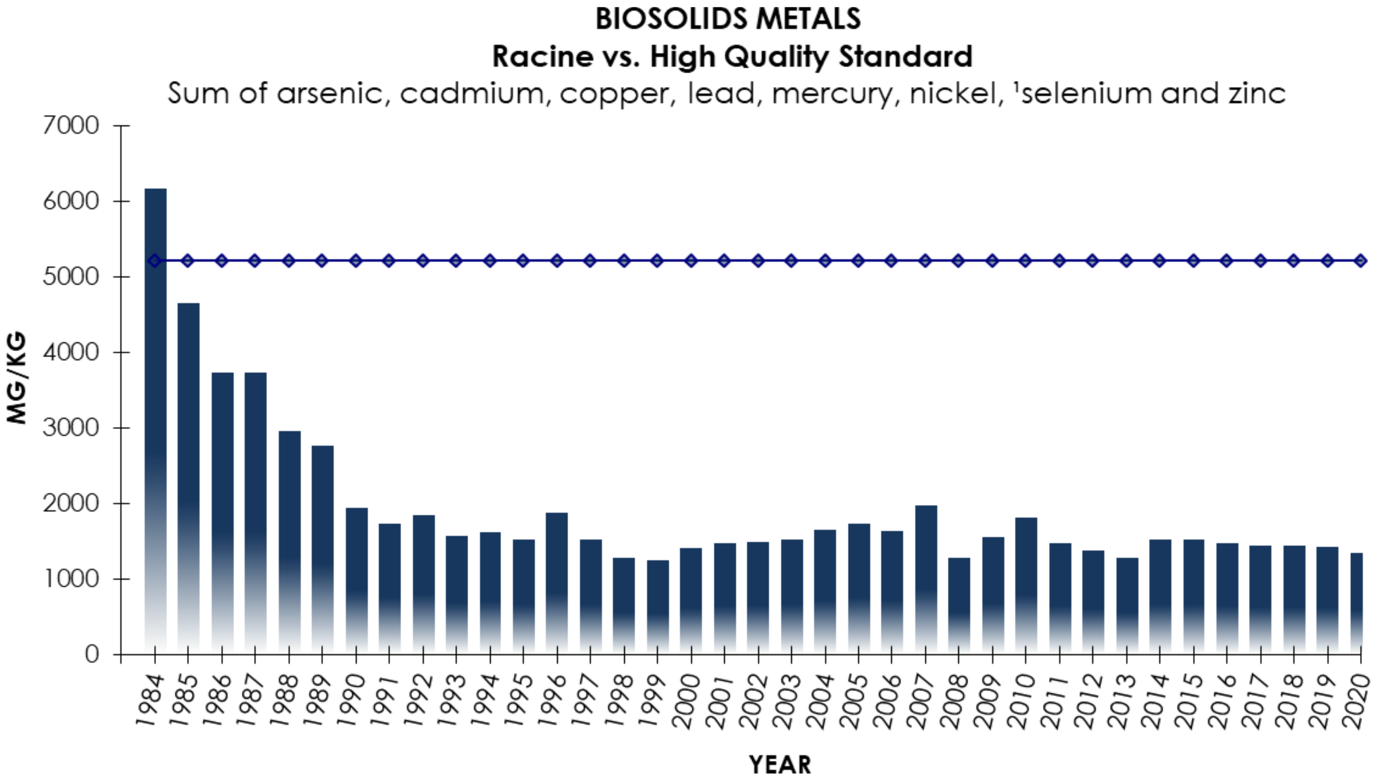
Biosolid Metal Analysis

Metals in Biosolids 2020

Sample Date	% Solids	As mg/kg dwb	Cd mg/kg dwb	Cu mg/kg dwb	Pb mg/kg dwb	Hg mg/kg dwb	Mo mg/kg dwb	Ni mg/kg dwb	Se mg/kg dwb	Zn mg/kg dwb	Cr mg/kg dwb	pH
1/8/2020	20.4	< 15	3.3	530	34	0.68	23	28	< 15	740	71	7.4
2/4/2020	20.4					0.41						7.4
3/4/2020	19.3	< 16	< 3.1	500	28	0.27	< 21	27	< 16	680	64	7.4
4/7/2020	19.6					0.38						7.4
5/6/2020	20.2	< 15	< 3.0	530	38	0.41	< 20	28	< 15	730	68	7.4
6/9/2020	21.2					0.32						7.4
7/8/2020	20.4	< 15	< 2.9	550	39	0.47	< 20	29	< 15	780	73	7.6
8/4/2020	20.6					5.8						7.5
9/2/2020	21.5	< 14	< 2.8	530	45	0.57	19	30	< 14	830	73	7.5
10/6/2020	20.7					0.67						7.5
11/4/2020	22.4	< 13	< 2.7	520	34	0.39	22	33	< 13	800	80	7.4
12/1/2020	19.9					0.39						7.3
MINIMUM	19.3	< 13	< 2.7	500	28	0.27	< 20	27	< 13	680	64	7.3
MAXIMUM	22.4	< 16	3.3	550	45	5.80	23	33	< 16	830	80	7.6
AVERAGE	**20.6**	**< 13**	**< 2.7**	**527**	**36**	**0.90**	**< 20**	**29**	**< 13**	**760**	**72**	**7.4**
HQ Limit	NA	41	39	1500	300	17	NA	420	100	2800	NA	NA

Per DNR requirements, any "less than" (<) result reported is treated as a zero when calculating monthly averages

dwb = dry weight basis



High Quality Sludge is defined by the monthly average pollutant concentration limits published by the WDNR in NR 204 (Domestic SEWAGE SLUDGE Management). Sludge that meets all of the pollutant concentration limits listed is exempt from cumulative loading limits for metals where sludge is land applied. Racine biosolid metal concentrations dramatically decreased after the Industrial Pretreatment Program WENT INTO effect in 1984. Since 1985 Racine biosolids have been considered High Quality Sludge and have principally been applied to agricultural land.

[1]Selenium listed among pollutants with a High Quality limit in the permit effective 01/07/1996.

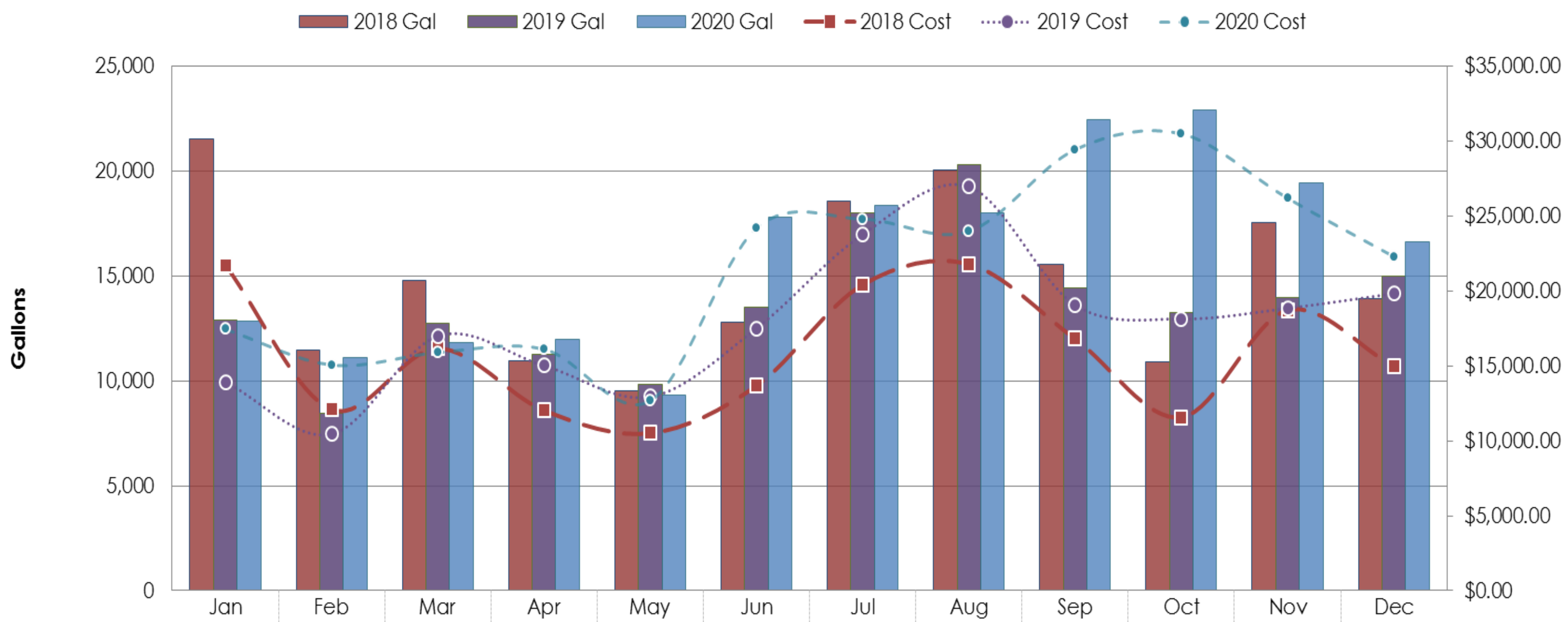
SECONDARY TREATMENT DATA CHART

2020	Flow MGD	AER MLSS	AER MLVSS	RAS TSS AVG	RAS VSS AVG	MLSS % VM	RAS % VM	SV 30	SVI	WAS MGD	RAS MGD	Total RAS MGD	SRT	PRI BOD	F/M Ratio	E-Coli #/100 MLS	Fecal's #/100 MLS
January	26.47	1652	1353	2870	2362	82	82	180	109	0.42	37.10	36.68	7	48	0.19	140	128
February	21.75	1687	1395	3122	2594	83	83	165	98	0.39	32.54	32.16	7	54	0.17	104	114
March	27.97	1687	1366	3592	2921	81	82	146	87	0.37	28.52	28.15	7	55	0.22	138	143
April	25.77	1548	1237	3551	2837	80	80	117	75	0.30	21.55	21.26	8	55	0.23	135	140
May	37.43	1747	1311	4365	3245	75	75	117	67	0.37	32.73	32.36	7	41	0.23	49	53
June	19.00	1686	1332	3755	2978	79	79	128	77	0.35	19.58	19.23	7	63	0.18	72	127
July	22.46	1743	1319	3808	2885	76	76	120	69	0.39	21.81	21.42	7	65	0.21	97	183
August	21.17	1764	1339	3510	2672	76	76	122	70	0.41	22.44	22.04	7	67	0.20	105	173
September	15.27	1619	1247	3341	2582	77	77	120	75	0.34	18.43	18.09	7	88	0.24	126	233
October	14.96	1705	1302	2976	2284	76	77	140	83	0.36	24.62	24.26	8	94	0.22	151	70
November	14.89	1692	1332	3302	2605	79	79	150	89	0.33	19.55	19.22	8	94	0.19	137	63
December	18.16	1688	1372	3426	2780	81	81	141	83	0.31	21.88	21.57	9	80	0.21	182	66
AVG	**22.11**	**1685**	**1325**	**3468**	**2729**	**79**	**79**	**137**	**82**	**0.36**	**25.06**	**24.70**	**7**	**67**	**0.21**	**120**	**124**
MAX	**37.43**	**1764**	**1395**	**4365**	**3245**	**83**	**83**	**180**	**109**	**0.42**	**37.1**	**36.68**	**9**	**94**	**0.24**	**182**	**233**
MIN	**14.89**	**1548**	**1237**	**2870**	**2284**	**75**	**75**	**117**	**67**	**0.30**	**18.43**	**18.09**	**7**	**41**	**0.17**	**49**	**53**
2019	26.90	1816	1432	3814	3009	79	79	127	71	0.318	28.55	28.23	10	54	0.20	143	134
2018	24.27	1788	1414	3611	2846	79	79	136	76	0.348	25.54	25.26	9	66	0.21	122	110
2017	21.32	1785	1425	3459	2768	80	80	154	87	0.32	23.94	23.62	9	67	0.19	107	96
2016	20.24	1771	1418	3391	2725	80	80	142	81	0.320	23.51	23.19	8	67	0.19	133	112
2015	18.43	1809	1438	3867	3073	80	80	147	80	0.260	18.69	18.43	9	72	0.19	114	102
2014	19.32	1882	1485	4361	3429	79	79	128	69	0.235	15.45	15.22	9	71	0.19	207	137
2013	20.81	1692	1294	3876	2974	76	77	139	82	0.310	16.45	16.17	8	70	0.22	188	183
2012	15.52	1901	1494	5092	4018	79	79	141	74	0.210	12.93	12.72	9	75	0.19	221	139
2011	19.62	1861	1455	5160	4041	78	78	131	72	0.210	12.93	12.72	8	71	0.20	134	77
2010	19.45	1509	1184	3932	3077	79	79	137	93	0.260	13.56	13.30	8	68	0.23	87	68
2009	23.79	1763	1392	4543	3590	79	79	157	92	0.320	17.83	17.52	7	68	0.23	85	69
2008	24.17	1950	1532	5353	4194	79	79	179	91	0.270	15.46	15.19	7	68	0.22	85	82
2007	23.07	1677	1329	4143	3473	80	84	146	89	0.310	14.58	14.25	5	65	0.20	177	242

Beginning in 2007, flow numbers are effluent flow.
Beginning in 2008, the flow data is for the flow through the plant. It does not include the EQ flows.

Ferric Chloride Summary

Ferric chloride is used for phosphorus removal. The iron ion binds with the phosphorus and settles out the phosphorus in the primary clarifiers. Ferric chloride is an iron salt that is an industrial scale commodity. The ferric chloride used at the treatment plant is purified byproduct of the steel industry. Because of this, when the steel industry experiences an economic downturn, the price of ferric chloride for the treatment plant increases due to a shortage of supply. A secondary cause of price fluctuation is the amount of ferric chloride exported to China for the use in their fertilizers. As the amount of phosphorus in the influent to the plant increases, the amount of ferric chloride added also increases. The result is an increase in the amount of sludge processed at the plant. Low flows at the wastewater plant result in increased ferric chloride dosage due to the higher concentration of phosphorus in the wastewater. Plant staff added pump, piping, and metering controls for phosphorus removal in the final clarifiers.



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018 Gal	21,517	11,442	14,768	10,939	9,543	12,801	18,582	20,061	15,539	10,896	17,543	13,901
2019 Gal	12,901	8,441	12,747	11,275	9,809	13,492	18,017	20,301	14,406	13,240	13,987	14,973
2020 Gal	12,867	11,118	11,811	11,980	9,335	17,805	18,357	18,008	22,448	22,883	19,436	16,603
2018 Cost	$21,733.65	$12,092.34	$16,163.36	$12,031.89	$10,510.21	$13,676.80	$20,415.73	$21,786.04	$16,802.88	$11,574.75	$18,716.45	$14,952.87
2019 Cost	$13,930.74	$10,442.63	$16,996.63	$15,017.20	$12,942.73	$17,504.42	$23,775.88	$26,956.31	$19,057.89	$18,135.59	$18,846.67	$19,830.34
2020 Cost	$17,446.93	$15,060.85	$15,892.63	$16,120.51	$12,674.20	$24,191.02	$24,798.71	$23,978.40	$29,431.05	$30,485.29	$26,185.50	$22,294.71

Sodium Hypochlorite Summary

Sodium hypochlorite (NaOCl) is added to the equalization basins for pathogen destruction (disinfection). NaOCl is also used to kill filamentous bacteria (that hinder settling) in the secondary treatment system. Sodium hypochlorite can be considered a solution of dissolved chlorine gas in sodium hydroxide. Its character is that of common household bleach or "swimming pool) chlorine; however, sodium hypochlorite for wastewater treatment usually is found in 12.5% concentration. Chlorine is easily released from the sodium hypochlorite due to the breaking of weak ionic bonds with its base molecule, sodium hydroxide. Piping material, valve selection, seal materials, pressure relief, and stagnation control, are a few design, safety and operational measures to consider with the use of NaOCl systems. Off-gassing occurs with sodium hypochlorite due to common decomposition of the chemical, resulting in diminished potency and requiring the chemical to be replenished for effective disinfection.

	2018		2019		2020	
	Gallons	Cost	Gallons	Cost	Gallons	Cost
January	449	$301	0	$0	0	$0
February	2,107	$1,412	315	$258	1,820	$1,401
March	0	$0	0	$0	3,033	$2,335
April	0	$0	0	$0	2,821	$2,172
May	3,776	$2,530	1,554	$1,274	6,376	$4,909
June	420	$281	0	$0	1,974	$1,520
July	735	$492	0	$0	630	$485
August	1,382	$926	1,036	$850	749	$577
September	4,182	$3,036	5,233	$4,272	665	$512
October	2,892	$2,371	1,491	$1,148	742	$571
November	966	$792	0	$0	2,135	$1,644
December	1,579	$1,295	0	$0	1,169	$900
TOTAL	18,488	$13,437	9,630	$7,803	22,114	$17,027

Fed to RAS for Filament Control	Fed to RAS for Filament Control Resistant Strain & EQ	Hypo Fed to Influent & RAS	EQ Event
2018: January, February, August, November	2018: N/A	2018: September	2018: May, June, July, October, December
2019: N/A	2019: August	2019: N/A	2019: February, May, September, October
2020: June, September, November, December	2020: N/A	2020: N/A	2020: March, April, May, July, August

Ammonia Summary

It is necessary to remove or reduce the amount of ammonia in the final effluent in order to protect the receiving water. In the un-ionized form, ammonia is toxic to the aquatic life in Lake Michigan. In the aeration system at the Wastewater Treatment Plant, the nitrifying bacteria reduce the ammonia to nitrite and nitrate. The pH of the final effluent is monitored closely and pH is reported as a time weighted average (TWA) of all of the daily pH data. The ammonia limit varies based on the daily TWA pH because at higher pH, ammonia is more toxic to the biotic make-up of the ecosystem. The treatment plant received a limit for seasonal ammonia in its 2015 WPDES Permit. The limit covers a six month seasonal period from November through April.

