RACINE ON THE LAKE
City of Racine, WISCONSIN
Racine Wastewater Utility

2024

Annual Report

Racine Wastewater Utility

2024 Racine Wastewater Utility Annual Report

2024 BOARD OF WASTEWATER COMMISSIONERS

NATALIA TAFT, PRESIDENT
JOHN TATE II, VICE-PRESIDENT

MAYOR CORY MASON
ALDER TERRY MCCARTHY
ALDER MOLLIE JONES
JENS JORGENSEN
STACY SHEPPARD
CLAUDE LOIS
NANCY WASHBURN
KEVIN SALB
ANTHONY BUNKELMAN

ALTERNATES:

JAMES SULLIVAN
ANTHONY BEYER
JACK FEINER

WASTEWATER DIRECTOR
NATE TILLIS

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

June 17, 2025

To: Nate Tillis, Racine Wastewater Director
Racine Wastewater Utility Commissioners

We hereby submit the detailed annual report of the Wastewater Treatment Plant and System for the calendar year 2024.

Respectfully Submitted,

Kenneth M. Scolaro
Administrative Manager

Mary-Frances T. Klimek
Superintendent

Amanda E. Kaminski
Field Director

Andrew E.W. Dennerlein
Laboratory Director

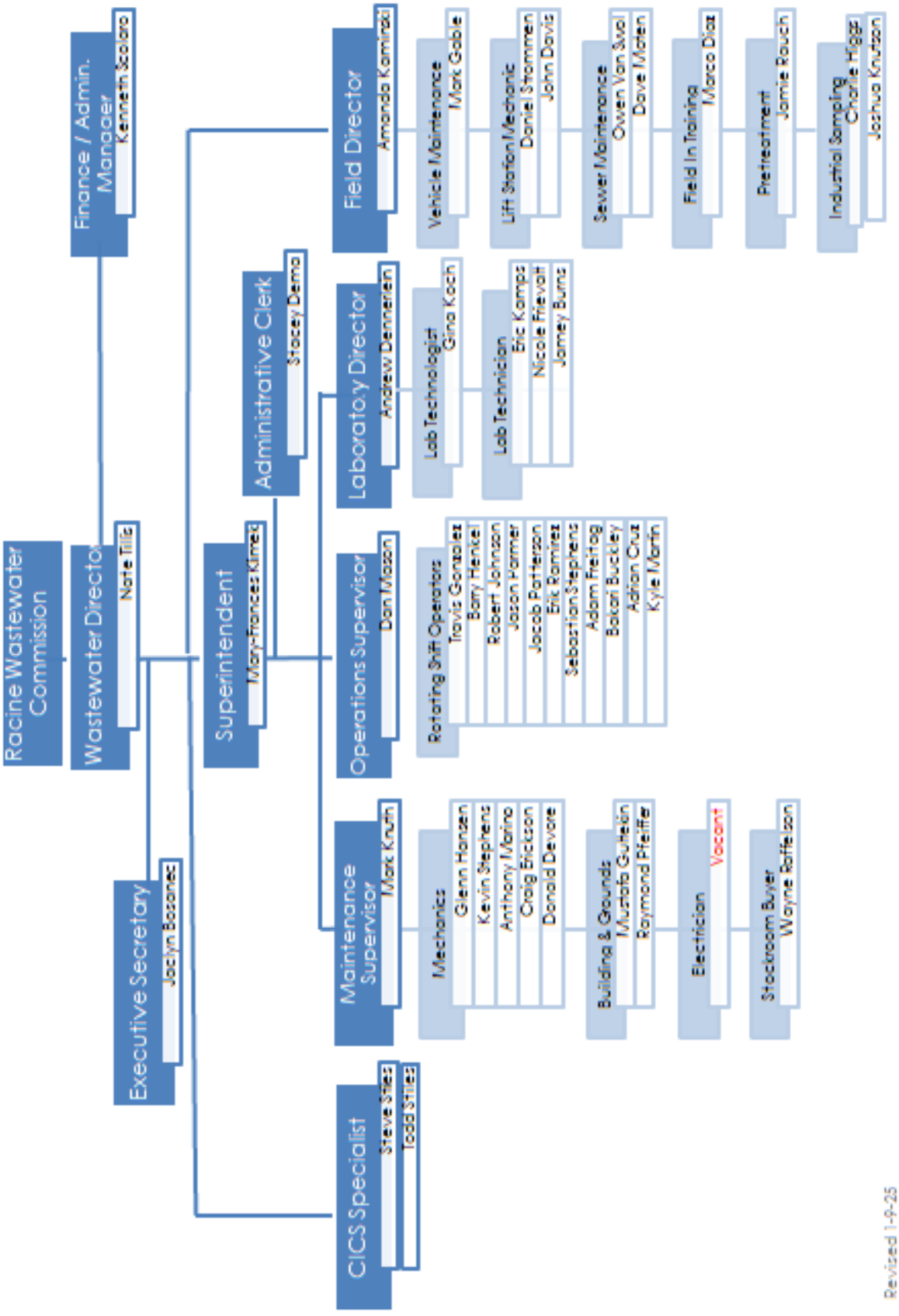
Mark A. Knuth
Maintenance Supervisor

Dan R. Mason
Operations Supervisor

Steve P. Stiles
Computer, Instrumentation and Controls
System Specialist

ADMINISTRATION & EMPLOYEE INFORMATION

ORGANIZATIONAL CHART 2024



Administration & Staff

Administration

Nate Tillis, Wastewater Executive Director, was appointed by the Racine Wastewater Commission in July 2022. He is responsible for the oversight of all functions of the Wastewater Utility.

Kenneth Scolaro, CPA, Administrative Manager 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.

Jaclyn Bosanec, Executive Assistant, provides direct administrative support to the Executive Director of the Utility and the Utility Commission Board, along with coordinating Accounts Payable & Receivable for the RWWU. She has been with the Utility since 2022.

Racine Wastewater Treatment Plant Staff

Mary-Frances Klimek, Superintendent 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 directs, supervises and ensures proper operations of all laboratory functions. He has been with the Utility since 2018.

Amanda Kaminski was promoted to Field Director in 2020, previously being named Industrial Pretreatment Coordinator in 2018. She 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. Ms. Kaminski has been with the Utility since 2011.

Mark Knuth, Maintenance Supervisor was promoted to this position in November 2022. Mr. Knuth is responsible for all mechanical and grounds maintenance at the plant. He has been employed with the Utility since 2012.

Dan Mason, Operations Supervisor 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.

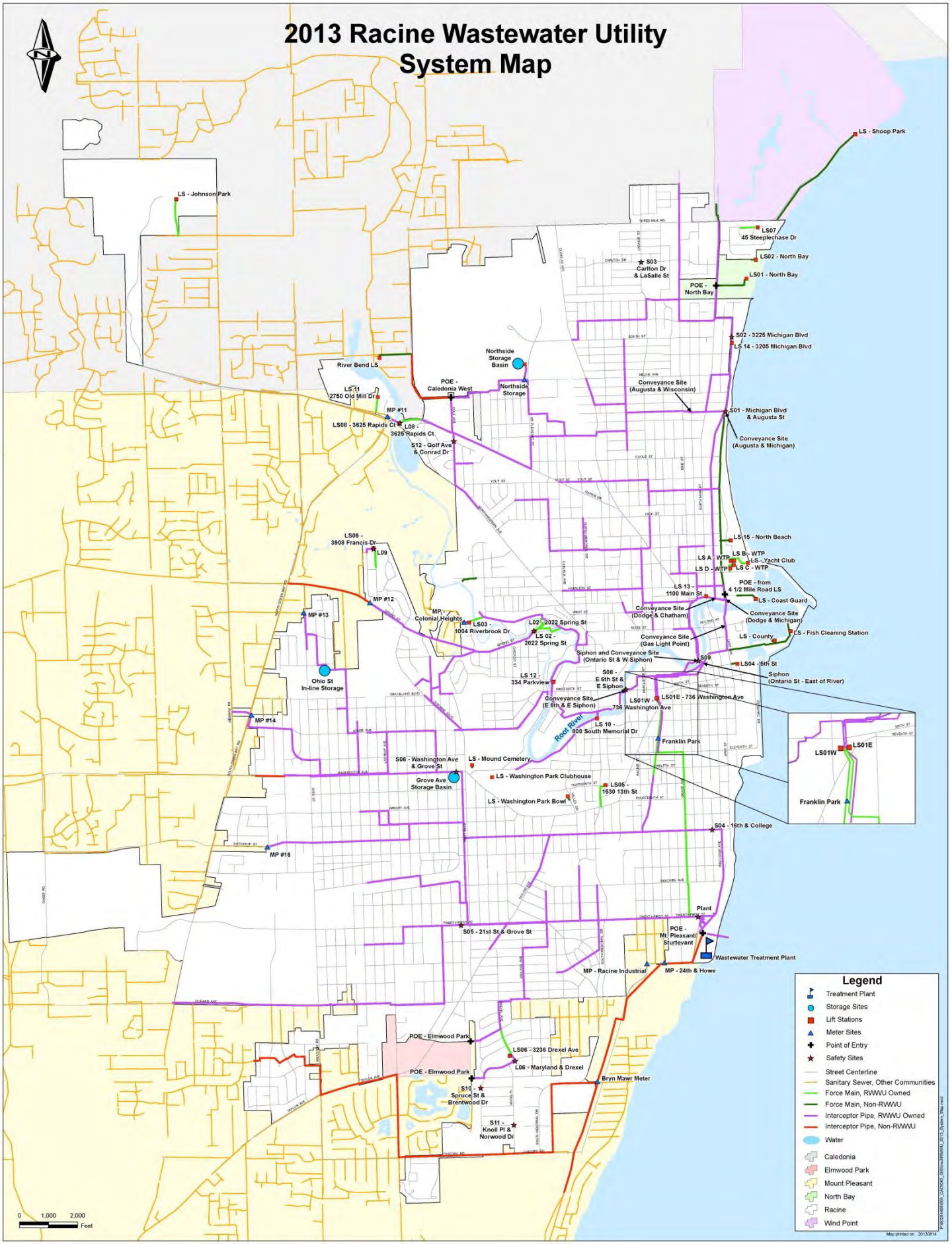
Steve Stiles, Computer Instrumentation & Controls System Specialist. Mr. Stiles is responsible for the operations and maintenance of all computers, electronic monitoring systems and equipment. He has been employed with the Utility since 2019.