	Ammonia Final Effluent	TWA EFF pH	Limit Nov - Apr at TWA pH
January	3.27	7.46	27
February	3.67	7.44	27
March	4.59	7.30	31
April	6.36	7.37	31
May	6.89	7.47	27
June	3.96	7.30	31
July	9.09	7.38	31
August	5.16	7.40	31
September	9.94	7.31	31
October	9.13	7.17	39
November	3.92	7.33	31
December	4.37	7.27	35
AVG	5.86	7.35	31
MAX	9.94	7.47	39
MIN	3.27	7.17	27

Beginning in 2015, data on this sheet is monthly max. We are regulated based on a seasonal daily limit.

Sodium Bisulfite Summary

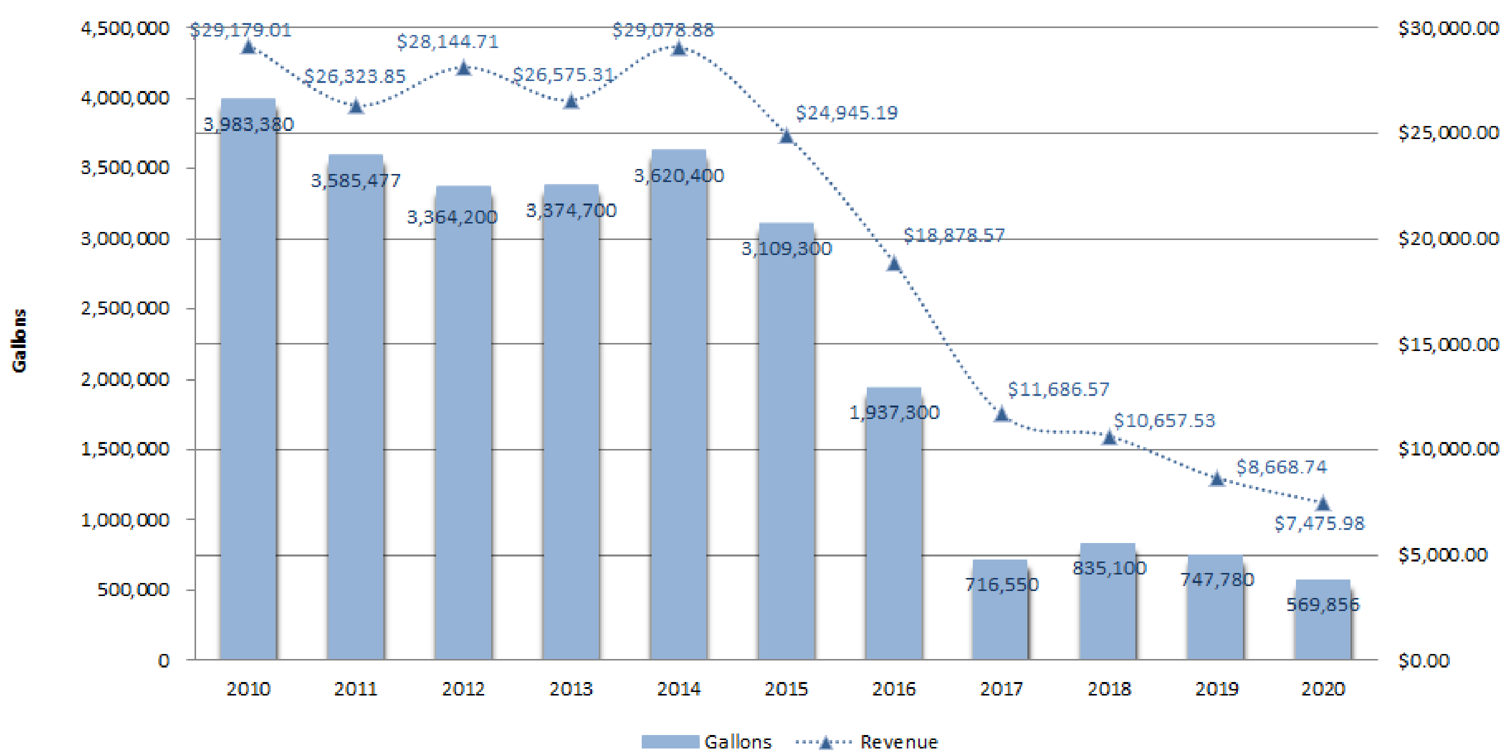
Sodium bisulfite ($NaHSO_3$) is added to the equalization basin effluent to remove chlorine that was added for pathogen control (disinfection). The plant has a maximum daily limit of <37 parts per billion (ppb) for chlorine. $NaHSO_3$ is a clear, colorless to light yellow solution with a distinctive odor. Sodium bisulfite is essentially very fine crystallized sodium granules that are dissolved in a bisulfite solution. Sodium bisulfite acts as a reducing agent for purifying and destroying residual chlorine. $NaHSO_3$ used for wastewater treatment usually is purchased at about 37% concentration. The solution is acid, reactive, and bisulfite is very reactive with sodium hypochlorite, caution must be taken when using the two chemicals together and when accepting and receiving deliveries of the two chemicals.

	2018		2019		2020	
	Gallons	Cost	Gallons	Cost	Gallons	Cost
January	0	$ -	0	$ -	0	$ -
February	0	$ -	0	$ -	0	$ -
March	0	$ -	0	$ -	182	$ 389.47
April	0	$ -	0	$ -	1,806	$ 3,708.23
May	2,075	$ 2,780.58	0	$ -	2,715	$ 3,495.16
June	0	$ -	0	$ -	0	$ -
July	0	$ -	0	$ -	658	$ 940.94
August	0	$ -	0	$ -	322	$ 460.46
September	0	$ -	0	$ -	0	$ -
October	299	$ 400.66	209	$ 325.64	0	$ -
November	0	$ -	0	$ -	0	$ -
December	0	$ -	0	$ -	0	$ -
Total	**2,374**	**$ 3,181.24**	**209**	**$ 325.64**	**5,683**	**$ 8,994.26**

Liquid Waste Haulers Summary

	Pat's		Stericycle		Total	
	Gallons	Charges	Gallons	Charges	Gallons	Charges
January	30,900	$283.35	28,900	$467.31	60,083	$750.67
February	35,000	$320.95	27,100	$438.21	62,421	$759.16
March	19,500	$178.82	27,400	$443.06	47,079	$621.87
April	8,500	$82.54	37,400	$534.45	45,983	$616.98
May	0	$0.00	30,800	$440.13	30,800	$440.13
June	6,500	$63.12	39,200	$560.17	45,763	$623.28
July	13,700	$133.03	38,900	$555.88	52,733	$688.91
August	7,500	$72.83	37,400	$534.45	44,973	$607.27
September	17,500	$169.93	40,400	$577.32	58,070	$747.24
October	5,800	$56.32	33,300	$475.86	39,156	$532.18
November	3,500	$33.99	31,300	$447.28	34,834	$481.26
December	16,600	$161.19	31,200	$445.85	47,961	$607.03
Total	**165,000**	**$1,556.03**	**403,300**	**$5,919.95**	**569,856**	**$7,475.98**
AVG	**13,750**	**$129.67**	**33,608**	**$493.33**	**47,488**	**$623.00**

Waste Hauler Rates (per 1,000)			
Pat's		Stericycle	
January-March	$9.17	January-March	$16.17
April-December	$9.71	April-December	$14.29



Community Inflow and Infiltration Chart

Racine	2016	2017	2018	2019	2020	Avg
WA Sales (Mgal)	2,957.80	2,593.12	2,526.43	2,454.34	2,369.59	2,580.3
Total Credit Meters (Mgal)	676.58	429.55	401.29	270.25	300.18	415.6
Total Water-Only Meters (Mgal)	198.00	162.77	81.16	210.87	97.00	150.0
Summer Rate Adjust (Mgal)	140.19	120.22	117.34	112.16	133.00	124.6
WA Usage (Mgal)	1,943.03	1,880.57	1,926.64	1,861.06	1,839.41	1,890.1
WW Discharge (Mgal)	3,754.11	3,949.48	4,654.34	5,116.14	4,026.56	4,300.1
I&I (Mgal)	1,811.08	2,068.90	2,727.69	3,255.08	2,187.15	2,410.0
% I&I	**48.2%**	**52.4%**	**58.6%**	**63.6%**	**54.3%**	**56.0%**

Mt Pleasant (Less SCJ)	2016	2017	2018	2019	2020	Avg
WA Usage (Mgal)	1,433.75	1,515.00	1,420.62	1,281.48	1,434.21	1,417.0
SCJ Non-Sewer Water (Mgal)	654.84	763.86	620.29	557.22	648.99	649.0
WA Usage (Mgal)	778.91	751.14	800.32	724.26	785.22	768.0
WW Discharge (Mgal)	2,170.46	2,174.15	2,293.49	2,574.18	2,359.81	2,314.4
I&I (Mgal)	1,391.54	1,423.01	1,493.17	1,849.93	1,574.59	1,546.4
% I&I	**64.1%**	**65.5%**	**65.1%**	**71.9%**	**66.7%**	**66.8%**

Caledonia	2016	2017	2018	2019	2020	Avg
WA Usage (Mgal)	372.58	489.57	431.92	435.07	461.16	438.1
WW Discharge (Mgal)	1,136.27	1,291.85	1,513.71	1,636.83	1,472.22	1,410.2
I&I (Mgal)	763.69	802.29	1,081.79	1,201.75	1,011.05	972.1
% I&I	**67.2%**	**62.1%**	**71.5%**	**73.4%**	**68.7%**	**68.9%**

Sturtevant	2016	2017	2018	2019	2020	Avg
WA Sales (Mgal)	256.04	249.17	254.44	238.97	234.38	246.6
Total Credit Meters (Mgal)	2.11	1.97	2.37	1.49	0.15	1.6
WA Usage (Mgal)	253.93	247.20	252.07	237.48	234.23	245.0
WW Discharge (Mgal)	325.34	378.32	414.03	450.37	380.01	389.6
I&I (Mgal)	71.41	131.12	161.96	212.90	145.78	144.6
% I&I	**22.0%**	**34.7%**	**39.1%**	**47.3%**	**38.4%**	**37.1%**

Elmwood Park	2016	2017	2018	2019	2020	Avg
WA Usage (Mgal)	15.46	14.57	14.52	13.46	14.26	14.5
WW Discharge (Mgal)	23.00	39.31	46.20	46.68	39.31	38.9
I&I (Mgal)	7.54	24.74	31.68	33.21	25.05	24.4
% I&I	**32.8%**	**62.9%**	**68.6%**	**71.2%**	**63.7%**	**62.8%**

North Bay	2016	2017	2018	2019	2020	Avg
WA Usage (Mgal)	8.25	8.19	6.09	6.12	7.27	7.2
WW Discharge (Mgal)	16.12	26.95	32.63	40.61	31.58	29.6
I&I (Mgal)	7.87	18.76	26.54	34.48	24.31	22.4
% I&I	**48.8%**	**69.6%**	**81.3%**	**84.9%**	**77.0%**	**75.7%**

	2016	2017	2018	2019	2020	Overall
Total WW Discharge (Mgal)	7,425.30	7,860.06	8,954.40	9,864.80	8,309.49	8,482.8
Total I&I (Mgal)	4,053.14	4,468.81	5,522.83	6,587.36	4,967.94	5,120.0
Overall System % I&I	**54.6%**	**56.9%**	**61.7%**	**66.8%**	**59.8%**	**60.4%**
Precipitation (Inches)	35.55	38.54	46.27	48.74	40.52	41.92
I&I (Mgal) / Inch Precip	114.01	115.95	119.36	135.15	122.60	122.1

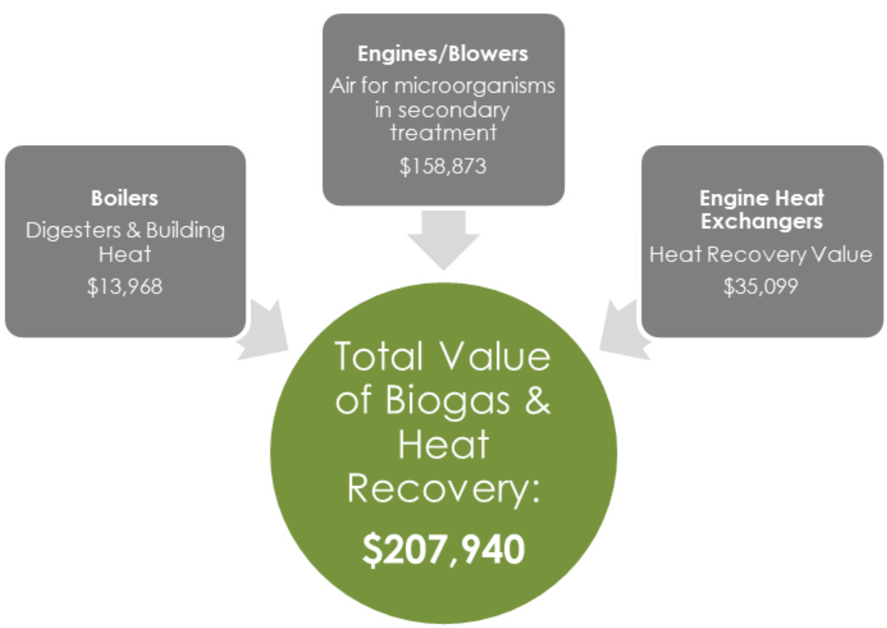
MAINTENANCE & ENERGY

Energy Independence with Biogas

The Racine Wastewater Utility has been using biogas in its operations for over 50 years. Biogas is a bi-product of decomposition from organic material in the digester operations. Biogas makeup is approximately 63% methane and has a Btu value of 630 Btu/ft^3 compared to 1000 Btu/ft^3 for natural gas. The Utility strives to make use of the biogas in the most cost efficient manner to reduce overall energy needs. The biogas can be used in engines for aeration or boilers for digester and building heat. Digester operation requires temperature maintained at 95° Fahrenheit. Heat exchangers were installed to recover heat from the engines to preheat boiler water to reduce energy used to heat digesters and buildings. Future goals are to reclaim more energy from wastewater operations and to work towards the goal of energy independence sometime in the future.

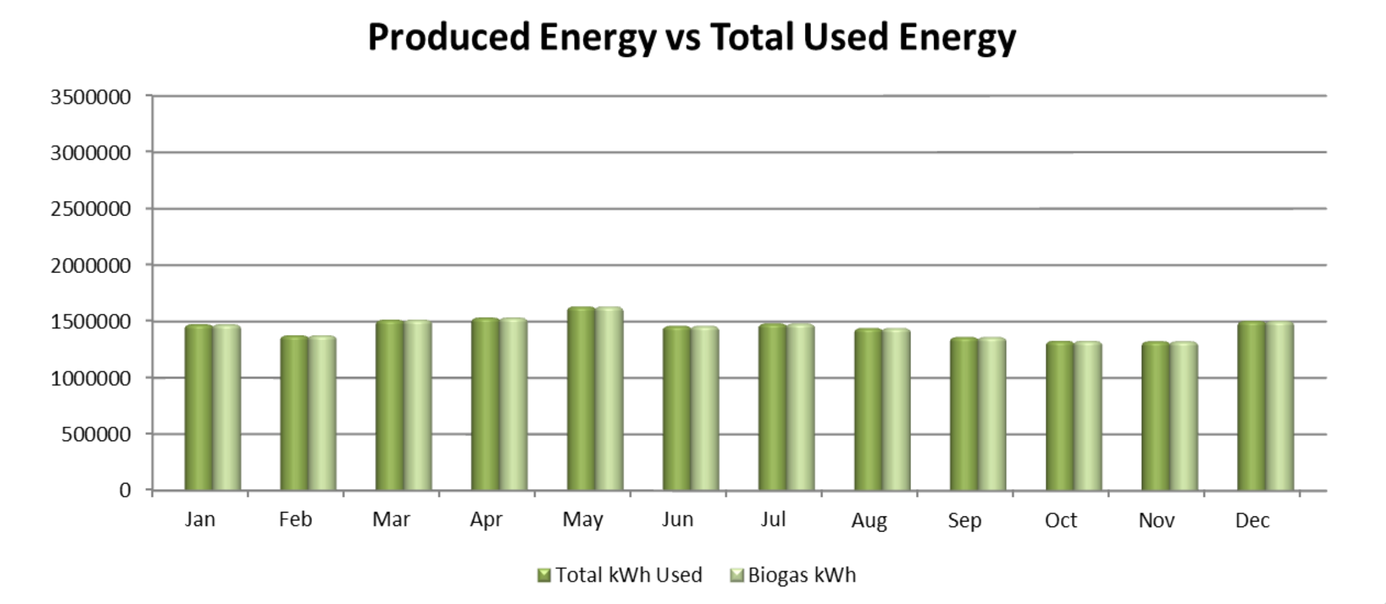
Biogas Monthly Production and Use

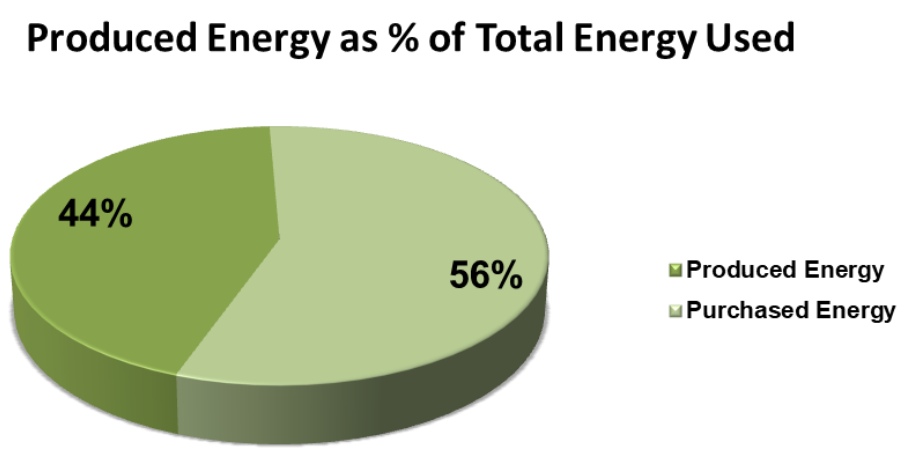
	Average Daily Values (Ft^3)				Gas to Boilers	Gas to Engines	Total Gas to Flare	Dig Gas Produced
	Dig A	**Dig B**	**Dig D**	**Dig E**				
Jan	61,745	39,877	47,238	42,995	21,492	169,094	96	180,816
Feb	54,710	44,040	46,145	46,346	38,132	138,642	16	175,092
Mar	61,710	50,226	54,234	46,669	29,559	166,656	0	197,714
Apr	63,251	44,821	57,433	46,843	38,414	159,315	30	197,760
May	59,289	47,171	57,349	44,919	31,384	168,066	1,315	195,799
Jun	53,292	44,457	52,842	49,572	8,852	171,951	783	183,168
Jul	53,543	41,758	56,396	44,966	6,387	178,126	317	185,778
Aug	47,900	43,718	42,187	46,417	7,655	153,125	0	164,100
Sep	42,253	45,908	35,294	46,433	5,520	146,272	0	151,981
Oct	45,693	45,046	38,252	42,685	31,813	123,411	0	154,942
Nov	45,991	40,476	39,634	40,410	35,140	120,676	0	147,674
Dec	53,979	44,901	46,544	17,685	43,371	143,725	28	171,111
AVG	**53,613**	**44,367**	**47,796**	**42,995**	**24,810**	**153,255**	**215**	**175,495**

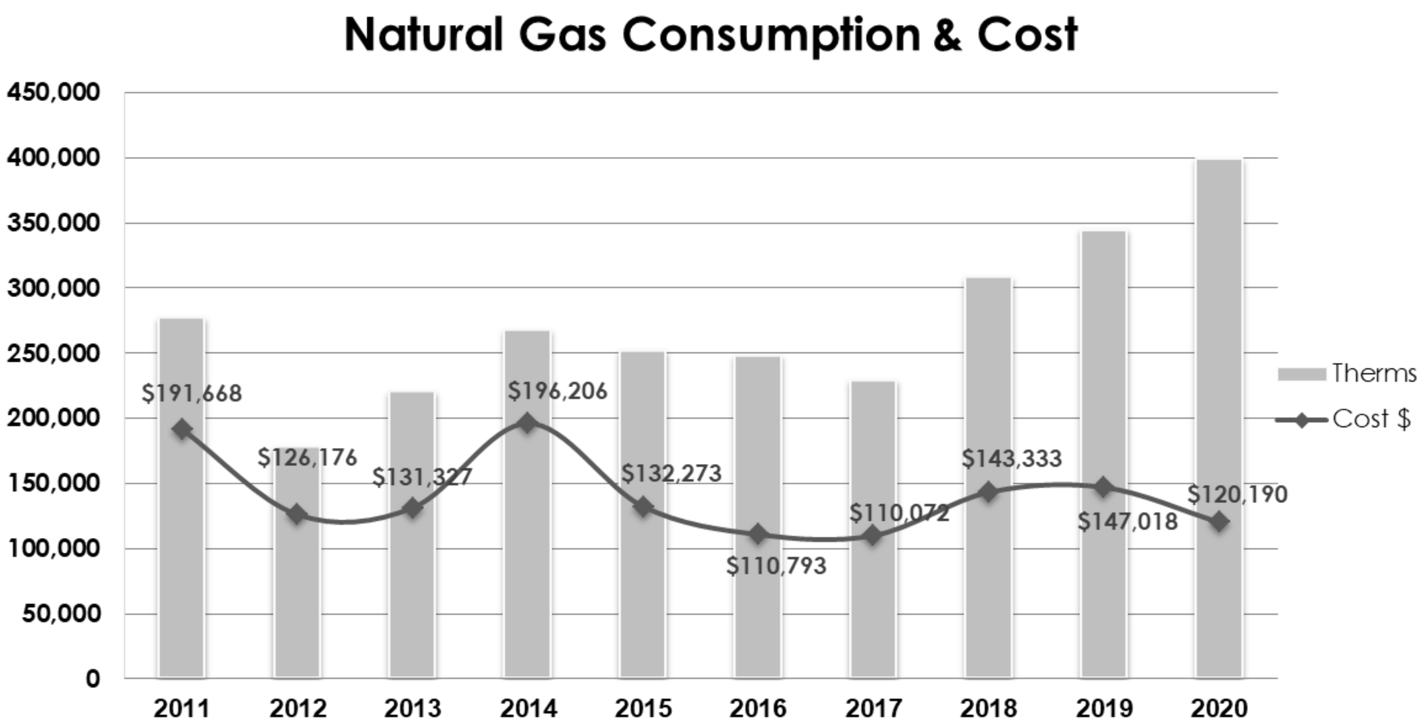


Plant Water & Energy Consumption

Month	100 CF Water	Cost $ Water	Natural Gas Therms	Cost $ Nat. Gas	Conversion Nat Gas Therms to kWh	Electric kWh	Cost $ Electricity	Biogas kWh	Total kWh Used	% Energy Produced	kW Peak Demand
Jan			36,870	$17,374	1,080,291	234,668	$19,132	1,532,022	2,846,981	**54**	1,118
Feb			39,270	$16,473	1,150,611	632,778	$52,567	1,359,245	3,142,634	**43**	1,160
Mar	29,137	$60,605	32,030	$12,628	938,479	542,216	$48,947	1,564,233	3,044,928	**51**	1,247
Apr			24,190	$8,865	708,767	670,071	$56,233	1,522,159	2,900,997	**52**	1,316
May			17,910	$5,715	524,763	758,582	$67,430	1,582,745	2,866,090	**55**	1,796
Jun	29,587	$63,612	10,210	$3,294	299,153	590,239	$63,733	1,428,427	2,317,819	**62**	1,693
Jul			7,440	$2,422	217,992	653,363	$70,217	1,497,271	2,368,626	**63**	1,631
Aug			10,570	$3,635	309,701	635,990	$69,361	1,361,464	2,307,155	**59**	1,630
Sep	28,862	$62,342	17,580	$6,741	515,094	610,032	$53,831	1,267,773	2,392,899	**53**	855
Oct			28,500	$9,933	835,050	553,016	$48,838	1,329,671	2,717,737	**49**	1,026
Nov			31,500	$14,044	922,950	535,434	$51,884	1,290,056	2,748,440	**47**	1,488
Dec	25,797	$61,139	42,590	$19,066	1,247,887	579,535	$53,577	1,512,051	3,339,473	**45**	1,482
TOTAL / AVG.	**113,383**	**$247,698**	**298,660**	**$120,190**	**8,750,738**	**6,995,924**	**$655,750**	**12,257,435**	**28,004,097**	**44**	**1,370**






Natural Gas Consumption & Cost
450,000
400,000
350,000
300,000
250,000
200,000
150,000
100,000
50,000
0
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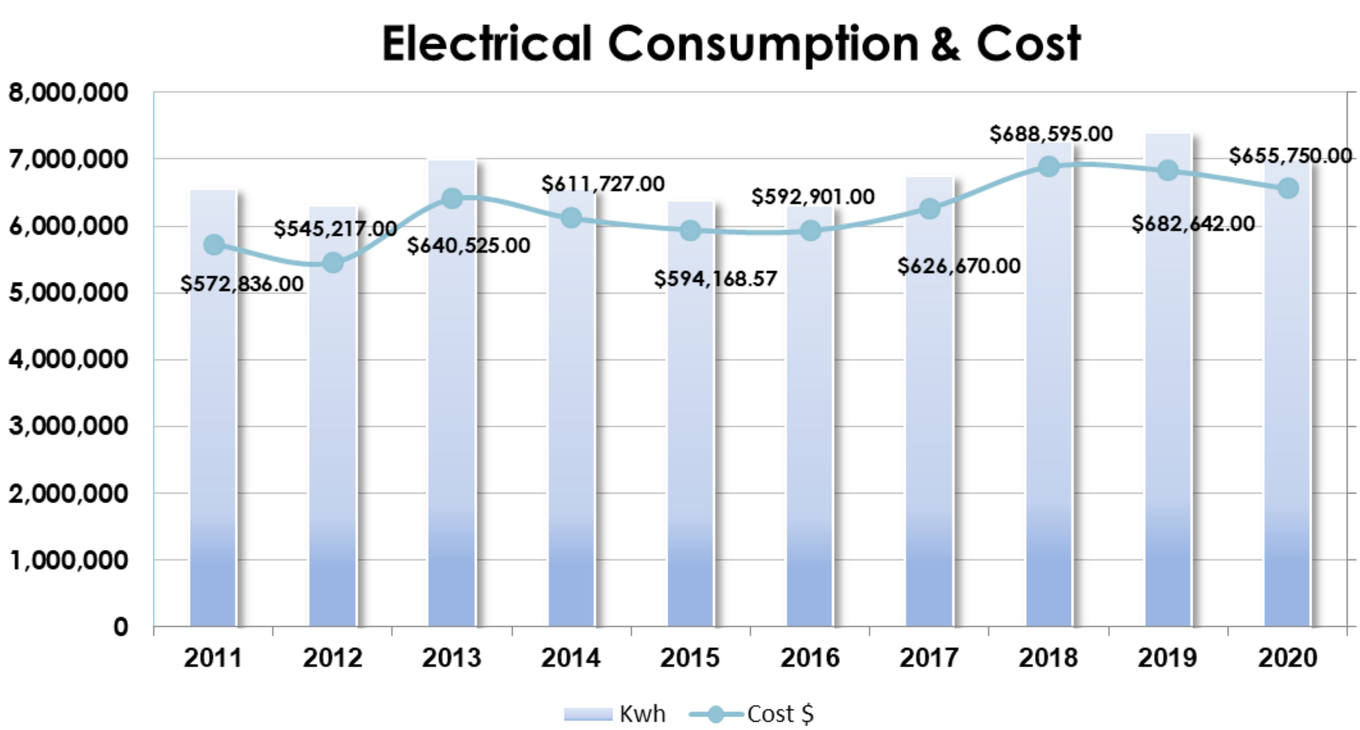
$126,176
$131,327
$196,206
$132,273
$110,793
$110,072
$143,333
$147,018
$120,190
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Therms
Cost $