Stacey Dema, Administrative Clerk performs highly responsible administrative services, including planning, coordinating, and directing all office operational activities, communications, purchasing, report compilation, forms management and technical support. She has been employed with the Utility since 2024.

Employee and Classification 2024

Last Name	First Name	Classification	DOH	# of Yrs Hire Date
Buckley	Bakari	Operator	4/4/2022	2.7
Burns	Jamey	Lab Technician	11/21/2022	2.1
Cruz	Adrian	Operator	6/19/2023	1.5
Davis	John	Lift Station Mechanic	11/18/2024	0.1
Dema	Stacey	Administrative Clerk	9/3/2024	0.3
Dennerlein	Andrew	Laboratory Director	5/29/2018	6.6
Devore	Donald	Mechanic	3/13/2023	1.8
Diaz	Marco	Field in Training	5/4/2023	1.7
Erickson	Craig (CJ)	Mechanic	3/21/2022	2.8
Freitag	Adam	Operator	12/30/2020	4.0
Frievalt	Nicole	Laboratory Technician	7/26/2021	3.4
Gable	Mark	Garage Mechanic	2/25/2008	16.9
Gonzalez	Travis	Operator	8/17/2015	9.4
Gultekin	Mustafa	Operator	4/26/2021	3.7
Hansen	Glenn	Mechanic	2/25/2002	22.9
Higgs	Charlie	Sample Crew	3/22/2021	3.8
Henkel	Barry	Operator	4/15/1991	33.7
Johnson	Robert	Operator	3/28/2016	8.8
Kaminski	Amanda	Field Director	2/7/2011	13.9
Kamps	Eric	Lab Technician	4/29/2013	11.7
Klimek	Mary-Frances	Superintendent	3/26/1990	34.8
Knuth	Mark	Maintenance Supervisor	4/16/2012	12.7
Knutson	Joshua	Field in Training	9/13/2021	3.3
Koch	Gina	Lab Technician	7/6/2021	3.5
Marino	Anthony	Mechanic	9/20/2021	3.3
Martin	Kyle	Operator	1/8/2024	1.0
Mason	Daniel	Operation Supervisor	11/21/2011	13.1
Moten	David	Sewer Maintenance	4/8/2009	15.7
Parmer	Jason	Operator	9/20/2021	3.3
Patterson	Jacob	Operator	7/6/2021	3.5
Pfeiffer	Raymond	Bldg & Gr Maint	8/2/2021	3.4
Raffelson	Wayne	Mechanic	5/3/2004	20.7
Ramirez	Erik	Operator	7/26/2021	3.4
Rauch	Jamie	Pretreatment	12/9/2019	5.1
Stephens	Kevin	Mechanic	8/13/2012	12.4
Stephens	Sebastian	Operator	7/11/2005	19.5
Stiles	Steve	CICS Specialist	3/4/2019	5.8
Strommen	Daniel	Lift Station Mechanic	9/13/2021	3.3
Van Swol	Owen	Sewer Maintenance	11/3/2003	21.2

SERVICE AREA


2013 Racine Wastewater Utility
System Map
LS - Shoop Park
LS - Johnson Park
LS07
45 Steeplechase Dr
LS02 - North Bay
LS01 - North Bay
S03
Carlton Dr
& LaSalle St
POE -
North Bay
S02 - 3225 Michigan Blvd
LS 14 - 3205 Michigan Blvd
Northside
Storage
Basin
River Bend LS
POE -
Caledonia West
Northside
Storage
Conveyance Site
(Augusta & Wisconsin)
LS 11
2750 Old Mill Dr
MP #11
LS08 - 3625 Rapids Ct
L08 -
3625 Rapids Ct
S12 - Golf Ave
& Conrad Dr
S01 - Michigan Blvd
& Augusta St
Conveyance Site
(Augusta & Michigan)
LS09 -
3908 Francis Dr
L09
LS 15 - North Beach
LS A - WTP
LS B - WTP
LS - Yacht Club
LS D - WTP
LS C - WTP
LS 13 -
1100 Main St
POE - from
4 1/2 Mile Road LS
LS - Coast Guard
MP #12
MP #13
MP -
Colonial Heights
LS03 -
1004 Riverbrook Dr
L02 - 2022 Spring St
LS 02 -
2022 Spring St
Conveyance Site
(Dodge & Chatham)
Conveyance Site
(Dodge & Michigan)
Conveyance Site
(Gas Light Point)
LS - County
LS - Fish Cleaning Station
Siphon and Conveyance Site
(Ontario St & W Siphon)
S09
LS04 - 5th St
Ohio St
In-line Storage
LS 12 -
334 Parkview
S08 -
E 6th St &
E Siphon
Siphon
(Ontario St - East of River)
Conveyance Site
(E 6th & E Siphon)
LS01W -
736 Washington Ave
LS01E - 736 Washington Ave
MP #14
Root River
LS 10 -
800 South Memorial Dr
Franklin Park
S06 - Washington Ave
& Grove St
LS - Mound Cemetery
Grove Ave
Storage Basin
LS - Washington Park Clubhouse
LS05 -
1630 13th St
LS - Washington Park Bowl
S04 - 16th & College
MP #16
Plant
S05 - 21st St & Grove St
POE -
Mt. Pleasant/
Sturtevant
Wastewater Treatment Plant
MP - Racine Industrial
MP - 24th & Howe
POE - Elmwood Park
LS06 - 3236 Drexel Ave
L06 - Maryland & Drexel
POE - Elmwood Park
Bryn Mawr Meter
S10 -
Spruce St &
Brentwood Dr
S11 -
Knoll Pl &
Norwood Dr
0 1,000 2,000
Feet
Legend
Treatment Plant
Storage Sites
Lift Stations
Meter Sites
Point of Entry
Safety Sites
Street Centerline
Sanitary Sewer, Other Communities
Force Main, RWWU Owned
Force Main, Non-RWWU
Interceptor Pipe, RWWU Owned
Interceptor Pipe, Non-RWWU
Water
Caledonia
Elmwood Park
Mount Pleasant
North Bay
Racine
Wind Point