Electrical Consumption & Cost
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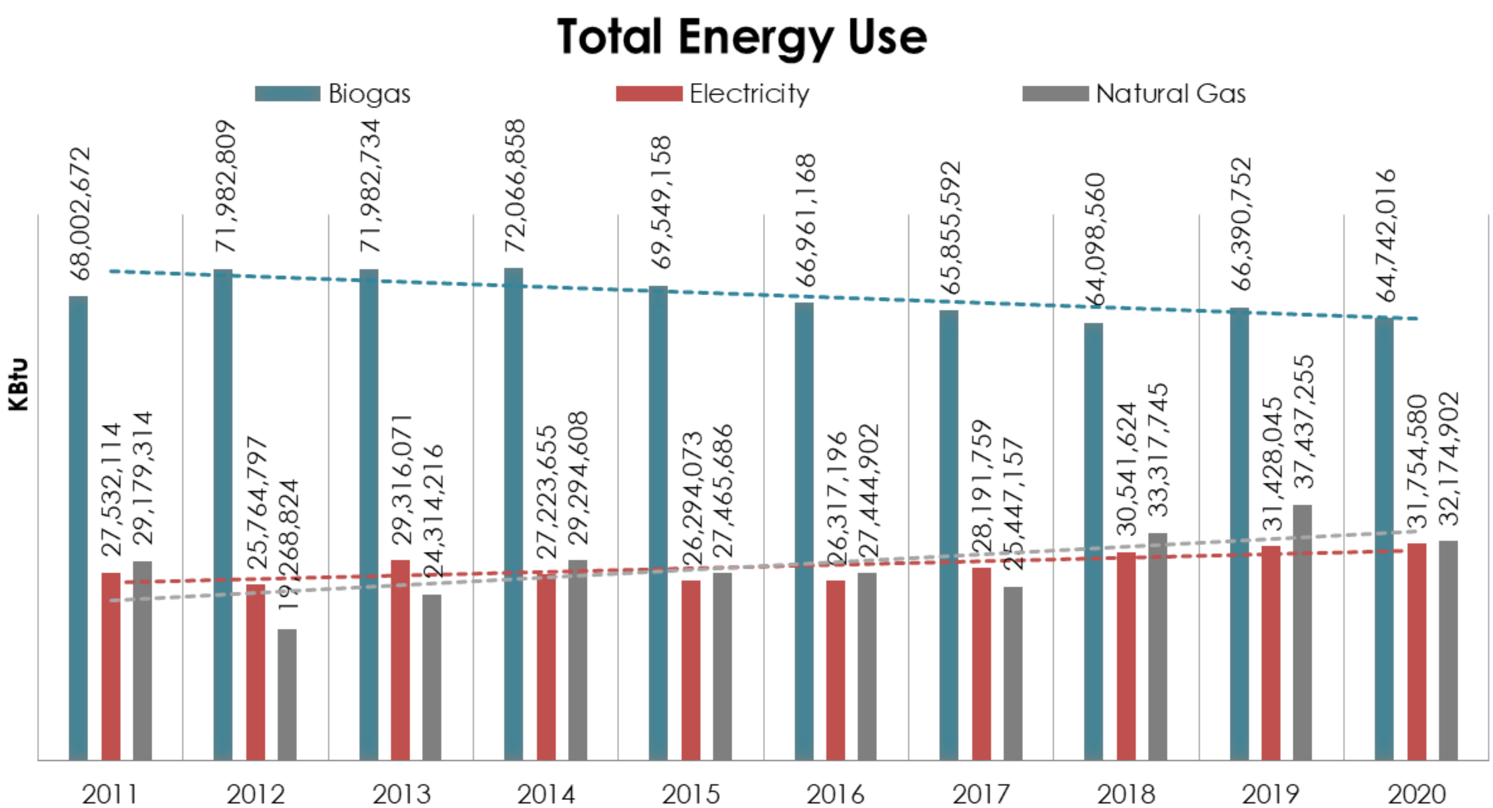
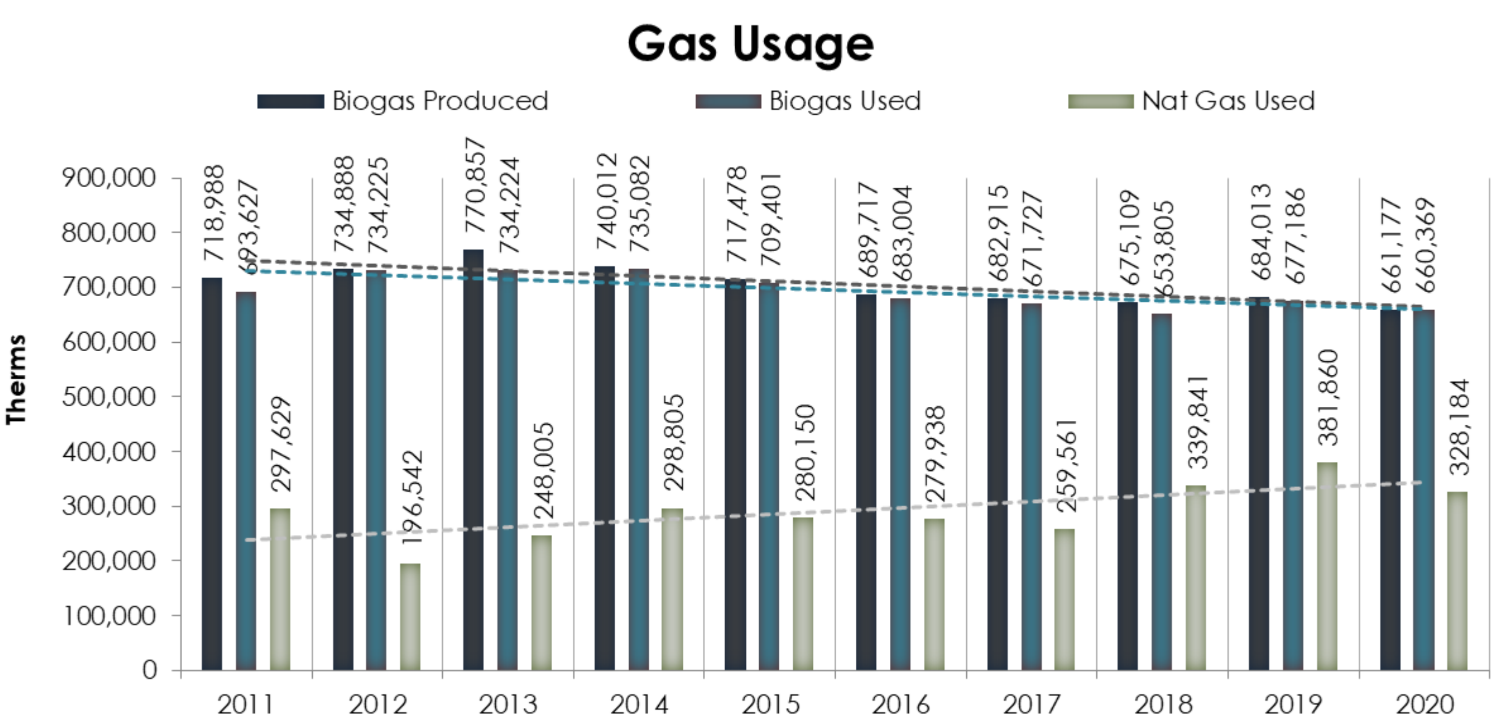
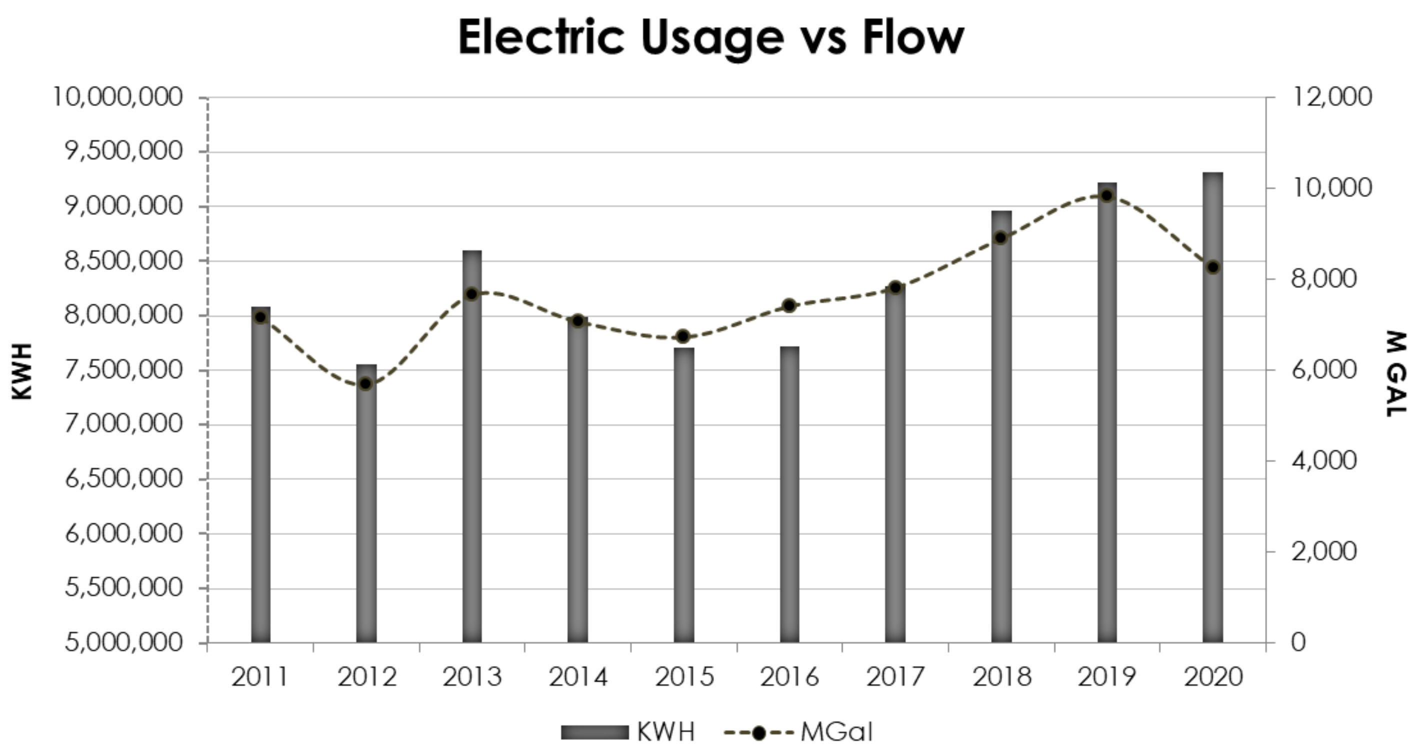
7,000,000
6,000,000
5,000,000
4,000,000
3,000,000
2,000,000
1,000,000
0
$572,836.00
$545,217.00
$640,525.00
$611,727.00
$594,168.57
$592,901.00
$626,670.00
$688,595.00
$682,642.00
$655,750.00
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
Kwh
Cost $

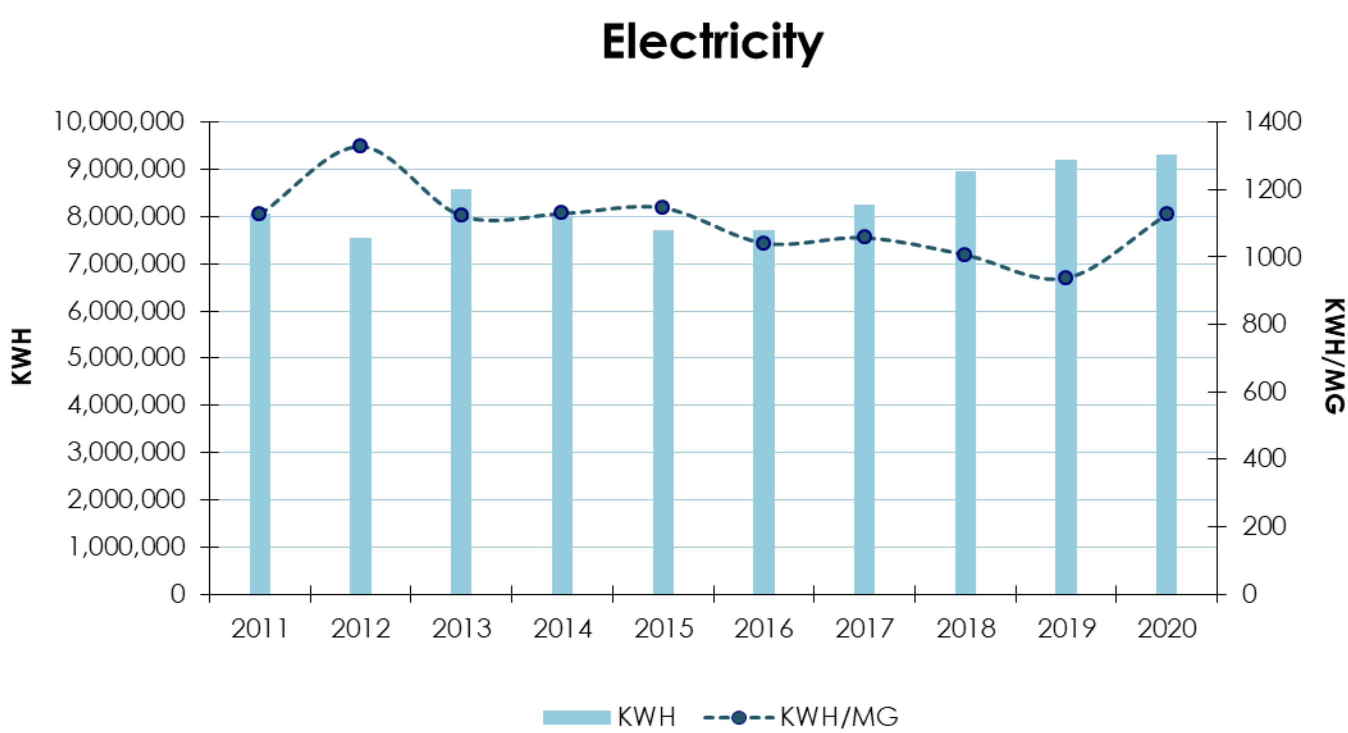
Utility Total Energy Use, Gas Usage





Electric Usage vs. Flow & Utility Electricity





LABORATORY

Laboratory

The Racine Wastewater Treatment Plant laboratory is a WDNR certified laboratory, providing analytical support for regulatory compliance, plant process control, the Industrial Pretreatment Program and Hauled Waste monitoring. Certification is maintained with annual proficiency testing and an on-site audit every 3 years.

The laboratory staff comprises the Laboratory Director, two chemists and two technicians. All personnel hold a bachelor's degree in biology, chemistry or environmental science and are WDNR certified operators in the laboratory subcategory. The Laboratory Director is responsible for oversight of all laboratory functions, standard operating procedures (SOPs), submission of monthly eDMRs and assisting in preparation of the annual biosolids management report. The Director also serves as quality assurance and chemical hygiene officer. Laboratory staff responsibilities include wet chemistry, microbial, and metals analyses, instrument preventative maintenance, data management & interpretation and database traceability. The staff undergoes regular training to enhance their analytical skills and wastewater related knowledge.

The Racine Wastewater Laboratory scope of accreditation includes biochemical oxygen demand (BOD), total suspended solids (TSS), total phosphorus (TP), ammonia (NH3), total kjeldahl nitrogen (TKN), cyanide (CN), hardness, metals and mercury. Accreditation extends to solid matrices (e.g. biosolids – cake sludge) on a reduced list of parameters. Additional routine testing performed in-house includes pH, conductivity, chlorine, volatile acids, alkalinity, water extractable phosphorus (WEP), volatile solids (VS), fecal coliforms and E. coli. Methodology including oxygen demand assays, gravimetry, titrimetry, colorimetry, optical emission spectroscopy and cold vapor atomic absorption are used to quantify unknowns.

Typical samples include those collected throughout the plant and collection system. Plant samples are mandated in the Utility's WPDES permit; others serve process control purposes. Collection system samples are largely industrial users and outlying communities; data serves to calculate fees, local limits and evaluate compliance with the industrial pretreatment program. Samples of hauled waste are monitored to calculate fees and evaluate suitability of treatment. Periodically the laboratory volunteers to participate in or initiate studies in preparation for future regulation, demand, etc.

Automated BOD Analyzer

Several permit related parameters are beyond the scope of current capabilities. Influent and effluent mercury is monitored monthly in accordance to the Mercury Pollutant Minimization Program (PMP). These samples are subcontracted to a Wisconsin certified commercial laboratory with lower detection limits. Also recorded on the eDMR, but no limit enforced, is a quarterly sample from Lake Michigan for arsenic. Similarly, samples are subcontracted for the lowest possible detection limit. Once annually, samples of final effluent are subcontracted to a certified laboratory for whole effluent toxicity (WET) testing. A sample of cake sludge is analyzed for polychlorinated biphenyls (PCBs) once per permit cycle.

In support of the Utility's greater mission, it is the laboratories objective to produce data of the highest quality, uphold a standard of excellence with integrity, and responsibly manage the investment by those we serve.

PRETREATMENT

PRETREATMENT REVIEW

In 2020, the Pretreatment Department was merged into Field Operations. The Pretreatment Department is responsible for a variety of tasks including dye testing, flow monitoring within the collection system, televising sewer mains, conducting FOG visits, conducting dental inspections and administering the Mercury Pollution Prevention Program, groundwater permitting, responding to sewer calls, and administering the Industrial Pretreatment Program. In relation to the Industrial Pretreatment Program, the Pretreatment Department is also responsible for conducting industrial inspections, annual and semi-annual DNR reporting, collecting wastewater samples from all regulated industries, industries of interest, and outlying communities, watching for changes in conditions of industrial discharge, maintaining contact with industries, data handling, compliance evaluations, and enforcement actions. Each industry in the program is inspected at least once per year. The inspection process includes a walk-through of industrial processes and discharges, inspection of the sample site, notation of changed conditions, and review of spill/slug plans, toxic organic management plans (if required) and hauled waste records. Other site-specific inspections are scheduled if necessary. Industries that have the potential to be included in the Pretreatment Program, as well as other industries that are under permitting consideration are also inspected as needed.

The Industrial Pretreatment Program is a federally mandated, self-funded program which regulates industrial wastewater discharges in Racine and surrounding communities. In 1984, the Utility became the delegated control authority to regulate industrial discharges to the Racine Wastewater Utility. The Utility regulates industries that fall under several federally mandated categorical discharge limits. There are also permitted industries which are categorical but discharge less than 100 GPD of process waste; these are regulated as Non-Significant Categorical Industrial Users (NSCIUs).

Also included in the Pretreatment Program are industries serviced by the Racine Wastewater Utility which do not fall into the Federal list of categorical industries. These industries are non-categorical and are therefore regulated by the City of Racine local wastewater discharge ordinance. The local industries included in the Industrial Pretreatment Program are those industries that have the potential to impact the wastewater treatment plant processes or by-products. There are permitted industries which do not discharge any process waste and are not categorical, but have the potential to exceed local limits if discharge were to occur. These industries must provide the Utility with a "No Discharge Statement" every six months to maintain their status. There are also industries designated as *Minimal Discharge*. These industries seldom discharge or the discharge volume is minimal. These industries self-sample and the Utility inspects them annually. A listing of the industries divided by discharge category follows this summary.

A sampling schedule is created based upon industrial discharge status and compliance. To fund the program, regulated industries are charged annually for a discharge permit and semi-annually for all sampling and analysis that the Utility undertakes. The Industrial Pretreatment Program was audited by the Wisconsin DNR in early 2020. Each industry is issued a permit which has a term of less than five years and is modified as needed. Modifications may include changing sample locations, addition or deletion of discharge processes, changing from categorical to local (or the reverse), change in discharge volume, or change in ownership. Two industries were removed from the program in 2020; one due to closure and the other removed all processes of concern. One industry removed categorical processes and their permit was therefore modified to be regulated under local limits. And one industry was re-classified and permitted under the groundwater discharge program rather than the industrial pretreatment program. The estimated total person hours used to implement the Industrial Pretreatment Program in 2020 was 3,073 hours. The estimated total cost of the program was $169,542.

In 2020, there were thirty-eight (38) permitted industries in the Industrial Pretreatment Program. There were eighteen (18) categorical and twenty (20) non-categorical industries. Industrial categories regulated in 2020 include: ten Metal Finishing, two Electroplating/Metal Finishing, three Metal Molding and Casting, one *Soap and Detergent Manufacturing* and one *Pesticide Formulating*, *Packaging and Repackaging* (PFPR). These categorical industries have specific numerical limits set by the Federal Government for pollutants characteristically found in their process wastewater discharge. The parameters regulated include oil & grease, organic chemicals, cyanide and various metals. There was one no-discharge permitted industry; three minimal discharge permitted industries, and five NSCIU permitted industries. Six industries were investigated for inclusion into the pretreatment program. None of these were found to perform categorical processes but are still being monitored for possible inclusion into the program.

There were eleven incidents of noncompliance during the year. Violations included exceedance of established limits in pH, cyanide, oil and grease, and zinc; three of these met the criteria of significant non-compliance (SNC) during 2020. Violations included a failure to pay annual permit fee and two failure to pay sampling/analysis fees, one unintentional improper sampling, one failure to monitor all pollutants as required and one failure to notify the Utility within 24 hours of a violation. There were no treatment plant upsets and the plant did not exceed any discharge limits as a result of industrial noncompliance. All industries that are in noncompliance are required to investigate the cause of the noncompliance, provide the Utility a written response explaining the cause and how the noncompliance will be resolved, and take additional samples to show that their discharge is back into compliance. Continuing noncompliance results in increased enforcement.

The Racine Wastewater Utility continues to encourage pollution prevention by distributing information, attending training seminars, and reminding industries about the importance of reduce/reuse/recycle. The Utility also continues to promote mercury recycling and reduction in the Racine area through their Mercury Pollution Prevention Plan.

PERMITTED INDUSTRIAL USERS 2020

METAL FINISHING

BRP USA
CHROMIUM, INC
CNH INDUSTRIAL AMERICA
CREE LIGHTING–IDEAL INDUSTRIES LIGHTING
D & D INDUSTRIAL FINISHING- PLANT #1
JENSEN METAL PRODUCTS (NSCIU)
KOLAR ARMS/LETSCH MANUFACTURING
POWDER FINISHERS
SHURPAC, INC
SUPERIOR INDUSTRIAL CORPORATION
THERMAL TRANSFER PRODUCTS

ELECTROPLATING – JOB SHOPS

WISCONSIN PLATING WORKS-CARROLL ST
WISCONSIN PLATING WORKS – STANNARD ST

METAL MOLDING & CASTING

PREMIER ALUMINUM (NSCIU)
QUICK CABLE CORPORATION (NSCIU)
WOODLAND/ALLOY CASTING (NSCIU)

PESTICIDE FORMULATING, PACKAGING AND REPACKAGING

SC JOHNSON & SON – WAXDALE FACILITY

SOAP AND DETERGENT MANUFACTURING

DW DAVIES (NSCIU)

NON-CATEGORICAL

A & E MANUFACTURING
ANDIS COMPANY
BUTTER BUDS FOOD INGREDIENTS
D & D INDUSTRIAL FINISHING PLT #2 (ND)
DIVERSEY (MD)
FEDERAL HEATH
GREAT NORTHERN CORPORATION
IN-SINK-ERATOR (H)
KHP LANDFILL (REPUBLIC SERVICES)
MIDLAND PACKAGING AND DISPLAY-
(GREEN BAY PACKAGING-MIDLAND DIV)
MODINE MANUFACTURING
PUTZMEISTER AMERICA
RACINE WATER UTILITY
SC JOHNSON – HOWE STREET FACILITY
STERICYCLE (HW)
(E.C.) STYBERG ENGINEERING
TWIN DISC – RACINE STREET (H) (MD)
TWIN DISC – 21st STREET (H)
WE ENERGIES-GASLIGHT POINT REMEDIATION
WISCONSIN SCREEN PROCESS (MD)

ND = No Discharge
MD = Minimal Discharge
NSCIU = Non-Significant Categorical Industrial User
H = Process Waste Hauled Off Site
HW = Hauled Waste to Plant

SUMMARY OF TREATMENT PLANT ANALYTICAL MERCURY DATA

2019

Influent			Effluent				Biosolids		
Date 2019	Conc. ng/L	Test Method	Date 2019	Conc. ng/L	Test Method	% Removal	Date 2019	Conc. mg/kg	Test Method
01/08/19	7.6	245.7M, Rev 2.0	01/08/19	1.3	EPA 1631E, 2002	82.9	01/08/19	1.2	SW 846 7471B
02/06/19	10	245.7M, Rev 2.0	02/06/19	5.2	EPA 1631E, 2002	48.0	02/06/19	0.60	SW 846 7471B
03/05/19	25	245.7M, Rev 2.0	03/05/19	2.2	EPA 1631E, 2002	91.2	03/12/19	0.5	SW 846 7471B
04/02/19	10	245.7M, Rev 2.0	04/02/19	1.30	EPA 1631E, 2002	87.0	04/02/19	0.93	SW 846 7471B
05/08/19	6.8	245.7M, Rev 2.0	05/08/19	0.95	EPA 1631E, 2002	86.0	05/08/19	0.77	SW 846 7471B
06/11/19	15	245.7M, Rev 2.0	06/11/19	0.99	EPA 1631E, 2002	93.4	06/11/19	0.71	SW 846 7471B
07/10/19	19	245.7M, Rev 2.0	07/10/19	1.20	EPA 1631E, 2002	93.7	07/10/19	0.55	SW 846 7471B
08/06/19	42	245.7M, Rev 2.0	08/06/19	1.2	EPA 1631E, 2002	97.1	08/06/19	0.69	SW 846 7471B
09/11/19	21	245.7M, Rev 2.0	09/11/19	0.83	EPA 1631E, 2002	96.0	09/11/19	1.2	SW 846 7471B
10/08/19	7.3	245.7M, Rev 2.0	10/08/19	1.4	EPA 1631E, 2002	80.8	10/08/19	0.66	SW 846 7471B
11/06/19	11	245.7M, Rev 2.0	11/06/19	1.8	EPA 1631E, 2002	83.6	11/06/19	0.54	SW 846 7471B
12/10/19	10	245.7M, Rev 2.0	12/10/19	1.1	EPA 1631E, 2002	89.0	12/10/19	0.92	SW 846 7471B
Influent Average	15.4		Effluent Average	1.6		Removal 85.7%	Biosolids Average	0.77	

2020

Influent			Effluent				Biosolids		
Date 2020	Conc. ng/L	Test Method	Date 2020	Conc. ng/L	Test Method	% Removal	Date 2020	Conc. mg/kg	Test Method
01/08/20	5.4	245.7M, Rev 2.0	01/08/20	1.0	EPA 1631E, 2002	81.5	01/08/20	0.68	SW 846 7471B
02/04/20	7.2	245.7M, Rev 2.0	02/04/20	1.3	EPA 1631E, 2002	81.9	02/04/20	0.41	SW 846 7471B
03/04/20	8	245.7M, Rev 2.0	03/04/20	0.7	EPA 1631E, 2002	91.3	03/04/20	0.27	SW 846 7471B
04/07/20	5.6	245.7M, Rev 2.0	04/07/20	0.64	EPA 1631E, 2002	88.6	04/07/20	0.38	SW 846 7471B
05/06/20	14	245.7M, Rev 2.0	05/06/20	0.92	EPA 1631E, 2002	93.4	05/06/20	0.41	SW 846 7471B
06/09/20	21	245.7M, Rev 2.0	06/09/20	0.76	EPA 1631E, 2002	96.4	06/09/20	0.32	SW 846 7471B
07/08/20	24	245.7M, Rev 2.0	07/08/20	0.69	EPA 1631E, 2002	97.1	07/08/20	0.47	SW 846 7471B
08/04/20	27	245.7M, Rev 2.0	08/04/20	1.3	EPA 1631E, 2002	95.2	08/04/20	5.8	SW 846 7471B
09/02/20	29	245.7M, Rev 2.0	09/02/20	0.77	EPA 1631E, 2002	97.3	09/02/20	0.57	SW 846 7471B
10/06/20	20	245.7M, Rev 2.0	10/06/20	1.4	EPA 1631E, 2002	93.0	10/06/20	0.67	SW 846 7471B
11/04/20	18	245.7M, Rev 2.0	11/04/20	0.83	EPA 1631E, 2002	95.4	11/04/20	0.39	SW 846 7471B
12/01/20	32	245.7M, Rev 2.0	12/01/20	0.77	EPA 1631E, 2002	97.6	12/01/20	0.39	SW 846 7471B
Influent Average	**17.6**		**Effluent Average**	**0.9**		**Removal 92.4%**	**Biosolids Average**	**0.90**	

Is there a mercury limit in local sewer use ordinance? Yes

If yes, what is it? 0.10 mg/l

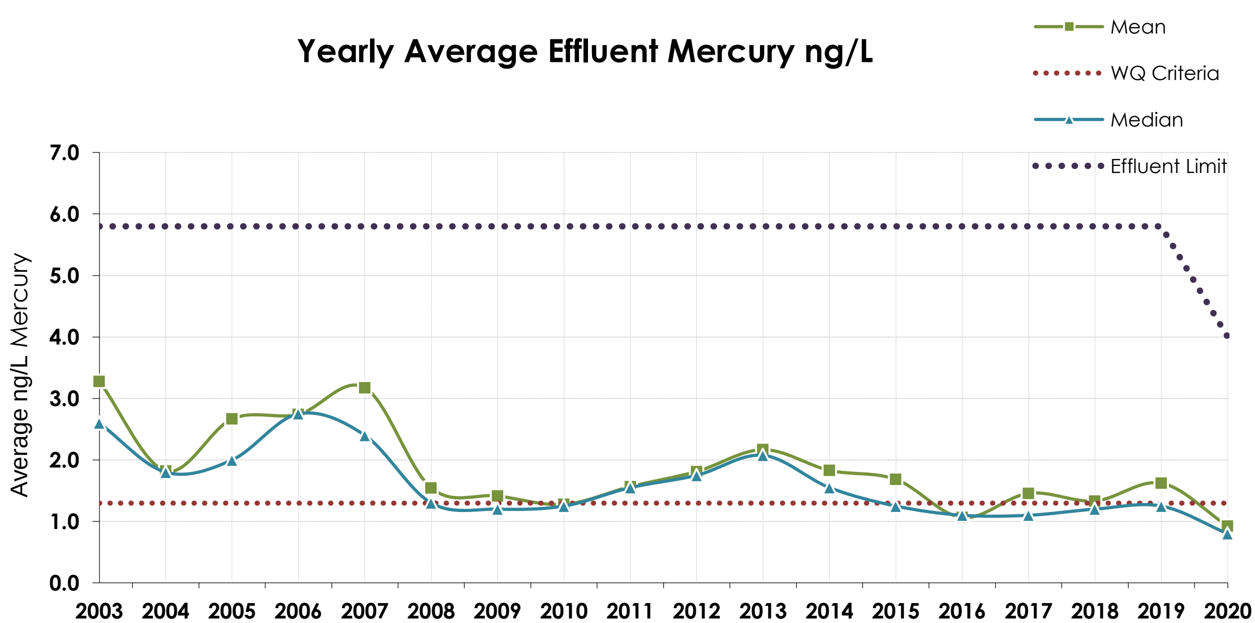
Laboratory doing the mercury analysis: *Northern Lake Service #721026*

MERCURY MINIMIZATION PROGRAM

The Racine Wastewater Utility WDNR permit number WI-0025194-07-1 required that the Utility submit annual status reports on the progress of the mercury pollutant minimization program. The current Racine WPDES permit number WI-0025194-09-0 has an effluent mercury limit of 4.0 ng/L. The goal remains to reduce mercury coming into the plant. The annual status report is now due to the WDNR by December 31 of each year. Each report covers the period from January 1 to December 31 of the current year. The initial plan was submitted in March 2006, following two years of wastewater monitoring.

The Utility continues to survey different sectors thought to contribute mercury to the waste stream. Sectors surveyed include schools, medical facilities, industries, general public and dental facilities. Contact was made with each of these sectors by mail, email and/or phone and facility contacts are updated as needed. Best Management Practices (BMPs) are used by the various mercury source sectors to reduce or eliminate mercury contributions to the wastewater. All Racine area dental facilities were required to submit the one time compliance report required by the new EPA Dental Rule. Also, dentists that place or remove amalgam dental fillings are required to have amalgam separators and to implement Best Management Practices for Dental Facilities as outlined by the American Dental Association and the new EPA Dental Rule. Health centers and schools are committed to being mercury-free. School and medical facility status is updated as needed. The Utility accepts mercury thermostats at no charge by partnering with the Thermostat Recycling Corporation (TRC). Thermostats are collected from the public at all scheduled household hazardous waste events and at the wastewater plant from area contractors. Accumulated thermostats are stored in the designated container and sent in for recycling annually.

The Utility will continue to monitor the wastewater effluent to assess progress towards the Water Quality Limitation. Annual reporting of the Mercury PMP to the WDNR will evaluate progress. Influent and Effluent levels have decreased since 2003.



Mercury is measured in ng/l (nanograms per liter) or PPT (parts per trillion); the units are interchangeable. Influent and effluent levels have decreased since 2003.

Community Mercury PMP Score

Facility Name: Racine Wastewater Utility Report Date: Dec 21, 2020

Wastewater Sectors (Should be included in Mercury PMP Plan):

Sector	Sector Score	X	Weighting Factor*	=	Weighted Sector Score
A: Medical (from Form 4C)	100	X	(0.15)	=	15.0
B: Dental (from Form 5C)	100	X	(0.50)	=	50.0
C: School (from Form 6C)	100	X	(0.15)	=	15.0
D: Industry (from Form 7C)	100	X	(0.20)	=	20.0
Total Wastewater Sectors Score					100.0

*Weighting factor is the relative fraction of mercury to POTW that is attributable to each sector. If you know what fraction comes from each sector you can adjust accordingly. The weighting factors must add up to 1. Use default values in parenthesis above if unknown.

Other Community Sectors (May be included in Mercury PMP Plan):

Sector	Sector Score	X	Weighting Factor**	=	Weighted Sector Score
A: General Public (from Form 8A)	100	X	(0.1)	=	10
B: HVAC (from Form 8B)	0	X	(0.1)	=	0
C: Auto Switch (from Form 8C)	0	X	(0.1)	=	0
D: Fluorescent Bulb (from Form 8D)	50	X	(0.1)	=	5
Total Other Community Sectors Score					15.0

**Weighting factor is between 0.0 and 0.1. Wisconsin's weighting factor is 0.1.

Other Credits (May be included in Mercury PMP Plan):

Other	Score	X	Weighting Factor**	=	Weighted Score
A: Historical (from Form 9A)	23	X	(0.1)	=	2.3
B: Extra-Jurisdictional (from Form 9B)	17	X	(0.1)	=	1.7
Total Other Credits Score					4.0

**Weighting factor is between 0.0 and 0.1. Wisconsin's weighting factor is 0.1.

Community Mercury PMP Score:

	Total Score
Sum of Wastewater Sectors, Other Community Sectors and Other PMP Credits	119.0

COLLECTION SYSTEM & LIFT STATIONS

The Utility continues to focus on the Capacity, Management, Operations and Maintenance Program (CMOM). The CMOM Program has been developed by the United States Environmental Protection Agency and the Wisconsin Department of Natural Resources. In accordance with the WDNR, as of August 1, 2016 anyone owning a collection system in the State of Wisconsin must have a CMOM. The goal of the program is to develop guidelines for the operation and maintenance of wastewater collection systems. The Utility developed their first CMOM in 2005; it was updated in 2021 to meet the current requirements of the WDNR.

In February of 2010, the Utility became a member of Diggers Hotline. The Field Operations staff spent many hours establishing areas of concern and relaying them to Diggers Hotline. The Utility then contracted with USIC Locating Services in order to establish the most cost effective manner of locating and marking our underground infrastructure.

The Utility continues to implement flow studies within the collection system, in an attempt to pinpoint infiltration and inflow. In 2020, we continued to monitor flow in different areas within the City of Racine covering about 26,293 linear feet of sewer main.

The Utility implemented an interceptor closed circuit televising (CCTV) program in 2010. By 2017, all 252,084 linear feet of Utility owned interceptor sewers ranging in size from 6 inch to 84 inch were televised. When minor defects or obstructions were discovered, they were dealt with immediately. Larger defects were assessed and scheduled for repair in a timely manner. The Utility will continue to contract CCTV work in aging interceptors.

In 2014, the Utility purchased a CCTV system and installed it in our Industrial Sampling truck at a cost of $102,550. The system is used to assess emergency situations in the sewer cleaning operation as well as televising trouble spots within the collection system. In 2020, the crew televised 5,240.5 linear feet of interceptors and 13,188.5 linear feet of collector sewer mains within the collection system.

In 2008, the Utility formed a Technical Advisory Committee. The Committee members represent the Wastewater Utility and outlying communities. They were selected for their expertise and understanding of the Racine Wastewater Utility system. The Committee continues to work on immediate and long term issues in the system, cost-sharing between municipalities, understanding the sewer agreement, and development of strategies for streamlining future projects. The Storage Optimization Study was completed in late 2009. This study identified $193 million in improvements to the regional collection system to mitigate bypassing and backups. The improvements would be completed in stages over a period of time to accommodate 2035 peak flows anticipated during a 40 year storm event.

Covid had an impact on everyone this year and Field Operations was no exception. Many projects were put on hold but a 39 inch interceptor was redirected and relayed in 2020 as a new 42 inch interceptor in preparation for a proposed development project near 6th Street and Water Street.

The sewer maintenance crew continues to do an outstanding job of maintaining the City of Racine's 203 miles of sewer mains that make up the collection system, as well as the Utility owned 52 miles of interceptors and force mains. Despite all that 2020 brought our way, the crew still cleaned 362,743.0 linear feet (68.7 miles) of the 255 miles of sewer in the collection system. The crew used our root saws on 53,827.0 linear feet of sewer mains, and responded to 172 sewer calls;

all but 2 of the calls were lateral problems requiring attention from the homeowners. They also responded to 6 requests for assistance from other City departments.

The Lift Station Crew does an exceptional job maintaining the Utility's lift stations and storage basins. The crew also maintains the lift stations owned by the City of Racine's Parks Department.

It should be noted that the Racine Wastewater Utility operates and maintains the regional sanitary sewer infrastructure in the area of Racine. Local municipalities, including the City of Racine, have the responsibility of maintaining their own collection systems that feed into the Utility system.

LIFT STATION #1

736 Washington Ave.

The lift station was originally constructed in 1931. It is the largest station in the collection system, providing half of the treatment plant's flow. The East side of lift station #1 was constructed in 1989, doubling the capacity of the original station. In 2004, the West side was completely updated with new pumps, controls, and a stainless steel crawler barscreen. In 2005, the East pumps were reconditioned and the variable frequency drives were replaced. In 2005, the Utility also added a 2000kW, 480V diesel powered generator and building. In 2006, the aging bar screen on the East side was replaced with a stainless steel crawler bar screen. In 2018, the level control pump system was replaced by a state of the art programmable control system designed and installed by Utility staff.