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

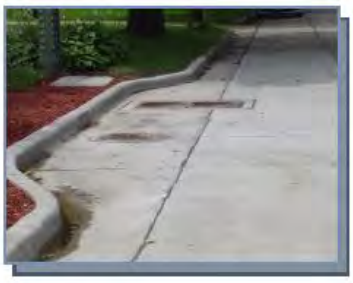
Lift Station #9
3908 Francis Drive

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

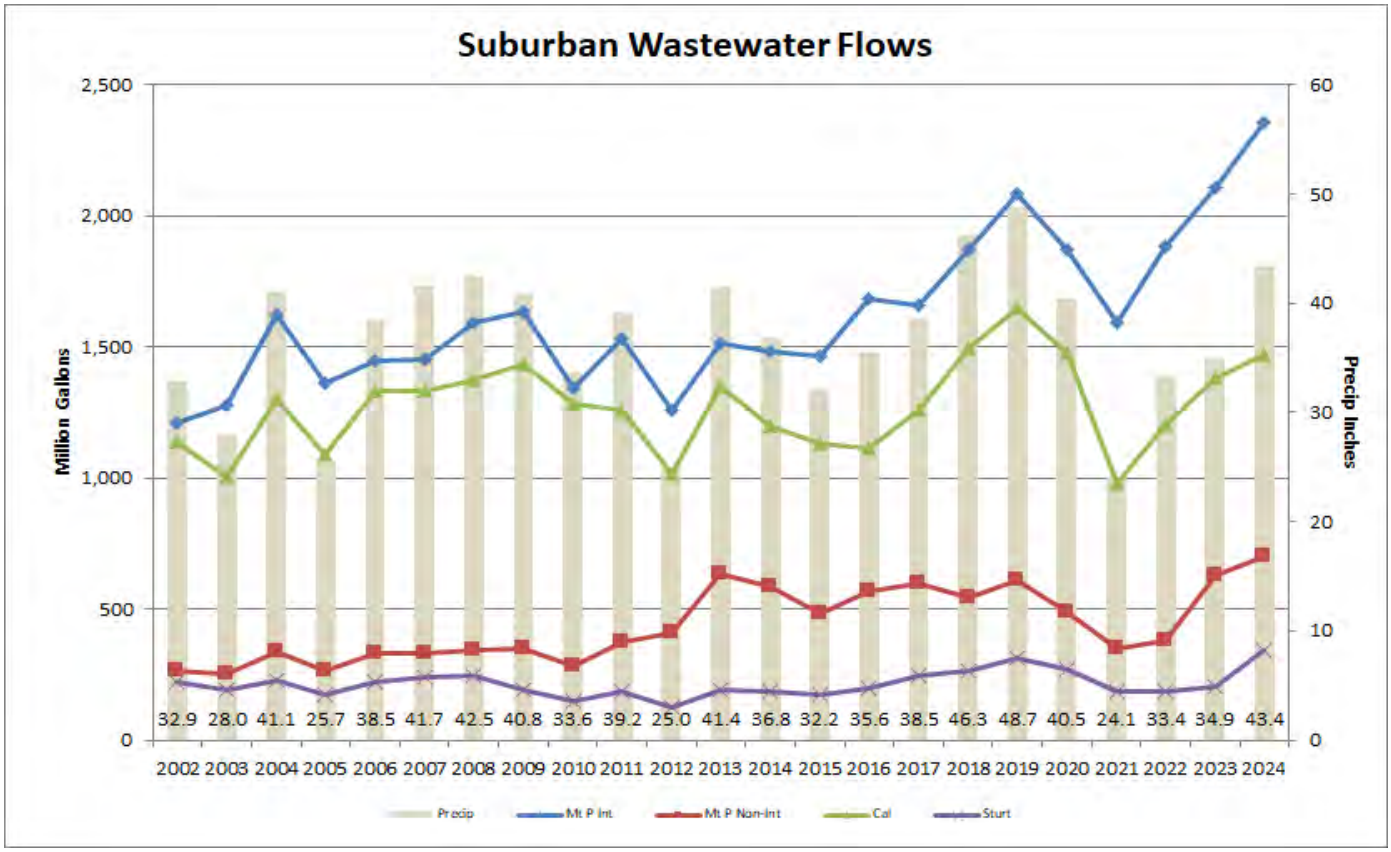


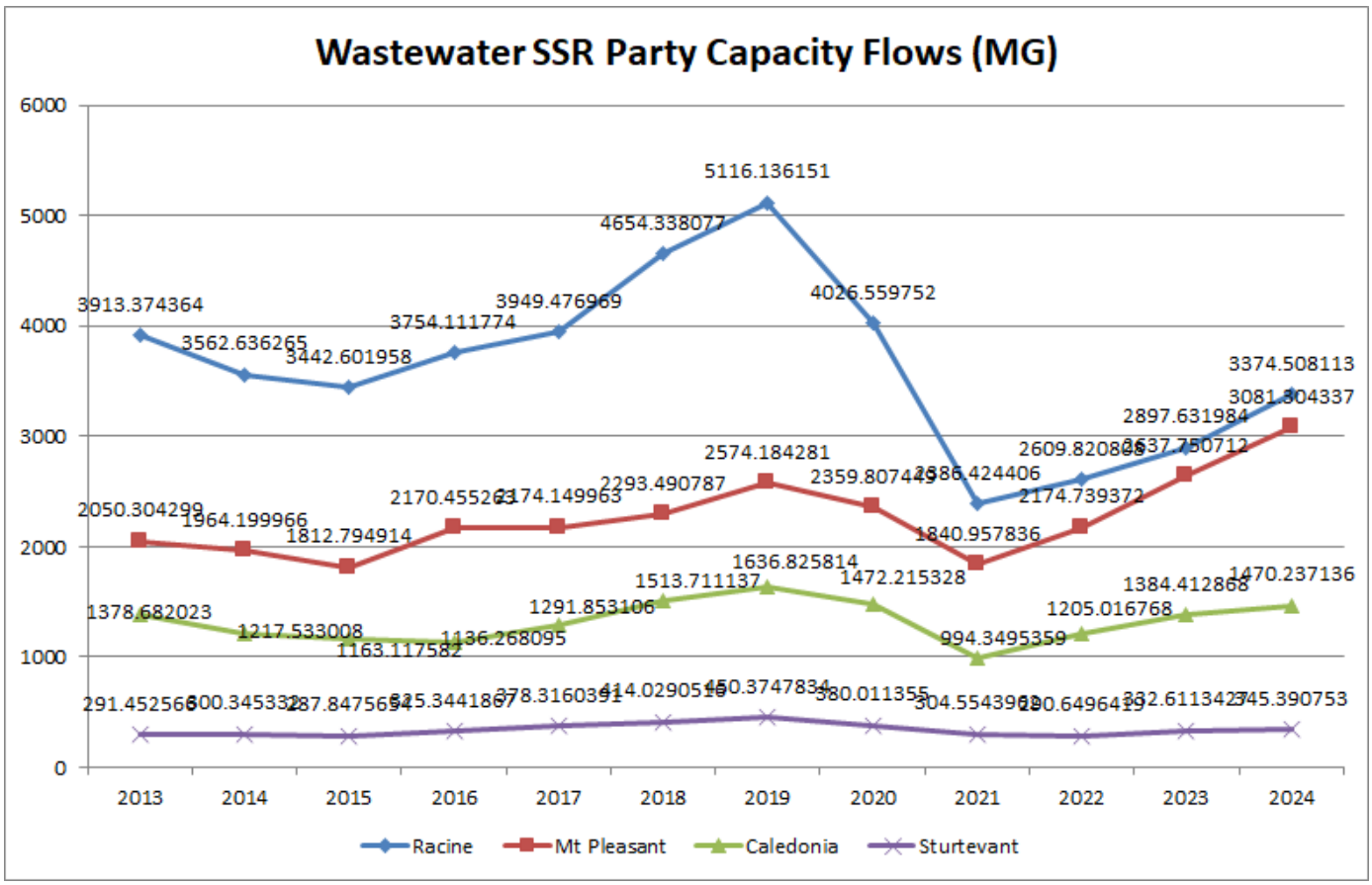
Lift Station #14
3205 Michigan Boulevard

2024	MG	MGD	% Plant Flow
TREATMENT PLANT	**8,336.56**	**22.78**	**484.85**
MOUNT PLEASANT INTERCEPTOR:			
INDUSTRIAL	123.15	0.34	1.48
RESIDENTIAL	1,986.48	5.44	23.83
OTHER INTERCEPTOR FLOW:			
RACINE	224.80	0.62	2.70
STURTEVANT	205.37	0.56	2.46
CALEDONIA (HWY V)	12.72	0.03	0.15
TOTAL INTER.	2,552.52	6.99	30.62
NON-INTERCEPTOR:			
MOUNT PLEASANT	625.70	1.71	7.51
RACINE	32.47	0.09	0.39
TOTAL NON-INTER.	658.17	1.80	7.89
CALEDONIA	1,434.46	3.93	17.21
NORTH BAY	23.78	0.07	0.29
ELMWOOD PARK	36.22	0.10	0.43

% APPROX.

2024	1st	2nd	3rd	4th	MG TOTAL
MOUNT PLEASANT INTERCEPTOR FLOW					
INDUSTRIAL	28.716	29.372	33.901	31.156	123.145
RESIDENTIAL	636.968	452.475	412.748	484.293	1,986.484
OTHER INTERCEPTOR FLOW					
RACINE	68.980	51.952	50.009	53.856	224.797
STURTEVANT	68.800	44.900	40.970	50.700	205.370
CALEDONIA (HWY V)	3.296	3.512	3.047	2.864	12.719
NON-INTERCEPTOR FLOW					
MT. PLEASANT	216.843	182.744	94.207	131.902	625.696
RACINE	10.988	8.507	5.967	7.009	32.471
CALEDONIA	549.489	312.819	248.378	323.771	1,434.457
NORTH BAY	6.423	9.107	3.831	4.415	23.776
ELMWOOD PARK	7.934	12.673	7.793	7.821	36.221
TOTAL (Mgal)	**1,598.437**	**1,108.061**	**900.851**	**1,097.787**	**4,705.136**


Suburban Wastewater Flows
Million Gallons
Precip Inches
2,500
2,000
1,500
1,000
500
0
60
50
40
30
20
10
0
32.9 28.0 41.1 25.7 38.5 41.7 42.5 40.8 33.6 39.2 25.0 41.4 36.8 32.2 35.6 38.5 46.3 48.7 40.5 24.1 33.4 34.9 43.4
2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024
Precip
Mt P Int
Mt P Non-Int
Cal
Sturt


Wastewater SSR Party Capacity Flows (MG)
6000
5000
4000
3000
2000
1000
0
3913.374364
3562.636265
3442.601958
3754.111774
3949.476969
4654.338077
5116.136151
4026.559752
2359.807445
2386.424406
2609.820888
2897.631984
3374.508113
2050.304299
1964.199966
1812.794914
2170.455263
2174.149963
2293.490787
2574.184281
1840.957836
2174.739372
2637.750712
3081.304337
1378.682023
1217.533008
1163.117582
1136.268095
1291.853106
1513.711137
1636.825814
1472.215328
994.3495359
1205.016768
1384.412868
1470.237136
291.452566
300.345332
287.8475654
325.3441867
378.3160351
414.0290516
450.3747834
380.011355
304.5543943
280.6496429
332.6113427
345.390753
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
Racine
Mt Pleasant
Caledonia
Sturtevant

Intergovernmental Sewer Agreement Exhibit E - Treatment Plant Capacity Last Revision #8 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.

Aerial View of the Wastewater Treatment Plant

1939 1968 1993 2005

Exhibit F1(a) – Conveyance Capacity Allocation
Last Revision #9 12-17-19

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

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 June 30, 2025 for 2024 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 2025 is for calendar year 2024.

CMAR Section Summaries and Grades for 2024:

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. Ammonia is a seasonal limit based on effluent pH.

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 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 ensure that the Operator-In-Charge is certified by the Department of Natural Resources (NR 114) in all subclasses required for the Racine Wastewater Treatment Utility. The Operator-In-Charge must be certified at the appropriate level to operate this plant and collection systems. 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. Optimization of holding tanks use is key to successful operation in wet weather. 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.

Implementation Schedule:

- Finalize the Facility Plan.
- Televise Utility-Owned Interceptor Sewers.
- 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 1 overflow in 2024.

Date	Location	Volume (Gallons)
1/8-31/2024	Johnson Park Lift Station – Force Main Break	208,997

BASEMENT BACKUPS

Number of Backups by Type (Owner or Utility responsibility)

The Utility responded to 118 calls in 2024. Three of the calls were due to a sewer main plug, none were due to possible nearby surcharged sewer mains, and 115 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

538,599 linear feet (40.19 % of the system)

Root Cutting Quantity

93,266 linear feet (6.96 % of the system)

Manhole Inspections:

940 (18.17% of the system)