LIFT STATION #2

2022 Spring St.

Originally constructed in 1931, the station was modified in 1965. A third pump was added in 1970. Area growth required an additional upgrade. In 1994 the station was redesigned, increasing the capacity to 9.072 MGD. An additional force main and dedicated stand-by generator was added at that time. In 2004, the Utility completed construction of an emergency bypass pumping station. The 2-Flygt pumps have the ability to pump 2.880 MGD directly to the storm water system, thereby preventing basement backups in the area. In 2009, the 12 inch force main from the station was replaced. In 2010, the Utility completed the upgrade of the standby generator. The generator output was increased from 100kW to 250kW, 480V. As part of the project, we improved the flood protection of the station. In 2017 the Utility re-laid the interceptor upstream of the lift station; 1200 linear feet of 24 inch pipe was increase to 42 inch in preparation for a storage tank to be built in Brose Park which is adjacent to the lift station. The aging pump controls (1990) were upgraded in 2017. The electro mechanic controls were replaced with state of the art programmable logic controllers. In June of 2018, construction of the storage basin adjacent to the lift station started; the basin project was completed in 2020.

LIFT STATION #3

1004 Riverbrook Dr.

The station was originally constructed in 1984. Upgrade of this station's pumps occurred in 1996. The 1.6 hp submersible pumps were converted to 2.4 hp. In 2010, the station received a complete upgrade. A walk in control structure with an arc flash safe control panel was installed. The panel uses VFD motor starters in order to convert 1-phase to 3-phase power. The 3 hp pumps have greater capacity, as well as improved efficiency and reliability. This upgrade increased the station capacity from 0.430 MGD to 0.648 MGD.

LIFT STATION #4

6 - 5th St.

The original lift station was constructed in 1967 as a pneumatic ejector station. This station was moved and upgraded in 1987 in conjunction with the Festival Site development project. A "package can" station, Lift Station #4 contains two 7.5 hp pumps with a capacity of 1.82 MGD. In 2014, the Utility replaced the control panel which was located underground in the "can". The new walk in structure is located in the adjacent parking ramp, and has an arc flash safe control panel. The station serves Lakeshore Towers, the Festival site, and Pershing Park.

LIFT STATION #5

1530 - 13th St.

The lift station was originally constructed in the summer of 1955 as a pneumatic ejector station. In 1971 it was converted to a wet well and submersible pumps were installed. In 1989 a $165,000 lift station upgrade and force main reconstruction project replaced the existing station. The two new 24 hp submersible pumps and redirected force main solved wet weather overload problems at lift stations #5 and #10. The project was completed in January of 1990. In 2007, the Utility replaced one of the original pumps; the old pump will remain in service as a spare. In 2015, the Utility replaced the control panel which was located on the parkway adjacent to the station. The new walk in structure is located next to the standby generator and has an arc flash safe control panel. This station serves a 10-block area in the vicinity of the station, and its new capacity is 2.06 MGD.

LIFT STATION #6

3236 Drexel Ave.

The original design in 1955 was a pneumatic system that called for two-150 gallon ejectors. In 1970, two more ejectors were added to handle the growth of the area. This station had a major renovation in 1996; the ejectors were eliminated and replaced with centrifugal pumps. The pumps are driven by 15 hp motors. This upgrade increased the capacity of the station from 2.08 MGD to 3.02 MGD. Additional capacity can easily be obtained by simply increasing the size of the impeller. The automatic transfer switch for the stand-by generator was replaced in 2005. In 2006, the Utility replaced an aging stand-by generator with an 85kW natural gas powered generator. On April 9, 2011 the utility discovered the 12 inch force main was leaking under the building. An emergency repair was implemented, and we replaced the first 85 feet of force main from the building to the street. In July of 2018 the rest of the aging 12 inch ductile iron force main was replaced with a 14 inch C900 PVC force main.

LIFT STATION #7

45 Steeplechase Dr.

This station was originally constructed in April of 1958 as a pneumatic ejector station. The station was converted to a wet well with submersible pumps in April of 1999. As part of this upgrade, a stand-by generator was added for operation during power emergency situations. In 2016 the control panel and fiberglass structure was replaced with a walk in structure and an arc flash safe control panel. The lift station has two 7.5 hp pumps with a capacity of 1.22 MGD. The aging 650 linear foot 8 inch original force main was replaced in 2019 using a new C-900 PVC pipe and increased in size to 10 inch in order to better service the Greater North Bay area.

LIFT STATION #8

3625 Rapids Ct.

A 1986 construction project combined two existing stations into one new one. One station was located on the west side of the Root River, the other on the east side dating back to 1958. The new "package can" station contains three 40 hp centrifugal pumps with total capacity of 5.25 MGD. This lift station serves several blocks on either side of Northwestern Avenue from Golf Avenue to

Highway 31. Construction included the installation of stand-by generator for emergency power. The pump control system was updated in 2006, replacing the soft starts and adding bypass circuitry that will allow the pumps to run in the event of a soft start failure. In 2012, the Utility completed an upgrade on the standby generator. The generator output was increased from 100kW to 150 kW, 480V.

LIFT STATION #9

3908 Francis Dr.

This station was originally constructed in April of 1955. The station was equipped with pneumatic ejectors and had a capacity of 0.07MGD. In the spring of 1995, the station was converted to a wet well with submersible pumps, increasing the capacity to 0.173 MGD. This lift station serves the area north of Vista Drive between Harrington Drive and Spring Valley Drive. In 2009, the 5 hp pumps were replaced with 7.5 hp pumps to increase the station's capacity during high flow situations. The 5 hp pumps will be used for spares. In 2017 the Utility replaced an aging fiberglass control building located in the parkway adjacent to the lift station wet well with a pre-fabricated building with arc flash safe control panel.

LIFT STATION #10

800 S. Memorial Dr.

The station was originally constructed in 1962. In order to increase capacity, a third pump was added to the station in 1986. In 2000, the aging pumps and control system were replaced with two higher capacity pumps. In 2005, the Utility replaced an aging stand-by generator with a 44 kV.A/240V natural gas powered generator and new automatic transfer switch. In 2008, the Utility replaced an aging KSB pump with a Fairbanks Morse Model 5442. In 2009, the Utility installed a second Fairbanks Morse pump; the existing KSB pump will remain in service as a spare or to be used in high flow situations when extra capacity is required. In 2010, the 6 inch force main and flow meter were replaced with a 10 inch force main and meter. This increased the capacity from 2.44 MGD to 3.67 MGD.

LIFT STATION #11

2750 Old Mill Dr.

The Utility took ownership of this station in November of 1993 after requested improvements were made by the previous owner. The station provides service for the residents of Old Mill Road. It is equipped with two submersible pumps and has a capacity of 0.792 MGD. In 2002, the Utility installed a dedicated stand-by generator and automatic transfer switch. In November of 2008, the Utility completed an upgrade of the station including valves, pumps, telemetry, and controls.

LIFT STATION #12

334 Parkview Dr.

The new Lift Station #12 went on-line in December 1999. This station handles the flow along the Root River on Parkview Drive. It has two 3.4 hp submersible pumps with a flow capacity of 0.346 MGD. In 2018, the aging control panel and fiberglass structure located in the parkway adjacent to the station were replaced. The new walk-in structure has an arc flash safe control panel. The pumps are now controlled by a level reading transducer and they have a backup "Fog Rod" system for additional reliability.

LIFT STATION #13

1100 N. Main St.

This station came on line in March of 2002 and handles the flow from Hamilton to Dodge Street on Main Street. The station is equipped with two 1.5 hp submersible pumps rated at 0.128 MGD.

LIFT STATION #14

3205 Michigan Blvd.

The Utility added a new lift station to the collection system in 2009. This lift station went on line September 11, 2009. The purpose of the station is to isolate homes in the area from a 36 inch interceptor that can become surcharged during high flow conditions. The station is equipped with two 5 hp pumps, each capable of pumping 500 gallons per minute. In order to protect the esthetics of the neighborhood, the station is located underground with the control panel and standby generator located at remote sites in the area.

LIFT STATION #2 STORAGE TANK

2022 Spring Street

The 2.4 million gallon Lift Station #2 Storage Tank was available for use on July 23, 2019 with final project completion in 2020. The tank will be used in high flow situations to relieve excess flow to the Root River Interceptor.

NORTH SIDE STORAGE BASIN

3026 Mt. Pleasant St.

The construction of a North side 8.4 MG storage basin was completed in 2004. This in-ground storage basin serves the Caledonia area during high flow situations. The storage basin is placed in operation during periods of high flow and emptied when flows return to normal levels.

GROVE AVENUE STORAGE BASIN

1218 Grove Ave.

The Utility completed construction of the Grove Avenue Storage basin in March of 2008. The storage basin reduces the potential for sanitary overflow into the storm water system by providing storage of 650,000 gallons of peak sanitary flow. The stored wastewater is pumped back into the collection system when the flow returns to normal. The tank was utilized three times in 2008.

OHIO STREET IN-LINE STORAGE

The Utility completed the construction of the Ohio Street interceptor sewer. It was available for service in March of 2009. The sewer is located under Ohio Street between Ridgeway Avenue and the northern boundary of Lockwood Park; it continues east in the park from Ohio Street to Illinois Street. The sewer protects properties on Virginia Street, which are connected to a 21 inch interceptor, from basement backups by providing 160,000 gallons of in-line overflow storage.

SCADA

The SCADA system is always being tuned and refined as more is being learned about the functionality of the system. The Utility is becoming more efficient through the operation of this tool. The Utility started investigating the use of the SCADA system as a security and monitoring tool in 2001 due to the environment in which we have lived since September 11, 2001. In 2010, the Utility began upgrading the software that controls the SCADA system and in 2019 the lift station telemetry radios were upgraded from analog to digital.

2020 Summary of Lifts #2 - #13

Time Period	Total MG	Avg MGD	Plant %	Plant Flow	KWH	WE $
January	61.043	1.969	22.43	272.13	41,852	$3,548
February	65.780	2.268	31.16	211.10	22,843	$3,178
March	68.031	2.195	23.99	283.61	22,773	$3,168
April	66.369	2.212	26.07	254.58	25,892	$3,487
May	104.445	3.369	26.27	397.59	26,857	$3,822
June	41.064	1.365	21.91	187.43	21,722	$2,943
July	50.795	1.639	22.16	229.25	18,454	$2,585
August	47.726	1.540	21.97	217.28	17,564	$2,518
September	33.454	1.115	21.85	153.13	17,245	$2,462
October	35.609	1.446	23.18	153.59	15,504	$2,236
November	34.751	1.255	23.59	147.33	16,613	$2,389
December	40.475	1.345	21.63	187.10	21,596	$3,058
2020	649.541	1.810	23.85	2,694.14	268,915	$35,395
2019	687.284	1.718	21.00	3,256.92	337,921	$46,584
2018	624.024	1.540	9.90	7,219.79	243,976	$34,548
2017	574.045	1.646	7.38	7,686.46	243,976	$34,548

Lift Station #1

Time Period	Total MG	Avg MGD	Max MGD	Min MGD	KWH	WE $
January	409.527	13.211	19.159	10.273	107,679	$13,605
February	519.187	17.903	65.441	9.383	112,949	$13,133
March	472.977	15.257	39.172	9.005	86,821	$12,049
April	440.152	14.672	57.833	9.305	125,191	$15,024
May	679.096	21.906	66.433	11.486	179,532	$24,277
June	301.350	10.077	20.143	8.163	120,005	$18,594
July	370.041	11.937	46.256	7.878	105,184	$15,716
August	371.660	11.989	32.764	7.475	111,264	$20,855
September	260.263	8.675	14.666	6.916	79,361	$11,951
October	243.188	7.845	15.560	6.278	64,339	$9,315
November	239.505	7.984	15.924	6.565	76,909	$11,646
December	287.533	9.275	25.017	7.174	79,748	$12,100
2020	4,594.479	12.561	66.433	6.278	1,248,982	$178,267
2019	5,439.828	14.893	111.968	6.717	1,342,342	$178,085
2018	4,130.913	11.287	62.644	0.000	1,161,416	$153,644
2017	3,895.023	10.659	46.916	5.075	1,161,416	$153,644

Lift Station #2

Time Period	Total MG	Avg MGD	Max MGD	Min MGD	KWH	WE $
January	20.539	0.663	0.897	0.508	5,440	$723
February	17.074	0.589	0.923	0.484	5,440	$718
March	19.026	0.614	1.330	0.425	4,600	$611
April	21.231	0.708	3.788	0.425	5,640	$743
May	35.427	1.143	4.386	0.420	5,840	$767
June	13.984	0.465	1.127	0.123	6,840	$896
July	17.400	0.561	2.254	0.371	4,400	$586
August	15.890	0.513	1.757	0.310	4,360	$580
September	10.967	0.366	0.750	0.265	4,230	$577
October	14.582	0.470	0.610	0.297	3,400	$459
November	13.336	0.445	0.764	0.304	3,280	$444
December	13.565	0.438	1.252	0.232	4,280	$573
2020	213.021	0.581	4.386	0.123	57,750	$7,676
2019	202.338	0.555	2.083	0.257	107,360	$13,999
2018	195.223	0.535	3.719	0.240	53,720	$7,186
2017	173.012	0.473	2.658	0.239	53,720	$7,186

Lift Station #3

Time Period	Total MG	Avg MGD	Max MGD	Min MGD	KWH	WE $
January	1.580	0.051	0.100	0.036	18,220	$258
February	1.232	0.042	0.080	0.031	1,502	$213
March	2.195	0.071	0.306	0.035	1,472	$208
April	2.320	0.077	0.437	0.033	1,252	$180
May	3.579	0.115	0.476	0.051	1,316	$188
June	0.963	0.031	0.046	0.022	1,490	$212
July	1.114	0.036	0.255	0.018	842	$127
August	0.967	0.031	0.165	0.018	772	$117
September	0.587	0.020	0.044	0.014	842	$128
October	0.595	0.019	0.047	0.014	845	$127
November	0.630	0.021	0.059	0.016	1,109	$161
December	0.841	0.027	0.117	0.017	1,489	$213
2020	16.604	0.045	0.476	0.014	31,151	$2,132
2019	20.399	0.056	0.361	0.014	15,449	$2,232
2018	17.026	0.047	0.442	-0.066	10,782	$1,625
2017	14.085	0.039	0.355	0.012	10,782	$1,625

Lift Station #4

Time Period	Total MG	Avg MGD	Max MGD	Min MGD	KWH	WE $
January	0.289	0.009	0.039	0.006	1,373	$195
February	0.228	0.008	0.015	0.006	1,329	$190
March	0.227	0.007	0.012	0.006	1,232	$177
April	0.242	0.008	0.031	0.007	1,351	$195
May	0.308	0.010	0.028	0.007	1,074	$156
June	0.325	0.011	0.016	0.007	1,027	$151
July	0.361	0.012	0.016	0.009	972	$143
August	0.362	0.012	0.022	0.009	1,064	$156
September	0.307	0.010	0.013	0.008	1,178	$172
October	0.265	0.009	0.012	0.007	1,105	$160
November	0.202	0.007	0.010	0.005	1,459	$210
December	0.185	0.006	0.008	0.005	1,481	$213
2020	3.300	0.009	0.039	0.005	14,645	$2,118
2019	3.040	0.008	0.027	0.003	15,821	$2,287
2018	2.924	0.008	0.060	0.003	13,955	$2,042
2017	2.791	0.008	0.037	0.003	13,955	$2,042

Lift Station #5

Time Period	Total MG	Avg MGD	Max MGD	Min MGD	KWH	WE $
January	3.287	0.106	0.151	0.078	2,529	$349
February	2.805	0.097	0.142	0.069	2,071	$288
March	3.670	0.118	0.401	0.064	1,952	$272
April	3.925	0.131	0.487	0.082	2,585	$356
May	6.785	0.219	0.978	0.103	3,549	$476
June	2.740	0.090	0.121	0.069	1,675	$236
July	3.141	0.101	0.332	0.056	1,903	$268
August	3.421	0.110	0.482	0.065	1,935	$270
September	2.206	0.074	0.112	0.056	1,536	$219
October	1.719	0.055	0.103	0.039	1,524	$218
November	1.615	0.054	0.121	0.039	1,430	$204
December	2.016	0.065	0.177	0.043	2,304	$322
2020	37.329	0.102	0.978	0.039	24,993	$3,477
2019	43.338	0.119	0.668	0.039	36,362	$4,956
2018	40.904	0.112	0.556	0.017	24,160	$3,382
2017	34.123	0.093	0.383	0.043	24,160	$3,382

Lift Station #6

Time Period	Total MG	Avg MGD	Max MGD	Min MGD	KWH	WE $
January	8.841	0.285	0.470	0.199	2,057	$285
February	6.952	0.240	0.431	0.175	1,653	$233
March	10.790	0.348	1.485	0.166	2,943	$399
April	9.472	0.316	1.539	0.179	2,637	$362
May	16.073	0.518	2.175	0.213	3,383	$455
June	5.180	0.173	0.217	0.135	2,012	$281
July	6.940	0.224	0.920	0.135	2,384	$328
August	5.712	0.184	0.399	0.126	2,081	$288
September	4.398	0.147	0.294	0.115	1,671	$236
October	4.176	0.135	0.296	0.105	1,611	$228
November	4.146	0.138	0.316	0.109	1,304	$188
December	5.639	0.182	0.606	0.120	1,782	$254
2020	88.318	0.241	2.175	0.105	25,518	$3,536
2019	110.271	0.303	1.700	0.115	28,809	$3,989
2018	92.966	0.255	1.959	0.094	25,455	$3,546
2017	83.326	0.228	1.515	0.084	25,455	$3,546

Lift Station #7

Time Period	Total MG	Avg MGD	Max MGD	Min MGD	KWH	WE $
January	1.444	0.047	0.061	0.035	1,143	$168
February	1.178	0.041	0.065	0.017	1,005	$147
March	1.501	0.048	0.126	0.017	978	$144
April	1.618	0.054	0.209	0.033	1,143	$158
May	2.413	0.078	0.260	0.040	1,005	$169
June	0.956	0.032	0.041	0.026	978	$103
July	1.295	0.042	0.163	0.025	1,143	$112
August	1.125	0.036	0.096	0.025	1,005	$102
September	0.774	0.026	0.036	0.021	978	$98
October	0.676	0.022	0.032	0.018	634	$99
November	0.784	0.026	0.049	0.019	866	$130
December	1.072	0.035	0.089	0.026	1,854	$261
2020	14.837	0.040	0.260	0.017	12,732	$1,691
2019	17.353	0.048	0.204	0.021	12,859	$1,896
2018	15.224	0.042	0.243	0.017	11,755	$1,751
2017	13.332	0.036	0.194	0.014	11,755	$1,751

Lift Station #8

Time Period	Total MG	Avg MGD	Max MGD	Min MGD	KWH	WE $
January	15.814	0.510	0.794	0.365	4,560	$611
February	13.363	0.461	0.780	0.210	4,280	$569
March	19.367	0.625	1.718	0.210	3,760	$503
April	16.616	0.554	2.365	0.329	5,160	$682
May	22.600	0.729	2.820	0.374	4,680	$619
June	8.680	0.289	0.363	0.237	5,160	$681
July	11.081	0.357	1.445	0.228	3,200	$434
August	10.462	0.337	1.045	0.219	2,840	$387
September	7.560	0.252	0.455	0.193	2,800	$382
October	7.387	0.238	0.547	0.173	2,360	$326
November	7.932	0.264	0.602	0.203	2,560	$353
December	10.229	0.330	1.116	0.220	2,840	$388
2020	151.090	0.412	2.820	0.173	44,200	$5,934
2019	181.884	0.499	1.920	0.193	54,200	$7,237
2018	163.476	0.448	2.643	0.174	44,560	$6,013
2017	146.147	0.400	2.076	0.163	44,560	$6,013

Lift Station #9

Time Period	Total MG	Avg MGD	Max MGD	Min MGD	KWH	WE $
January	0.911	0.029	0.043	0.019	1,406	$204
February	0.791	0.027	0.051	0.013	1,199	$173
March	1.148	0.037	0.130	0.013	1,115	$162
April	1.108	0.037	0.185	0.018	1,114	$162
May	1.571	0.051	0.392	0.021	1,254	$181
June	0.557	0.019	0.023	0.015	891	$133
July	0.728	0.023	0.106	0.015	690	$107
August	0.749	0.024	0.118	0.014	781	$119
September	0.519	0.017	0.034	0.012	719	$111
October	0.537	0.017	0.034	0.013	711	$109
November	0.517	0.017	0.041	0.011	815	$123
December	0.669	0.022	0.071	0.013	1,056	$156
2020	9.804	0.027	0.392	0.011	11,751	$1,740
2019	11.512	0.032	0.144	0.012	12,796	$1,886
2018	10.156	0.028	0.297	0.007	11,207	$1,678
2017	9.014	0.025	0.211	0.000	11,207	$1,678

Lift Station #10

Time Period	Total MG	Avg MGD	Max MGD	Min MGD	KWH	WE $
January	7.048	0.227	0.329	0.178	2,117	$294
February	21.125	0.728	15.472	0.158	1,803	$252
March	8.768	0.283	0.823	0.172	2,166	$299
April	8.725	0.291	1.142	0.202	2,275	$314
May	12.977	0.419	1.531	0.208	2,990	$406
June	6.729	0.224	0.250	0.197	1,628	$229
July	7.569	0.244	0.768	0.192	2,112	$293
August	7.764	0.250	0.744	0.177	2,251	$311
September	5.392	0.180	0.283	0.126	1,852	$259
October	5.045	0.163	0.292	0.120	1,767	$247
November	5.012	0.167	0.300	0.145	1,886	$265
December	5.554	0.179	0.399	0.142	2,031	$286
2020	101.709	0.280	15.472	0.120	24,878	$3,456
2019	83.905	0.230	1.164	0.000	24,987	$3,495
2018	75.921	0.208	1.191	0.000	24,592	$3,438
2017	90.008	0.246	0.959	0.099	24,592	$3,438

Lift Station #11

Time Period	Total MG	Avg MGD	Max MGD	Min MGD	KWH	WE $
January	0.425	0.014	0.061	0.008	1,174	$173
February	0.303	0.010	0.014	0.008	1,019	$149
March	0.343	0.011	0.017	0.010	1,025	$150
April	0.328	0.011	0.017	0.008	875	$130
May	0.377	0.012	0.019	0.010	925	$139
June	0.284	0.010	0.014	0.007	644	$101
July	0.316	0.010	0.014	0.007	528	$86
August	0.350	0.011	0.022	0.007	544	$88
September	0.262	0.009	0.014	0.007	544	$88
October	0.230	0.007	0.010	0.005	622	$97
November	0.250	0.008	0.014	0.005	752	$114
December	0.343	0.011	0.015	0.007	951	$143
2020	3.814	0.010	0.061	0.005	9,603	$1,459
2019	3.790	0.010	0.071	0.003	12,539	$1,851
2018	3.445	0.009	0.015	0.003	10,600	$1,599
2017	3.160	0.009	0.019	0.003	10,600	$1,599

Lift Station #12

Time Period	Total Mgal	Avg Mgal	Max Mgal	Min Mgal	KWH	WE $
January	0.532	0.017	0.026	0.011	1,680	$251
February	0.446	0.015	0.024	0.006	1,414	$214
March	0.707	0.023	0.061	0.006	1,369	$207
April	0.681	0.023	0.130	0.014	1,358	$206
May	2.013	0.065	0.341	0.016	1,860	$271
June	0.567	0.019	0.022	0.016	936	$152
July	0.672	0.022	0.076	0.015	754	$128
August	0.740	0.024	0.093	0.014	804	$134
September	0.418	0.014	0.022	0.010	891	$147
October	0.351	0.011	0.022	0.008	828	$137
November	0.290	0.010	0.019	0.007	1,044	$165
December	0.318	0.010	0.029	0.006	1,412	$215
2020	7.736	0.021	0.341	0.006	14,350	$2,226
2019	6.724	0.018	0.106	0.005	14,609	$2,275
2018	4.411	0.012	36.112	-36.095	11,318	$1,843
2017	3.022	0.008	0.074	0.000	11,318	$1,843

Lift Station #13

Time Period	Total Mgal	Avg Mgal	Max Mgal	Min Mgal	KWH	WE $
January	0.333	0.011	0.015	0.009	153	$37
February	0.284	0.010	0.021	0.007	128	$33
March	0.287	0.009	0.044	0.002	161	$37
April	0.104	0.003	0.017	0.002	127	$33
May	0.322	0.010	0.085	0.003	226	$47
June	0.099	0.003	0.009	0.002	118	$31
July	0.177	0.006	0.055	0.003	157	$37
August	0.185	0.006	0.043	0.001	161	$38
September	0.063	0.002	0.005	0.001	114	$31
October	0.046	0.001	0.005	0.001	97	$29
November	0.037	0.001	0.003	0.001	108	$32
December	0.043	0.001	0.006	0.001	116	$34
2020	1.980	0.005	0.085	0.001	1,666	$419
2019	2.729	0.007	0.046	0.002	2,130	$480
2018	2.347	0.006	0.085	0.001	1,872	$446
2017	2.024	0.006	0.027	0.001	1,872	$446

Lift Station #14

Time Period	Total Mgal	Avg Mgal	Max Mgal	Min Mgal	KWH	WE $
January	0.559	0.018	0.026	0.013	1,277	$183
February	0.435	0.015	0.024	0.012	1,664	$234
March	0.626	0.020	0.064	0.010	1,609	$226
April	0.677	0.023	0.108	0.012	1,645	$231
May	1.119	0.036	0.146	0.016	2,136	$296
June	0.363	0.012	0.016	0.009	1,414	$201
July	0.521	0.017	0.082	0.009	1,372	$196
August	0.545	0.018	0.070	0.009	736	$112
September	0.296	0.010	0.017	0.008	712	$111
October	0.261	0.008	0.017	0.006	722	$110
November	0.261	0.009	0.017	0.007	904	$136
December	0.347	0.011	0.029	0.008	1,195	$176
2020	6.008	0.016	0.146	0.006	15,386	$2,212
2019	6.857	0.019	0.097	0.007	11,175	$1,674
2018	6.062	0.017	0.130	0.005	9,385	$1,437
2017	5.152	0.014	0.090	0.005	9,385	$1,437

Storage Basin (adjacent to LS #2) Construction Complete

LIFT STATION EQUIPMENT & CAPACITY SUMMARY

No.	Location	Pumps	GPM at TDH	Manufacturer	Total** Capacity	Firm*** Capacity
#1	736 Washington Ave.	3-300 hp 3-300 hp	15,500 at 65' 14,799 at 65'	ITT A-C Pump-West Fairbanks/Morse-East	112 MGD	90 MGD
#2	2022 Spring Street & Luedtke Ct.	3-40 hp	2100 at 38'	Fairbanks/Morse	9.07 MGD	6.05 MGD
#3	1004 Riverbrook Dr.	2-3 hp	225 at 15'	Flygt	0.648 MGD	0.324 MGD
#4	Festival Site/ 6-5th St.	2-7.5 hp	630 at 26'	Fairbanks/Morse	1.82 MGD	0.910 MGD
#5	1530-13th St. & Lockwood Ave.	2-24 hp	718 at 76'	Peabody/Barnes	2.06 MGD	1.030 MGD
#6	3236 Drexel Ave.	3-15 hp	1,000 at 15'	ITT	4.32 MGD	2.880 MGD
#7	45 Steeplechase Dr.	2-7.5 hp	425 at 27.5'	ShinMaywa	1.224 MGD	0.612 MGD
#8	3625 Rapids Ct. at Root River	3-40 hp	1220 at 44'	Fairbanks/Morse	5.27 MGD	3.510 MGD
#9	3908 Frances Dr. and Harrington Dr.	2-7.5 hp	120 at 48'	KSB	0.344 MGD	0.172 MGD
#10	800 South Memorial Dr. & Root River	3-10 hp	850 at 19'	1-KSB 2-Fairbanks/Morse	3.67 MGD	2.440 MGD
#11	2750 Old Mill Rd.	2-2.8 hp	275 at 15'	Peabody/Barnes	0.792 MGD	0.396 MGD
#12	334 Parkview Dr.	2-3.4 hp	120 at 30'	ShinMaywa	0.346 MGD	0.173 MGD
#13	1100 N. Main St.	2-1.5 hp	70 at 25'	KSB	0.128 MGD	0.064 MGD
#14	3205 Michigan Blvd.	2-5 hp	500 at 20.7'	Hydromatic	1.44 MGD	0.720 MGD

** Total Capacity is the estimated capacity with all pumps in service.
*** Firm Capacity is the estimated capacity with the single largest pump out of service.

COLLECTION SYSTEM STORAGE & CAPACITY SUMMARY

Storage Name and Location Source	Pumps	GPM at TDH	Manufacturer	Total Pump Capacity	Total Storage Capacity	Flow
North Side Storage 3026 Mt. Pleasant St.	(3) 60 hp – sewage (2) 5 hp – dewatering	18,000 GPM at 30' 150 GPM at 35'	ITT Flygt Pump ITT Flygt Pump	3 pumps = 26 MGD 0.216 MGD	8.40 Million Gallons	Caledonia-Riverbend Lift Station
Grove Ave. Storage 1218 Grove Ave.	(2) 10 hp sewage	507 GPM at 41'	KSB	0.730 MGD	0.65 Million Gallons	City and Mt. Pleasant
Ohio St. in-line Storage North side of Lockwood Park	N/A	N/A	N/A	N/A	0.16 Million Gallons	City and Mt. Pleasant
Lift Station #2 Storage Tank 2022 Spring St.	(2) 5 hp sewage	234 GPM at 28.2'	ShinMaywa	2 pumps = 0.674 GPD	2.4 Million Gallons	City and Mt. Pleasant

North Side Storage

Grove Avenue Storage

Ohio Street Storage

Lift Station #2 Storage

HOUSEHOLD HAZARDOUS WASTE

ARM-ACM-390_fillable (Rev. 4/19)

Wisconsin Department of Agriculture, Trade and Consumer Protection
Division of Agricultural Resource Management
Bureau of Agrichemical Management
PO Box 8911 • Madison WI 53708-8911
Phone: (608) 224-4545 • Email: DATCPcswp@wisconsin.gov

2020 Wisconsin Clean Sweep Ag and/or HHW Collection Waste Summary

Grant Recipient: Racine Wastewater Utility

Grant Type: ☐ Temporary ☒ Continuous ☒ Permanent

HHW: Estimated households in collection area 21,000 +/-

Number of HHW Participants 2059 Percent HHW Participation 10%

AG: Estimated Farms in collection area Number of Ag

Percent Ag Participation

VSQG: Total number VSQG participants Total receiving 50% ag subsidy

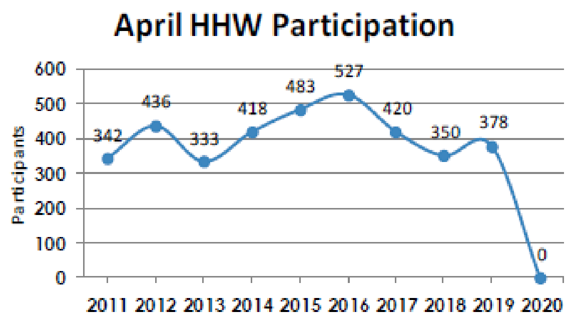
Note: If this is a multi-municipal/tribal collection, consolidate all collections on this sheet.

HHW Waste Data

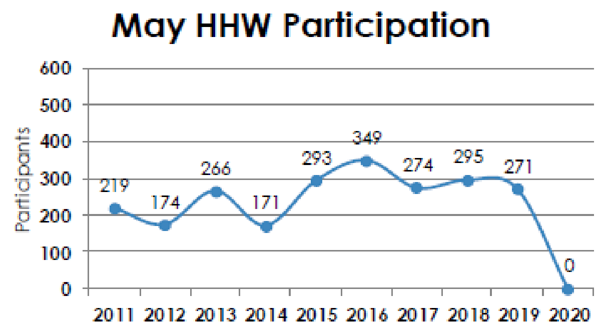
Item	Total Weight (lbs.)
Pesticides/Poisons	29478
Lead/Oil Paint	24813
Caustics/Corrosives	7123
Reactives	150
Solvents/Thinners	10862
Waste Oil	425
PCBs	76
Aerosol Cans	5756
Mercury	39
Dioxins	15
Latex Paint	
Other	4853
Total ALL Collected Chemicals (lbs.)	83590
Average Weight Collected Per Participant (lbs.)	40.6

HHW Participation Data

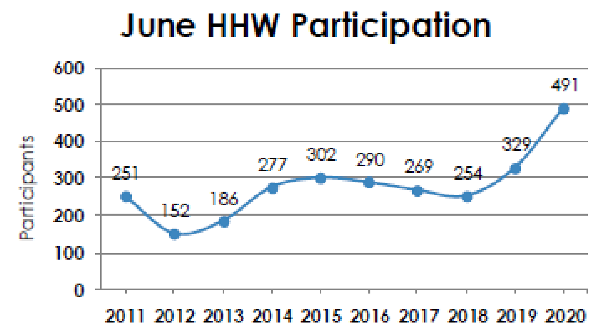
	*Apr	*May	Jun	Jul	Aug	Sep	Oct	Annual Total
2020 Participation	0	0	491	342	307	418	501	2059
2019 Participation	378	271	329	265	308	308	384	2243
Difference 2019 vs. 2020	-378	-271	162	77	-1	110	117	-184