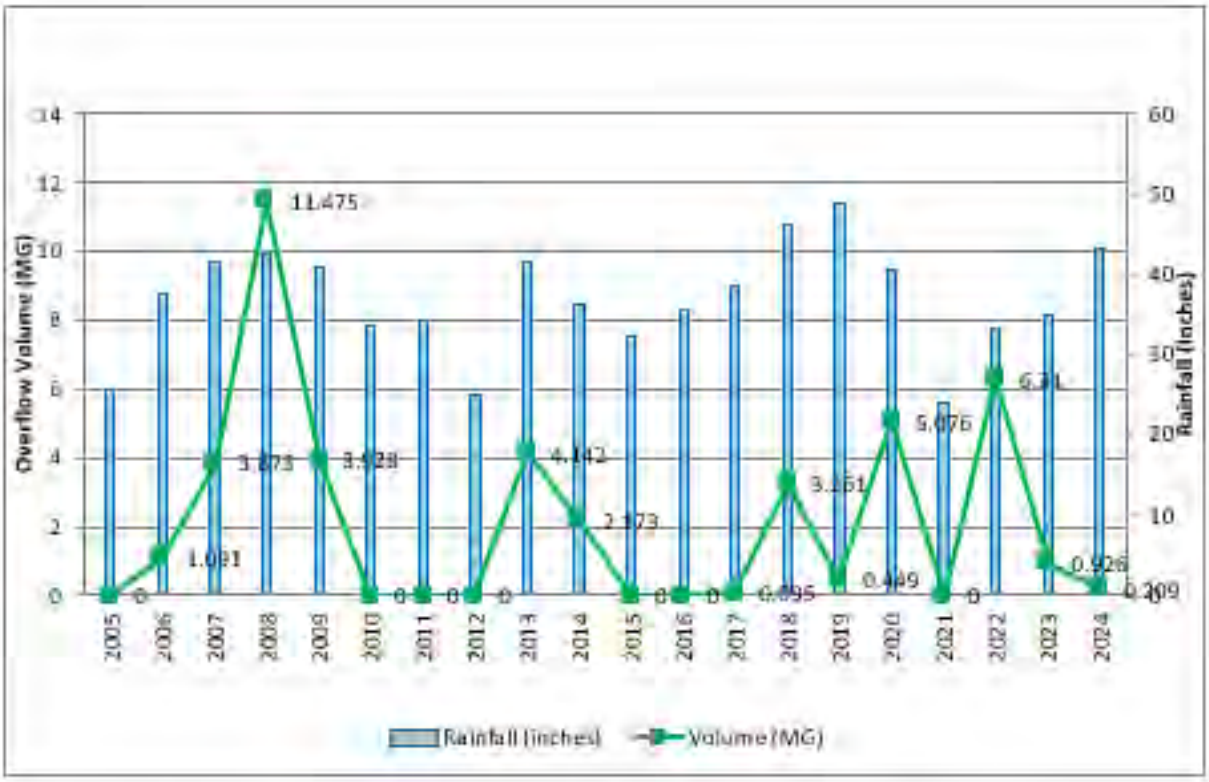
The Wisconsin Department of Natural Resources requires the completion of an annual CMAR as part of the Utility's WPDES permit. CMOM program elements are addressed in the CMAR reporting to the WDNR.

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.

Year	Number of Overflows	Total Wet Weather Events	Quantity (MG)	Annual Rainfall (inches)
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
2021	0	0	0	24.05
2022	20	1	6.310	33.36
2023	6	1	0.926	34.33
2024	**1***	**4**	**0.209**	**43.34**

*Overflow due to a force main failure- Not related to a wet weather event

Overflow Volume Vs. Annual Rainfall



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 Director, 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 Director and Superintendent. 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 on 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 tanks 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. 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, when all are in service is 3.6 hours at a flow of 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 around 95 degrees Fahrenheit with minimal temperature changes. 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. The conventional activated sludge process is used. The contents consist mainly of microbiological organisms (bugs) and organic material (wastewater). This is mixed by the introduction of air through 10,000 (9-inch diameter) membrane diffusers located along the length of each tank. The air also provides oxygen for the microorganisms which feed on the organic material 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:

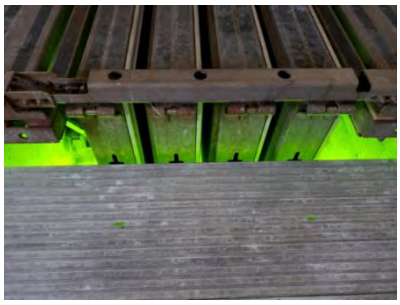
Three (3) Engine Driven Blowers:
#2 Engine 380 HP, Blower Capacity 9,600 CFM at 8.2 psig
#3 Engine 675 HP, Blower Capacity 15,000 CFM at 8.5 psig
#5 Engine 440 HP, Blower Capacity 9,600 CFM at 8.2 psig

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 number 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 consist 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.

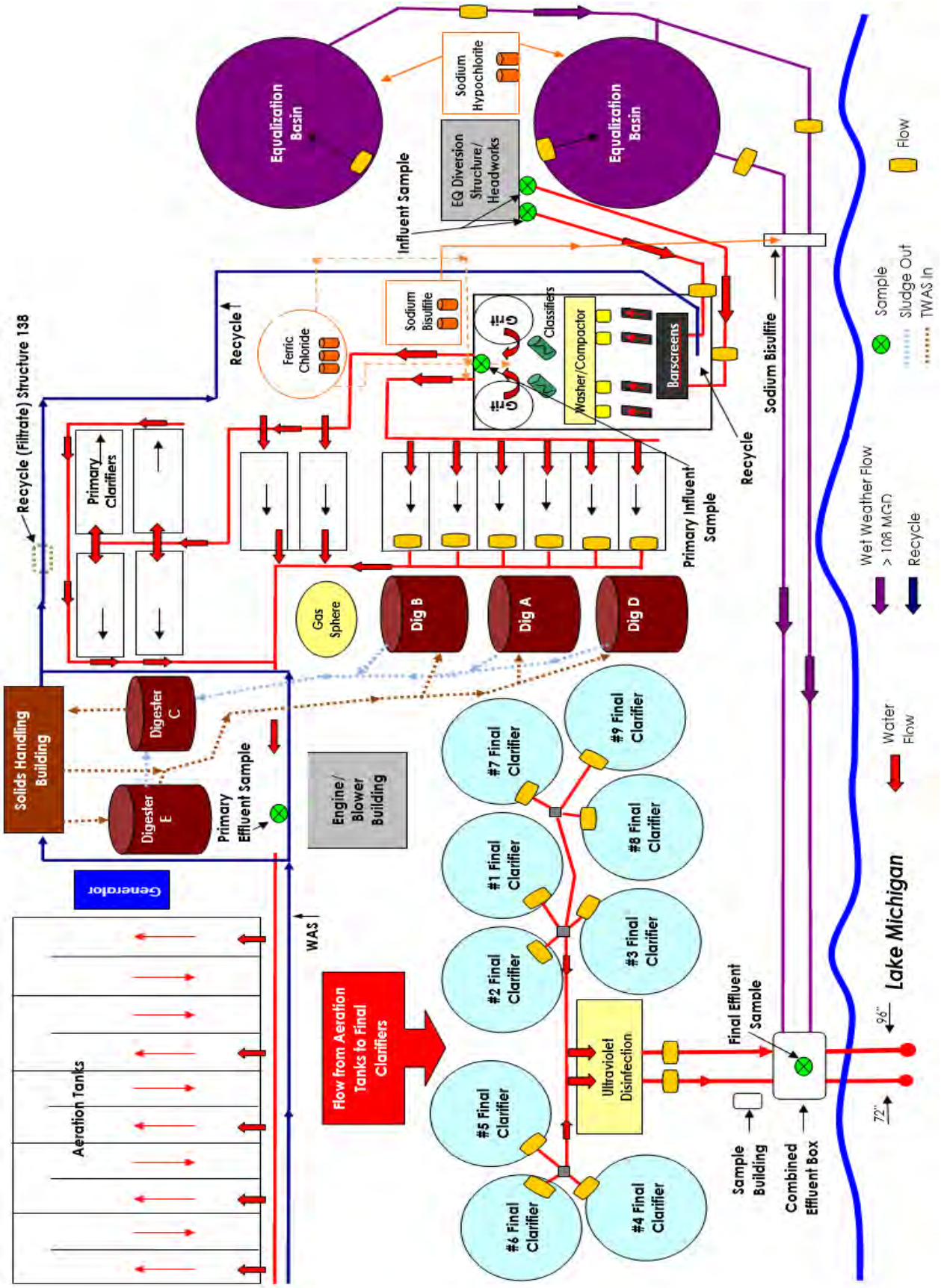
Five Tank Drainage Pumps: 700 gmp at 30 ft. TDH

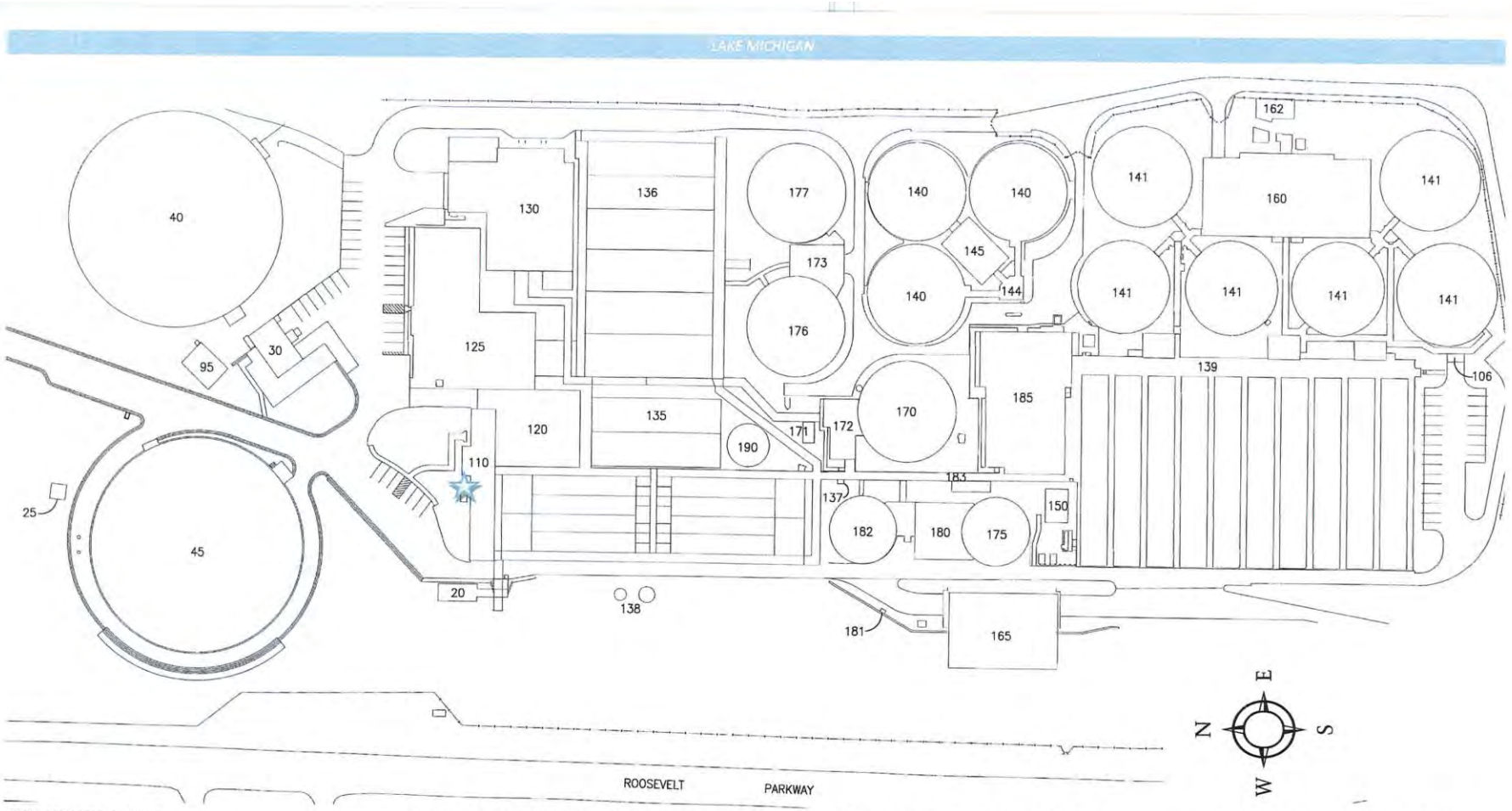
Pipe Gallery: Connection between primary plant and secondary plant. All necessary systems run through the pipe gallery.