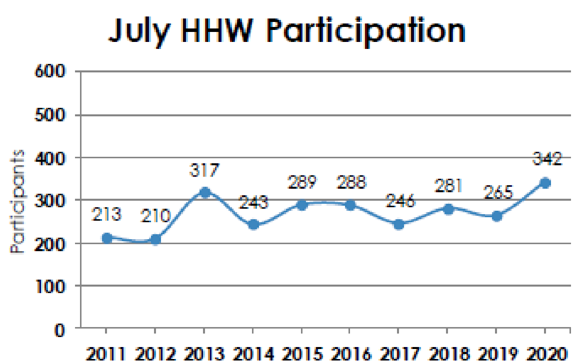
April 2020 cancelled due to COVID-19

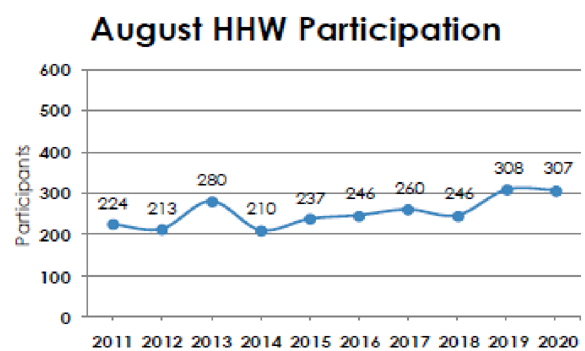


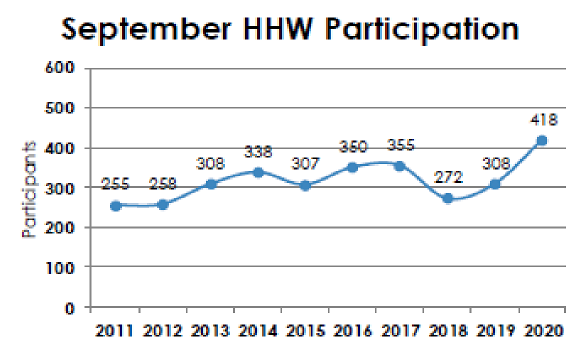
May 2020 cancelled due to COVID-19

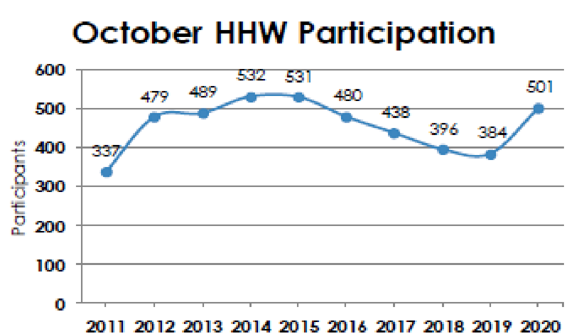


June 2020 - 1st event of the year due to COVID-19









APPENDIX A

Adopted Budget

	2018 ACTUAL	2019 BUDGET	2019 PROJECTED	2020 BUDGET	19 VS 20 BUDGET
Operating Revenue	$13,988,635	$13,994,949	$15,000,000	$14,022,484	0.2%
Rate Stabilization Fund	$400,000	$400,000		$400,000	
True Up		($500,235)		($1,041,231)	
Total Operating Revenue	$14,388,635	$13,894,714	$15,000,000	$13,381,253	-3.7%
O&M Expense (Includes OPEB)	$9,108,509	$10,227,000	$9,149,000	$10,252,000	0.2%
Depreciation*	2,236,809	2,237,862	2,236,000	2,264,201	1.2%
Total Operating Expense	$11,345,318	$12,464,862	$11,385,000	$12,516,201	0.4%
Net Operating Income	**$2,643,317**	**$1,429,852**	**$3,615,000**	**$865,053**	-39.5%
Other Income					
Plant Capacity Income (COSS)	$1,596,392	$1,483,106	$1,480,000	$1,406,680	-5.2%
Household Hazard Waste	232,032	200,000	230,000	155,000	-22.5%
Interest/Dividend Income	149,295	111,000	191,000	175,000	57.7%
Other Expense					
Household Hazard Waste	$174,888	$275,000	$185,000	$190,000	-30.9%
Interest Expense	$808,085	$868,000	$830,000	674,000	-22.4%
Net Income	**$3,638,063**	**$2,080,958**	**$4,501,000**	**$1,737,733**	-16.5%

Distribution of 2020 Budget Net Income	$1,737,733
Plus Depreciation	2,264,201
Plus OPEB	600,000
Plus principal collected from other communities not included abc	2,237,923
Total Cash Available	$6,839,857
Less Bond Principal Payments	(6,430,819)
Less Rate Stabilization Fund	(400,000)
Less Total Capital Improvement Projects	(9,527,000)
Plus Contributed Capital Improvement Projects	8,950,000
Net Cash Balance	($567,962)
Funding - From State Loans and/or Reserves/Rates	

ACCOUNT	2018 Actual	2019 Budget	2019 6/30/2019	2019 Projected	Adopted 2020 Budget	19 vs 20 Budget
A. PERSONNEL SERVICES						
Salaries & Wages	$2,842,577	$3,050,000	$1,332,198	$2,956,000	$3,239,000	6.2%
B. CONTRACTUAL						
Professional Services	$221,190	$279,000	$86,706	$173,000	$254,000	-9.0%
Laboratory Prof. Services	15,292	31,000	11,974	24,000	29,000	-6.5%
Pre-treat. Prof Services	4,330	8,000	4,851	10,000	9,000	12.5%
Building & Equipment Maint.	90,016	110,000	31,532	63,000	110,000	0.0%
Vehicle Maintenance	21,122	25,000	10,102	20,000	25,000	0.0%
Telephone	9,335	10,000	4,530	9,000	10,000	0.0%
Natural Gas	157,381	160,000	95,091	165,000	170,000	6.3%
Electric Service	929,036	950,000	483,804	925,000	950,000	0.0%
Water Service	253,525	255,000	59,537	238,000	265,000	3.9%
City Sewer & L.S. Maint.	15,003	18,000	559	15,000	18,000	0.0%
Interceptor & L.S. Maint.	114,990	130,000	66,979	130,000	130,000	0.0%
Sludge & Grit Disposal	597,214	645,000	379,185	660,000	687,000	6.5%
TOTAL	$2,428,433	$2,621,000	$1,234,850	$2,432,000	$2,657,000	1.4%
C. MATERIALS & SUPPLIES						
Office Supplies	$15,579	$14,000	$5,490	$11,000	$14,000	0.0%
Gasoline & Diesel Fuel	20,673	26,000	10,085	20,000	25,000	-3.8%
Lubricants	32,433	30,000	12,018	24,000	30,000	0.0%
Custodial Supplies	15,152	16,000	5,441	11,000	16,000	0.0%
Operational Chemicals	308,328	380,000	138,865	278,000	388,000	2.1%
Plant & System Supplies	57,921	56,000	24,805	50,000	56,000	0.0%
Equipment Supplies	212,672	215,000	75,947	152,000	215,000	0.0%
Sewer Maint. Supplies	5,933	7,000	-	6,000	7,000	0.0%
Pre-treat.Sampling Supplies	4,882	7,000	3,572	7,000	7,000	0.0%
Laboratory Supplies	44,928	58,000	26,172	52,000	55,000	-5.2%
Pre-treat. Lab Supplies	18,842	21,000	7,546	15,000	22,000	4.8%
Computer & PLC Supplies	23,608	35,000	31,000	40,000	35,000	0.0%
TOTAL	$760,950	$865,000	$340,940	$666,000	$870,000	0.6%

ACCOUNT	2018 Actual	2019 Budget	2019 6/30/2019	2019 Projected	Adopted 2020 Budget	19 vs 20 Budget
D. CUSTOMER ACCOUNT						
Metering, Billing & Collection	$642,110	$650,000	$321,055	$610,000	$620,000	-4.6%
E. ADMINISTRATION & GENERAL						
Dues, Publications & Travel	$33,698	$37,000	$6,740	$35,000	$37,000	0.0%
FICA Tax	214,172	238,000	111,125	222,000	253,000	6.3%
Property & Liability Insurance	90,296	95,000	40,832	97,000	100,000	5.3%
Worker's Compensation Insur.	77,373	70,000	21,654	60,000	65,000	-7.1%
Office Rent	29,650	35,000	15,255	31,000	32,000	-8.6%
Wisconsin Retirement Expense	250,577	288,000	127,751	256,000	311,000	8.0%
Medical Expenses	987,383	1,100,000	411,586	823,000	1,100,000	0.0%
Net OPEB Obligation	523,767	800,000	-	600,000	600,000	-25.0%
Life Insurance	27,255	28,000	6,551	28,000	15,000	-46.4%
Safety Programs & Supplies	18,719	22,000	9,056	18,000	19,000	-13.6%
City Departmental Charges	80,939	84,000	41,500	83,000	85,000	1.2%
Training Programs	12,235	15,000	2,150	10,000	15,000	0.0%
Stormwater Fees	35,551	37,000	24,614	40,000	46,000	24.3%
DNR Permit Fee	130,979	142,000	132,018	132,000	137,000	-3.5%
Airport Property Lease	48,762	50,000	49,824	50,000	51,000	2.0%
TOTAL	$2,561,357	$3,041,000	$1,000,655	$2,485,000	$2,866,000	-5.8%
SUMMARY						
A. Personel Service	$2,842,577	$3,050,000	$1,332,198	$2,956,000	$3,239,000	6.2%
B. Contractual Service	2,428,433	2,621,000	1,234,850	2,432,000	2,657,000	1.4%
C. Materials & Supplies	760,950	865,000	340,940	666,000	870,000	0.6%
D. Customer Accounts	642,110	650,000	321,055	610,000	620,000	-4.6%
E. Administrative & General	2,561,357	3,041,000	1,000,655	2,485,000	2,866,000	-5.8%
TOTALS	$9,235,428	$10,227,000	$4,229,698	$9,149,000	$10,252,000	0.2%

	GENERAL PLANT						
1	Laboratory Equipment	$60,000	$40,000	$50,000	$40,000	$115,000	$305,000
2	Roof Replacement	20,000	85,000	-	-	-	105,000
3	Flow-Thru Samplers	10,000	-	-	-	-	10,000
4	Plant Flow Meters	16,000	16,000	-	-	-	32,000
5	Clarifier Equipment Rehab	25,000	25,000	-	25,000	-	75,000
6	Tank Drainage Pump #3	-	10,000	-	-	-	10,000
7	**Property Development	4,500,000	-	-	-	-	4,500,000
8	**Plant Expansion	450,000	2,000,000	30,000,000	30,000,000	-	62,450,000
9	Biogas Pretreatment Equip	-	-	-	-	480,000	480,000
	Subtotal	$5,081,000	$2,176,000	$30,050,000	$30,065,000	$595,000	$67,967,000
	AUTOMOTIVE						
1	Pickup/Van/SUVs	$40,000	$0	$0	$0	$0	$40,000
2	Utility Trucks	30,000	-	-	129,000	-	159,000
3	**Vactor (city only)	-	-	445,000	-	-	445,000
	Subtotal	$70,000	$0	$445,000	$129,000	$0	$644,000
	COLLECTION SYSTEM						
1	LS Controls/Building	$0	$100,000	$0	$100,000	$0	$200,000
2	**6th St Bridge Int Relocate	1,250,000	-	-	-	-	1,250,000
3	**At North Beach Dev LS/FM (city)	1,250,000	-	-	-	-	1,250,000
4	**6th St/Racine St Int Relocate (cit	1,500,000	-	-	-	-	1,500,000
5	Field Meters and Samplers	31,000	6,000	6,000	6,000	6,000	55,000
6	Pipe Televising Equipment	25,000	-	-	-	-	25,000
7	Manhole Structure Rehab	20,000	20,000	20,000	20,000	20,000	100,000
8	**Lakeview Park Storage, 48" Int	-	-	990,000	14,084,000	-	15,074,000
9	**LS #1 West Force Main	-	-	-	360,000	5,142,000	5,502,000
10	**West Blvd Interceptor	-	-	-	230,000	3,281,000	3,511,000
11	Telemetry PLC Upgrades	-	-	50,000	-	-	50,000
12	Interceptor Improvement Projects	300,000	600,000	100,000	100,000	100,000	1,200,000
	Subtotal	$4,376,000	$726,000	$1,166,000	$14,900,000	$8,549,000	$29,717,000
	TOTAL COST	$9,527,000	$2,902,000	$31,661,000	$45,094,000	$9,144,000	$98,328,000
	**Total Contributed Captital Proje	8,950,000	2,000,000	31,435,000	44,674,000	8,423,000	95,482,000

Note: ** Denotes that the project cost is to be split on a Cost of Service share (COSS) basis among SSR parties per the Sewer Agreement

CLASS I CHARGES - 2020

9/23/2019
Adopted

With $400,000 Rate Stablization Fund

AREA		2019	2020	% CHANGE	Overall % Change
A.	City of Racine ($/ccf)	$2.77	$2.67	-3.6%	
	plus quarterly fixed charge	$20.00	$20.00	0.0%	-2.7%
B.	Elmwood Park ($/ccf)	$2.76	$2.65	-3.7%	
	North Bay ($/ccf)	$2.76	$2.65	-3.7%	
	plus quarterly fixed charge	$20.00	$20.00	0.0%	-2.7%
C.	Mt. Pleasant (int) ($/MG)	$1,482.41	$1,380.45	-6.9%	-6.9%
	Caledonia ($/MG)	$1,482.41	$1,380.45	-6.9%	-6.9%
D.	Mt. Pleasant ($/MG)	$1,814.15	$1,712.19	-5.6%	-5.6%
	Caledonia ($/MG)	$1,814.15	$1,712.19	-5.6%	-5.6%

The percentage change is shown as a comparison to the previous years rates. The actual rate increase imposed by individual sewer utilities will vary depending on how they deal with existing surpluses and future projects within their respective Utilities.

CLASS 2 CHARGES - 2020

9/23/2019
Adopted

With $400,000 Rate Stablization Fund

AREA		2019	2020	Difference	% CHANGE
A.	City of Racine ($/MG)	$2,416.96	$2,370.59	($46.36)	-1.9%
B.	Mt. Pleasant - Sturtevant ($/MG)	$822.71	$779.51	($43.20)	-5.3%
C.	Caledonia ($/MG)	$1,124.66	$1,083.05	($41.61)	-3.7%
D.	BOD ($/1000 LBS.)	$278.04	$285.20	$7.16	2.6%
E.	SS ($/1000 LBS.)	$338.82	$336.75	($2.08)	-0.6%
F.	PHOS ($/1000 LBS.)	$3,385.90	$2,137.82	($1,248.08)	-36.9%

LIST OF VEHICLES

ISSUED	VEHICLE #	YEAR	MODEL	IDENTIFICATION NO.	TITLE NO.	LIC #	GVW	FUEL	ENGINE SIZE (LITERS)	AMOUNT $
3/1/2016	**WW001**	**2016**	Fusion Hybrid	3FA6POLU4GR317901	16061M3002-5	**92310**	4680 GVWR	N.L.-13.5 gal. LEV .	2	$26,038.00
3/14/2019	**WW003**	**2019**	Escape SE	1FMCU9GDXKUB14478	19073Y3010-9	**C11408**	GVWR	N.L.-15.7 gal. LEV	1.5	$25,122.50
3/14/2017	**WW004**	**2017**	F-150 4x4	1FTEW1EP5HKC48227	17073A1023-6	**95563**	6500 GVWR	N.L. 23 gal.	2.7	$35,290.00
6/8/2018	**WW005**	**2018**	F350 4x4 Dump Truck	1FDRF3H6XJEC11075	181590385006-4	**99185**	14,000 GVWR	NL 40 gal. LEV	6.2	$52,494.82
7/24/2018	**WW006**	**2018**	Transit Cargo Van	NMOLS7F76J1373444	182050444013-8	**99587**	5270 GVWR	NL-15.8 gal. LEV	2.5	$27,555.23
3/14/2019	**WW008**	**2019**	Escape SE	1FMCU9GD8KUB14478	19073Y3011-6	**C11409**	GVWR	N.L.-15.7 gal. LEV .	1.5	$25,122.50
1/29/2019	**WW010**	**2019**	SD F250 4 X 4 Supercab	1FTX2B65KED69241	19029F7005-2	**C11129**	10,000 GVWR	NL 34 gal LEV	6.2	$41,999.50
4/3/2015	**WW011**	**2015**	Explorer	1FM5K7D93FGC16597	15093F1008-0	**89981**	5900 GVWR	N.L.-18.6 gal. LEV	2.0	$29,682.50
4/25/2018	**WW012**	**2018**	Escape 4 DR. 4 WD	1FMCU9GD3JUC12007	181150380022-3	**98882**	4540 GVWR	15.7 gal. cap LEV	1.5	$25,122.50
2/14/2019	**WW014**	**2019**	F150 Reg Cab 4 x 4	1FTEW1EP6KKC54576	190450365017-5	**C11265**	6950 GVWR	N.L.-26 gal. LEV	2.7T	$36,937.50
3/30/2020	**WW015**	**2020**	F150 4 WD Reg. Cab	1FTMF1EP3LKD52252	2009003750255	**C14640**	6950 GVWR	N.L.-23 gal. LEV	2.7	$31,412.50
5/19/2011	**WW016**	**2011**	F550 4X4 Reg Cab	1FDUF5HT6BEC37007	111390401051-8	**81797**	18000 GVWR	Diesel 40 gal.	6.7	$77,227.60
9/5/2013	**WW018**	**2013**	Sprinter	WD3PE8CC4D5796274	13248Q8008-9	**86887**	8550 GVWR	Diesel 26 gal. LEV	3.0	$138,510.21
4/19/2016	**WW020**	**2017**	Vactor	1NPCLOX9HD387994	16110F6024-6	**92682**	66,000 GVWR	Diesel 100 gal.	13.0	$425,006.00
2/4/2020	**WW031**	**2020**	SD F-250 Super Cab 4WD	1FT7X2B6XLEC63594	20035W20063	**C14114**	10,000 GVWR	N.L.-34 gal. LEV	6.2	$36,666.50
4/29/2017	**WW032**	**2017**	F-250 Super Cab 4 WD	1FT7X2B67HEC46999	17119F8010-3	**95926**	10,000 GVWR	N.L.-34 gal. L:EV	6.2	$33,445.00
										$1,067,632.86