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
95—HYPO BUILDING
106— VACTOR DUMP STATION
110—ADMINISTRATION BUILDING
120—CHEMICAL WING
125—PRETREATMENT BUILDING (REMOVALS)
125—LAB/OFFICE (NEW)
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" / SLUDGE STORAGE TANK
183—TUNNELS
185—MAIN EQUIPMENT BUILDING
190—GAS STORAGE SPHERE
250—GENERATOR BUILDING (OFF SITE)

Biosolids Management Program

Biosolids Loading Bay

Truck Full of Biosolids

- **The Utility generated over 11,000 wet tons of biosolids in 2024**
- **Solids content of the biosolids averaged around 20%**
- **Biosolids land applied to 583 acres of farmland**

Biosolids Storage Building

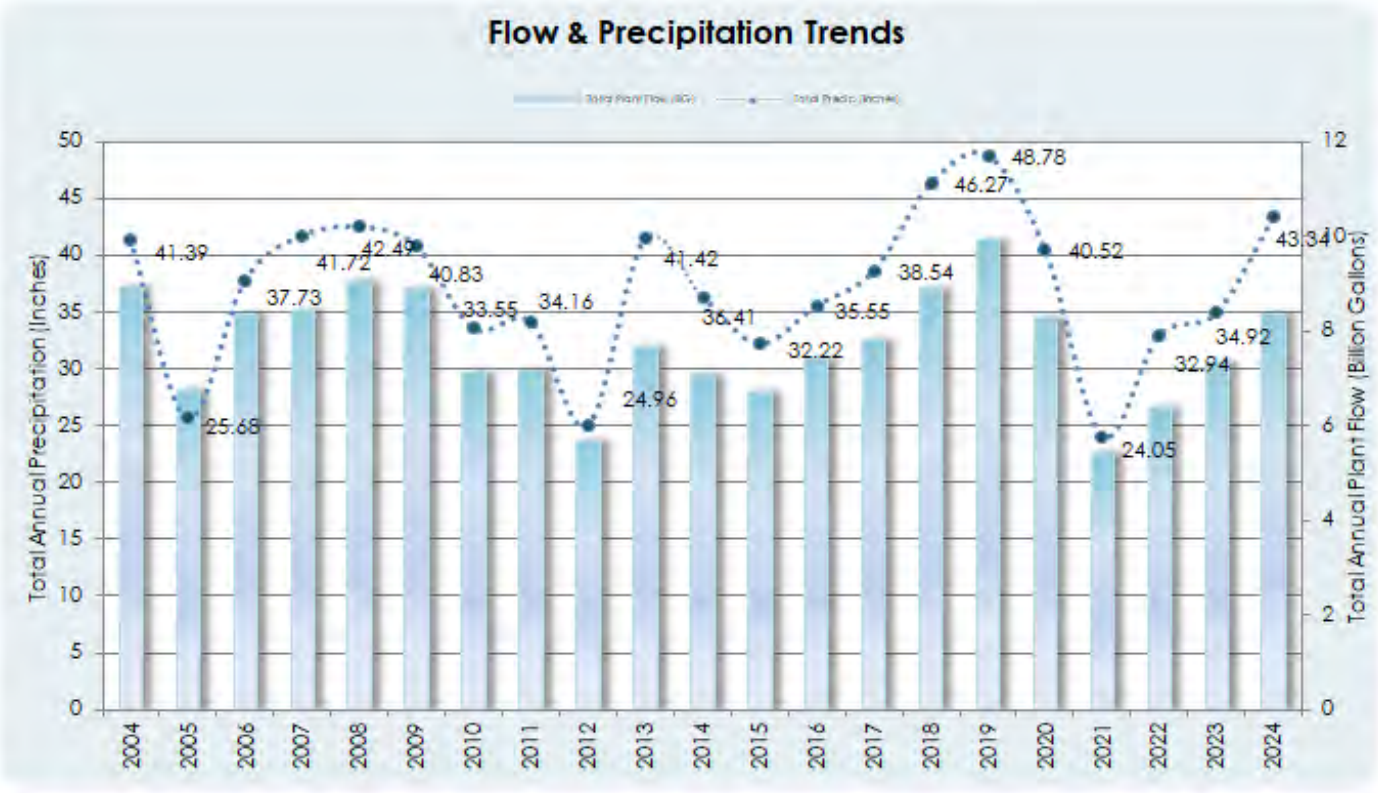
Spreading Biosolids

WASTEWATER OPERATION

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.

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.



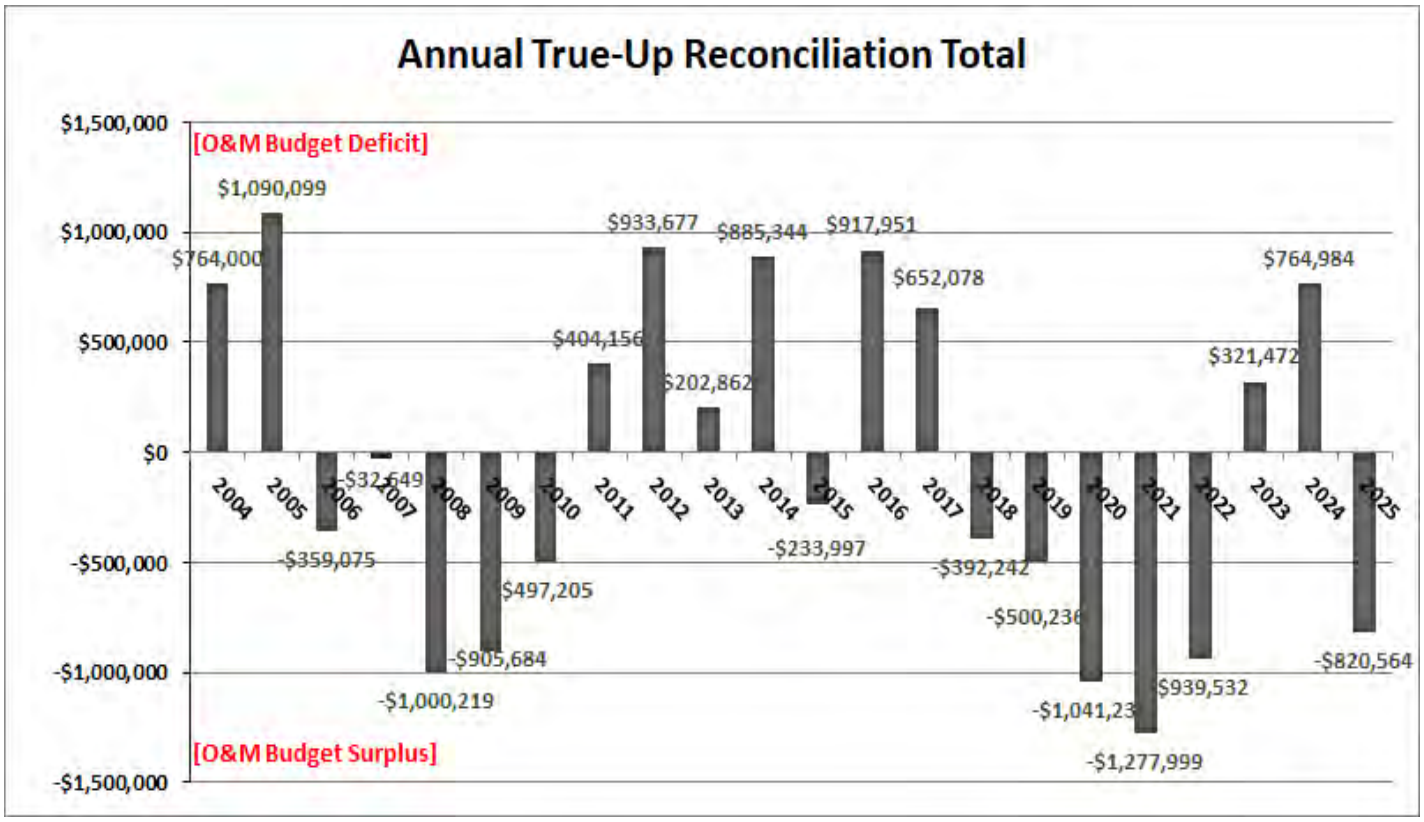
As a result of a 40-year storm that occurred in August of 2007 spreading over 6 inches of rain in a 36-hour period, the Utility was forced to study and address the concerns related to this event. Widespread surcharging occurred in the sewer system across the entire City as a result of this rainfall. 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 and 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.

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.

The True-up serves to reduce rates following high flow years of higher rainfall when the utility obtains a surplus in revenue above what is needed to pay for O&M, capital borrowing payments, and depreciation costs. The True-up serves to increase rates following low flow, dryer years when the utility experiences a deficit in revenue to meet cost needs. Thus, wastewater rates are subject to annual weather influence causing up and down fluctuations. During years of surplus, a portion of revenue may be directed to a Rate Stabilization Fund that can be used in years of deficit as a tool to minimize rate fluctuation.

2024 saw reasonable inflation of goods and services which impacted the buying power of the Utility with regard to energy, treatment costs, and labor costs. Precipitation in 2024 was just above average for the last 20 years but the frequency of the rainfalls and saturation levels of the soils also play a major role in I&I. Higher energy consumption due to construction at the facility and high chemical costs made budgeting challenging in 2024.



	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	22.30	23.80	0.00	30.04	34.60	0.00	17.39	20.20	0.00	33.60	57.60	0.03	24.19	30.40	0.00	28.56	34.40
2	0.00	20.20	23.10	0.00	27.65	32.60	0.00	17.41	21.40	0.86	75.24	48.40	0.00	24.26	30.30	0.29	27.43	31.80
3	0.00	18.90	22.50	0.00	28.23	30.50	0.00	16.89	21.00	0.90	85.52	47.10	0.21	25.16	30.40	0.00	27.50	29.20
4	0.00	18.80	20.30	0.00	23.41	28.10	0.00	14.96	18.50	0.13	67.42	20.80	0.00	25.04	50.40	T	23.40	26.60
5	0.00	17.60	20.90	0.00	22.91	26.70	1.09	38.46	41.90	0.07	47.16	22.30	0.68	36.48	56.60	0.31	24.67	28.50
6	0.06	19.30	24.70	0.00	23.01	25.70	0.00	29.16	37.80	0.00	25.60	28.60	0.00	26.79	30.60	0.05	26.40	24.80
7	0.10	18.30	21.30	0.00	20.55	24.00	0.00	25.62	28.50	0.00	29.60	35.40	0.00	38.24	58.80	0.00	25.30	24.00
8	0.00	17.70	20.20	0.00	21.55	23.90	0.00	25.52	37.20	0.32	36.68	46.60	1.05	50.60	59.60	0.00	21.75	24.00
9	0.20	29.50	47.00	0.00	20.55	23.00	0.57	37.38	43.20	0.00	33.41	43.00	0.00	27.20	58.20	0.20	20.00	23.40
10	0.51	40.50	47.60	0.00	19.97	22.90	0.00	30.97	34.10	0.00	34.81	41.00	0.14	35.16	41.80	0.02	19.45	21.20
11	0.13	29.10	32.40	0.00	19.44	24.10	0.00	27.54	30.90	0.00	30.27	35.40	0.21	34.36	36.90	0.00	18.55	21.50
12	0.17	35.70	48.30	0.00	18.92	20.90	0.00	25.06	27.90	0.01	24.67	33.40	0.00	31.51	43.50	0.00	19.41	20.90
13	0.83	51.17	50.90	0.00	18.29	19.90	0.00	22.58	27.40	0.00	26.51	31.40	0.00	31.54	41.60	T	17.70	20.20
14	0.40	45.46	49.80	0.00	18.49	20.60	2.01	27.07	43.50	0.00	25.34	32.60	0.24	33.60	41.60	0.00	16.50	19.80
15	0.00	36.72	40.90	0.40	20.02	28.60	0.68	22.32	28.30	0.00	21.99	30.70	0.09	29.84	35.60	0.00	15.82	19.80
16	0.00	29.10	34.20	0.00	23.73	22.60	0.00	20.48	34.00	0.00	21.33	24.30	0.00	28.69	32.50	0.00	18.19	20.40
17	0.00	26.50	30.30	0.00	19.39	23.70	0.00	20.98	31.30	1.01	42.37	58.10	0.01	27.19	31.60	0.11	16.41	21.00
18	0.00	27.60	33.90	0.00	19.54	22.20	0.00	24.76	29.90	0.03	30.77	38.20	0.00	24.24	29.20	0.00	16.32	19.10
19	0.06	24.00	30.60	0.00	18.89	19.80	0.00	22.38	27.10	0.14	30.26	31.80	0.00	23.89	29.10	0.00	15.86	18.10
20	0.00	22.20	26.20	0.00	17.84	21.10	0.00	22.73	26.30	0.00	26.93	34.20	0.74	38.95	58.80	0.00	15.58	17.40
21	0.00	20.20	23.90	0.00	17.31	19.70	0.00	21.27	28.90	0.00	24.62	25.70	0.71	45.80	49.00	T	15.28	17.30
22	0.00	19.80	23.40	0.00	17.21	21.30	0.15	21.20	30.50	0.00	22.57	28.90	0.00	35.10	48.40	0.25	18.07	23.60
23	0.17	23.10	31.60	0.00	20.87	21.90	0.23	23.30	34.80	0.03	22.71	23.50	0.00	32.38	39.70	0.35	20.95	26.80
24	0.14	26.30	32.20	0.05	17.49	21.70	0.00	23.20	33.60	0.00	20.93	23.40	0.00	29.36	33.70	0.06	20.73	22.90
25	0.26	27.50	31.90	0.00	18.58	22.40	0.00	25.00	35.00	0.00	21.57	22.80	0.23	25.00	34.00	0.26	22.03	24.80
26	0.37	43.70	46.90	0.00	16.97	20.40	0.45	35.70	51.80	0.00	18.97	24.50	0.00	30.71	50.00	0.00	16.98	20.80
27	0.19	41.60	57.90	0.00	17.84	21.20	0.04	30.60	45.10	0.08	20.00	26.00	0.71	31.03	40.70	0.00	16.89	18.70
28	0.00	38.70	32.50	0.21	17.98	21.50	0.00	26.30	32.50	0.67	32.87	45.10	0.13	31.59	57.00	0.00	17.41	20.80
29	0.00	35.80	39.80	0.00	17.95	22.50	0.00	24.40	29.60	0.30	35.27	45.10	1.10	54.09	59.40	0.55	22.92	25.90
30	0.00	34.60	38.40				0.79	38.10	59.80	0.02	27.32	37.10	0.00	43.51	59.20	0.00	18.19	22.20
31	0.00	32.80	36.40				0.00	33.30	37.50				0.00	35.81	40.50			
TOTAL	3.59	894.75		0.66	594.62		6.01	792.03		4.57	996.31		6.28	1011.31		2.45	604.25	
AVG	0.12	28.86	33.67	0.02	20.50	23.73	0.19	25.55	33.21	0.15	33.21	34.77	0.20	32.62	43.20	0.09	20.14	23.00
MAX	0.83	51.17	57.90	0.40	30.04	34.60	2.01	38.46	59.80	1.01	85.52	58.10	1.10	54.09	59.60	0.55	28.56	34.40
MIN	0.00	17.60	20.20	0.00	16.97	19.70	0.00	14.96	18.50	0.00	18.97	20.80	0.00	23.89	29.10	0.00	15.28	17.30

	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	18.37	19.20	0.00	19.10	18.80	0.00	13.47	17.70	0.00	13.67	24.30	0.00	13.48	14.80	0.00	16.13	19.40
2	0.04	19.14	22.70	2.02	67.51	26.30	0.00	13.72	17.90	0.00	13.53	15.40	0.00	13.70	15.60	0.00	16.07	18.00
3	0.47	19.57	20.50	0.00	35.36	36.30	0.00	13.63	17.10	0.00	12.89	14.40	0.00	13.89	17.00	0.00	17.80	17.50
4	0.00	16.19	18.90	0.00	26.22	32.30	0.00	13.43	15.40	T	12.49	14.70	0.16	13.68	16.80	0.00	15.62	16.90
5	0.45	21.09	23.30	0.35	25.33	30.50	0.00	13.41	14.40	0.00	12.12	15.70	0.68	28.18	38.00	T	14.53	16.30
6	T	17.05	20.80	1.45	59.69	51.30	0.01	12.43	14.80	0.00	13.56	15.20	0.33	21.98	30.20	0.00	15.77	15.90
7	0.00	20.03	23.20	0.00	43.70	50.00	0.00	12.51	14.90	0.00	12.17	23.50	0.40	17.77	21.20	0.00	16.82	16.60
8	0.32	17.99	19.00	0.00	34.27	35.50	0.00	11.99	16.80	0.00	12.45	23.60	0.00	16.20	18.80	0.00	17.88	16.60
9	0.00	16.59	18.50	0.00	24.39	29.60	0.00	13.26	14.70	0.00	11.68	21.90	0.00	15.22	19.00	0.00	17.05	20.00
10	0.46	18.66	19.90	0.00	21.35	26.80	0.00	11.86	14.60	0.00	11.90	19.70	0.23	19.93	25.40	0.00	16.95	14.90
11	0.00	14.82	18.50	0.00	22.28	24.40	0.00	12.39	14.30	0.00	11.62	16.00	0.17	18.52	21.50	0.00	16.67	14.30
12	0.00	14.88	17.20	0.00	20.82	23.20	0.00	11.68	14.00	0.00	13.17	27.20	0.00	16.95	19.20	0.02	15.57	13.90
13	0.00	13.96	17.20	0.00	19.63	20.90	0.00	11.96	13.40	0.61	15.05	23.40	0.00	16.52	34.10	0.00	15.73	13.60
14	0.37	23.10	24.70	0.00	18.34	20.30	0.00	12.06	14.50	0.25	14.29	17.50	0.88	39.20	48.10	0.00	16.38	15.10
15	1.30	45.58	50.30	0.03	20.00	27.20	0.00	12.00	15.20	0.86	36.21	50.10	0.01	30.55	33.80	0.26	19.60	19.10
16	0.62	44.51	48.90	0.50	19.95	25.80	0.00	12.20	14.50	0.64	29.26	36.20	0.00	22.62	25.50	0.00	15.96	16.90
17	0.01	31.62	38.70	0.13	21.71	27.30	0.00	11.40	13.70	0.00	19.38	22.20	0.00	20.88	23.80	0.00	14.01	17.50
18	0.00	22.96	26.10	0.21	21.93	26.70	0.00	11.82	14.30	0.00	16.91	19.70	0.00	25.69	20.90	T	13.48	17.00
19	0.00	20.50	22.70	0.00	20.56	22.50	0.00	11.01	14.00	0.00	14.57	18.90	0.63	40.36	37.70	0.00	13.41	15.50
20	0.00	18.32	21.70	0.00	17.33	21.10	0.20	11.67	15.10	0.00	14.66	19.30	T	33.97	34.50	0.32	15.56	18.40
21	0.00	17.41	21.10	0.00	17.37	19.20	0.00	11.14	15.10	0.00	14.59	16.80	0.15	29.21	35.60	0.00	17.85	17.40
22	0.00	17.17	19.80	0.00	16.31	19.00	0.02	16.71	25.80	0.00	12.22	16.70	0.16	34.16	32.40	0.00	18.79	17.80
23	0.00	16.13	18.70	0.00	15.88	17.60	0.70	14.74	15.80	0.00	13.80	15.70	0.05	28.82	29.40	0.00	20.01	16.60
24	0.03	15.83	18.80	0.00	15.69	19.20	1.07	33.72	47.20	0.00	13.64	15.70	0.00	26.33	26.80	T	20.17	18.60
25	0.00	15.60	17.00	0.00	15.42	18.60	0.57	22.50	33.90	0.34	15.34	18.00	0.00	20.59	23.10	0.00	19.56	16.70
26	0.00	14.76	17.30	0.00	14.90	17.60	0.00	17.81	20.70	0.00	14.16	17.90	0.00	19.96	21.70	0.00	21.02	17.40
27	0.00	14.56	18.00	0.00	14.90	17.20	0.00	15.37	18.20	0.00	13.19	17.90	0.00	18.15	21.60	0.03	19.71	20.70
28	0.00	14.19	18.20	0.00	14.18	17.00	0.00	14.83	18.30	0.00	13.69	16.40	0.00	18.39	24.10	0.13	22.45	20.80
29	T	22.26	44.30	0.00	12.97	17.20	0.00	14.59	18.40	0.00	13.26	15.80	0.01	16.67	20.20	0.00	20.72	19.60
30	0.94	21.15	28.50	0.18	15.43	18.60	0.00	14.22	16.30	0.00	13.21	15.10	T	15.71	20.20	0.00	20.57	18.30
31	0.00	17.90	22.00	0.01	13.87	17.50				0.00	13.11	14.83				0.00	20.56	19.30
TOTAL	5.01	621.89		4.88	726.39		2.57	423.53		2.70	461.79		3.86	667.28		0.76	542.40	
															Total Plant Flow (MG)		8336.55	
AVG	0.17	20.06	23.73	0.16	23.43	25.02	0.09	14.12	17.70	0.09	14.90	19.99	0.14	22.24	25.70	0.03	17.50	17.31
MAX	1.30	45.58	50.30	2.02	67.51	51.30	1.07	33.72	47.20	0.86	36.21	50.10	0.88	40.36	48.10	0.32	22.45	20.80
MIN	0.00	13.96	17.00	0.00	12.97	17.00	0.00	11.01	13.40	0.00	11.62	14.40	0.00	13.48	14.80	0.00	13.41	13.60

BOD-TSS-Phosphorus

	BOD					TOTAL SUSPENDED SOLIDS					PHOSPHORUS					FLOW		2023
	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	76	77	52	9	88%	77	106	42	6	92%	1.9	1.9	1.6	0.71	63%	28.86	894.75	17.77
February	108	113	66	12	89%	103	155	55	6	94%	2.6	2.8	2.3	0.79	70%	20.50	594.62	32.61
March	89	92	61	12	87%	93	125	56	6	94%	2.1	2.3	2.0	0.79	62%	25.55	792.03	38.22
April	81	79	46	14	83%	95	109	41	8	92%	1.8	2.1	1.6	0.77	57%	33.21	996.31	25.83
May	69	86	47	11	84%	75	116	44	6	92%	1.7	2.3	1.7	0.73	57%	32.62	1011.31	14.70
June	111	113	61	12	89%	122	169	60	7	94%	2.8	3.3	2.2	0.73	74%	20.14	604.25	12.08
July	118	129	63	10	92%	134	193	67	5	96%	3.2	3.7	2.4	0.73	77%	20.06	621.89	14.49
August	160	101	62	10	94%	195	154	69	5	97%	3.1	3.3	2.5	0.70	77%	23.43	726.40	16.35
September	158	167	85	11	93%	151	252	93	4	97%	4.0	5.2	3.5	0.70	83%	14.12	423.53	16.28
October	147	151	94	12	92%	135	210	62	6	96%	3.9	4.4	3.1	0.77	80%	14.90	461.79	18.98
November	112	106	69	8	93%	108	137	44	6	94%	2.9	3.1	2.0	0.75	74%	22.24	667.28	15.58
December	159	146	93	14	91%	138	187	58	6	96%	3.8	4.1	2.3	0.76	80%	17.50	542.40	19.45
AVG	116	113	67	11	89%	119	159	58	6	95%	2.8	3.2	2.3	0.74	71%	22.78	8336.56	20.12
2023	114	116	64	9	91%	110	153	55	5	95%	2.9	3.2	2.1	0.69	75%	20.12		
2022	124	137	70	8	93%	117	186	46	7	94%	3.4	3.8	2.1	0.71	78%	17.50		
2021	145	152	82	11	92	134	206	54	7	95	3.7	4.0	2.3	0.73	80	15.19		
2020	115	124	67	10	91	103	137	41	5	95	2.8	3.1	2.0	0.70	73	22.56		
2019	93	109	54	10	89	88	123	37	7	92	2.2	2.5	1.7	0.70	66	26.91		
2018	114	142	66	11	91	107	160	43	6	95	3	3	2	0.8	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

2021	MG Flow	AVG Daily Flow MGD	INF BOD	LBS BOD/Day	INF T.S.S.	LBS T.S.S./DA	INF P	LBS/P Day
January	894.75	28.86	76	18293	77	18533	1.9	457
February	594.62	20.50	108	18465	103	17610	2.6	445
March	792.03	25.55	89	18965	93	19817	2.1	447
April	996.31	33.21	81	22435	95	26312	1.8	499
May	1011.31	32.62	69	18772	75	20404	1.7	462
June	604.25	20.14	111	18644	122	20492	2.8	470
July	621.89	20.06	118	19741	134	22418	3.2	535
August	726.40	23.43	160	31265	195	38104	3.1	606
Septembe	423.53	14.12	158	18606	151	17782	4.0	471
October	461.79	14.90	147	18267	135	16776	3.9	485
Novembe	667.28	22.24	112	20774	108	20032	2.9	538
Decembe	542.40	17.50	159	23206	138	20141	3.8	555
Total	8336.56			7,553,110		7,891,391		182,204
AVG/Day	22.78		116	20,619	119	21,535	2.8	497

2020	MG Flow	AVG Daily Flow MGD	INF BOD	LBS BOD/Day	INF T.S.S.	LBS T.S.S./DA	INF P	LBS/P Day
January	550.93	17.77	113	16747	105	15561	2.9	430
February	913.20	32.61	84	22845	85	23117	2.1	571
March	1184.84	38.22	51	16256	53	16894	1.5	478
April	774.94	25.83	74	15941	76	16372	2.1	452
May	455.74	14.70	115	14099	106	12995	3.1	380
June	362.50	12.08	160	16120	147	14810	4.1	413
July	449.23	14.49	152	18369	154	18610	3.5	423
August	506.90	16.35	127	17318	128	17454	3.3	450
Septembe	488.43	16.28	147	19959	145	19687	3.6	489
October	588.26	18.98	110	17412	103	16304	2.9	459
Novembe	467.26	15.58	128	16632	111	14423	3.4	442
Decembe	602.85	19.45	107	17357	111	18006	2.6	422
Total	7345.08			6,343,635		6,196,766		164,169
AVG/Day	20.12		114	17,421	110	17,020	2.9	451

2022	MG Flow	AVG Daily Flow MGD	INF BOD	LBS BOD/Day	INF T.S.S.	LBS T.S.S./DA	INF P	LBS/P Day
January	389.61	12.57	150	15725	124	12999	4.3	451
February	346.83	12.39	155	16017	136	14053	4.2	434
March	573.06	18.49	117	18042	113	17425	3.1	478
April	937.91	31.26	67	17467	68	17728	1.8	469
May	858.40	27.69	77	17782	81	18706	2.2	508
June	481.14	16.04	116	15518	119	15919	3.3	441
July	412.85	13.32	132	14664	129	14330	3.9	433
August	383.77	12.38	140	14455	142	14661	4.3	444
Septembe	712.27	23.74	112	22175	131	25937	3.0	594
October	382.18	12.33	147	15116	131	13471	3.9	401
Novembe	376.20	12.54	145	15165	125	13073	3.9	408
Decembe	532.94	17.19	126	18064	108	15483	3.2	459
Total	6387.16			6,087,160		5,892,283		167,911
AVG/Day	17.50		124	16,682	117	16,149	3.4	460

Beginning in 2007, flow numbers are effluent flow.
o: operations/annual reports/Plant Loading

Date of Sample	Parameters (µg/L - micrograms/liter)																					
	Arsenic		Cadmium		Chromium		Copper		Lead		Molybdenum		Nickel		Selenium		Silver		Zinc		Mercury		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
01/10/24	< 8.3	< 8.3	< 1.3	< 1.3	4.1	< 2.5	25.4	3.7	< 5.9	< 5.9	5.8	5.4	5.9	<2.6	< 12.2	< 12.2	< 3.2	< 3.2	33.6	12.5	0.0387	0.00164		
02/06/24	< 8.3	< 8.3	< 1.3	< 1.3	3.6	< 2.5	34.2	10.3	< 5.9	< 5.9	9.0	7.1	4.7	4.3	< 12.2	< 12.2	< 3.2	< 3.2	54.0	18.9	0.00763	0.00106		
03/06/24	< 8.3	< 8.3	< 1.3	< 1.3	< 2.5	< 2.5	24.2	8.7	< 5.9	< 5.9	6.6	5.7	2.8	< 2.6	< 12.2	< 12.2	< 3.2	< 3.2	40.1	13.8	0.00847	0.00150		
04/09/24	< 8.3	< 8.3	< 1.3	< 1.3	< 2.5	< 2.5	26.6	10.1	< 5.9	< 5.9	6.5	4.8	4.2	6.8	< 12.2	< 12.2	< 3.2	< 3.2	34.7	17.1	0.00822	0.00169		
05/01/24	< 8.3	< 8.3	< 1.3	< 1.3	< 2.5	< 2.5	35.1	7.2	< 5.9	< 5.9	45.1	32.4	< 2.6	< 2.6	< 12.2	< 12.2	< 3.2	< 3.2	47.9	15.0	0.0143	0.000663	< 6	< 6
06/04/24	< 8.3	< 8.3	< 1.3	< 1.3	2.6	< 2.5	27.3	6.6	< 5.9	< 5.9	4.9	5.4	< 2.6	< 2.6	< 12.2	< 12.2	< 3.2	< 3.2	46.3	13.6	0.0138	0.00127		
07/09/24	< 8.3	< 8.3	< 1.3	< 1.3	3.2	< 2.5	44.3	5.2	< 5.9	< 5.9	9.6	9.2	2.8	< 2.6	< 12.2	< 12.2	< 3.2	< 3.2	83.7	< 11.6	0.0219	0.000872		
08/13/24	< 8.3	< 8.3	< 1.3	< 1.3	3.1	< 2.5	28.3	5.7	< 5.9	< 5.9	16.8	7.9	4.3	4.6	< 12.2	< 12.2	< 3.2	< 3.2	55.9	< 11.6	0.0286	0.00122		
09/04/24	< 8.3	< 8.3	< 1.3	< 1.3	16.7	< 2.5	29.7	5.9	< 5.9	< 5.9	7.6	6.4	8.1	4.9	< 12.2	< 12.2	< 3.2	< 3.2	42.7	< 11.6	0.0530	0.000900		
10/08/24	< 8.3	< 8.3	< 1.3	< 1.3	11.0	< 2.5	46.1	4.8	< 5.9	< 5.9	8.6	6.2	6.2	3.1	< 12.2	< 12.2	< 3.2	< 3.2	93.8	< 11.6	0.0580	0.000568		
11/06/24	< 8.3	< 8.3	< 1.3	< 1.3	6.9	< 2.5	25.5	3.8	< 5.9	< 5.9	7.5	5.3	5.1	3.2	< 12.2	< 12.2	< 3.2	< 3.2	56.0	< 11.6	0.0469	0.000786	< 2	< 2
12/03/24	< 8.3	< 8.3	< 1.3	< 1.3	3.5	< 2.5	35.7	7.4	< 5.9	< 5.9	7.6	9.3	11.7	5.7	< 12.2	< 12.2	< 3.2	< 3.2	71.2	< 11.6	0.0272	0.00117		
Minimum	< 8.3	< 8.3	< 1.3	< 1.3	< 2.5	< 2.5	24.2	3.7	< 5.9	< 5.9	4.9	4.8	< 2.6	< 2.6	< 12.2	< 12.2	< 3.2	< 3.2	33.6	< 11.6	0.00763	0.000568	< 2	< 2
Maximum	< 8.3	< 8.3	< 1.3	< 1.3	16.7	< 2.5	46.1	10.3	< 5.9	< 5.9	45.1	32.4	11.7	6.8	< 12.2	< 12.2	< 3.2	< 3.2	93.8	18.9	0.0580	0.00169	< 6	< 6
Average	< 8.3	< 8.3	< 1.3	< 1.3	4.6	< 2.5	31.9	6.6	< 5.9	< 5.9	11.3	8.8	4.7	2.7	< 12.2	< 12.2	< 3.2	< 3.2	55.0	7.6	0.0272	0.00111	< 4	< 4

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

The following WI certified laboratories contributed to data in table above: Pace (cert# 405132750)

The Racine WW Utility does not currently have discharge limits for metals with the exception of mercury. The mercury limit associated with the data above 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 Utility WPDES permit. Mercury is subcontracted to a WDNR certified laboratory. All other metals are analyzed by the Racine WW Utility Laboratory, WDNR certification #252003400, or subcontracted as needed.

Primary and Digested Biosolids

2024	Clarifiers 1-12 % SOL	Clarifiers 1-12 % VS	Post Digestion % SOL	Post Digestion % VS	VOL Reduction %
January	4.1	84	2.0	56.0	76
February	3.9	86	1.9	63.3	72
March	3.8	85	1.8	64.0	69
April	4.2	79	1.9	60.4	59
May	4.1	81	2.0	57.8	68
June	4.2	77	1.9	60.5	54
July	4.1	79	2.0	58.6	62
August	4.1	77	2.0	53.5	66
September	3.7	76	2.1	60.8	51
October	3.8	76	1.8	52.6	65
November	4.0	77	2.0	59.3	56
December	3.9	81	2.0	63.3	60
Average	**4.0**	**80**	**2.0**	**59**	**63**

2023	Clarifiers 1-12 % SOL	Clarifiers 1-12 % VS	Post Digestion % SOL	Post Digestion % VS	VOL Reduction %
January	4.2	82	2.0	60.8	66
February	4.2	82	1.8	61.0	66
March	3.3	82	1.9	66.3	57
April	3.8	80	1.9	62.5	58
May	4.7	78	2.0	61.8	54
June	4.8	79	2.0	55.7	67
July	4.5	79	2.1	58.3	63
August	4.5	77	2.0	64.2	46
September	4.0	78	2.0	63.7	51
October	3.6	80	2.0	58.3	65
November	3.9	83	2.1	58.0	72
December	3.8	84	1.9	60.0	71
Average	**4.1**	**80**	**2.0**	**61**	**62**

2022	rifiers 1-12 % SOL	rifiers 1-12 % VS	Post Digestion % SOL	Post Digestion % VS	VOL Reduction %
January	4.0	81	2.0	62.8	60
February	3.5	81	1.9	62.8	60
March	4.3	81	2.1	61.3	63
April	5.0	77	2.1	66.7	40
May	4.8	78	2.2	58.8	60
June	4.7	77	2.2	66.3	41
July	4.6	78	2.2	57.0	63
August	3.8	77	2.0	58.0	59
September	4.3	72	2.0	59.3	43
October	4.4	76	1.9	62.7	47
November	4.1	78	2.3	58.0	61
December	4.4	80	2.2	61.8	60
Average	**4.3**	**78**	**2.1**	**61**	**55**

% 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	10	10	10	8	37	75	0.974	24	14	17	12	67
February	10	10	10	9	24	63	0.615	22	13	16	12	63
March	11	10	11	10	24	66	0.571	21	14	18	14	67
April	10	11	11	10	27	69	0.643	21	13	20	11	65
May	13	12	13	12	21	71	0.420	22	16	18	15	71
June	11	11	11	10	29	72	0.674	23	15	18	13	69
July	11	11	12	10	31	75	0.705	27	17	21	13	78
August	10	10	10	10	32	72	0.800	26	15	22	14	77
September	12	11	11	10	39	83	0.886	29	18	20	16	83
October	12	13	11	12	36	84	0.750	27	16	19	15	77
November	12	11	12	11	32	78	0.696	27	15	18	14	74
December	11	11	11	11	26	70	0.591	24	13	17	12	66
AVG	**11**	**11**	**11**	**10**	**30**	**73**	**0.694**	**24**	**15**	**19**	**13**	**71**

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 mixtur is dewatered by belt filter presses and auled from the plant to storage and ultimately land application. Due to WPDES permit changes regarding effluent ammonia limits in 2011, proc control changes were implemented in 2010 that reduced biological solids (thus reducing total tons entering the digesters and ultimately leaving the plant.

Month	Days	Hours	MG	% SOL	Dry Tons	DT/Day	Dry Tons Capture	% SOL	Wet Tons	$/DT	POLY $	Polymer Dose LBS	Polymer Dose LB/D.T.	lb/DT Based on Feed	Haul Cost &/W.T.	Haul Cost $	Landfill Fee
January	16	471.2	2.425	2.0	202	6.5	199	98	20.0	992.71	61	12,029.26	4,831	24.3	23.9	32.56	32,322.64	
February	17	383.1	1.894	2.1	166	5.9	153	92.3	19.5	784.66	66	10,060.97	4,041	26.4	24.4	32.56	25,548.53	
March	15	401.1	1.990	1.8	149	4.8	149	100	18.6	836.23	75	11,104.95	4,460	29.9	29.9	32.56	27,227.65	
April	17	446.1	2.036	2.0	170	5.7	159	93.4	19.3	822.13	60	9,575.54	3,846	24.2	22.6	32.70	26,883.65	
May	17	500.6	2.298	1.9	182	5.9	182	99.9	19.4	937.12	65	11,767.14	4,726	26.0	26.0	32.70	30,643.82	
June	14	421.1	2.080	1.9	165	5.5	163	98.9	20.3	802.50	60	9,824.22	3,945	24.2	23.9	32.70	26,241.75	
July	18	531.4	2.707	1.9	214	6.9	214	99.8	20.3	1,057.18	69	14,811.77	6,489	30.3	30.3	32.50	34,358.35	
August	17	481.6	2.384	2.0	199	6.4	194	97	20.2	958.17	47	9,068.26	5,966	30.8	30.0	32.50	31,140.53	
September	15	446.3	2.385	2.1	209	7.0	189	90.4	20.6	916.80	44	8,254.42	5,431	28.8	26.0	32.50	29,796.00	
October	18	539.8	2.748	1.9	218	7.0	213	97.7	20.2	1,053.36	48	10,109.37	6,651	31.3	30.5	32.40	34,128.86	
November	14	410.7	2.180	2.0	182	6.1	181	99.4	20.2	894.71	42	7,519.74	4,947	27.4	27.2	32.40	28,988.60	
December	14	403.8	1.976	2.0	165	5.3	165	100.1	20.5	835.90	39	6,466.37	4,254	25.8	25.8	32.40	27,083.16	
Total	192	5,437	27.103		2,220.63	72.99	2,158.85			10,891.47		120,592.01	59,587			32.54	$354,363.54	
								Wet Tons/Day		29.84		Polymer lbs/day	163.251093					
AVG	16	453.1	2.259	2.0	185.1	6.1	180	97.3	19.9	907.62	56	10,049.33	4,966	27.5	26.7	32.5	$29,530.30	
2023	189	5312	26.760	2.0	2239		2160		21.4	10141	64	137,302	55,142	26	24.6	32.98	$334,452	
2022	191	5224	26.784	2.1	2386		2228		21.9	10287	56	124,891	55,146	25	23.1	32.69	$336,287	
2021	194	5216	25.989	2.2	2408		2311		21.5	11077	41	94,633	53,047	23	22.0	29.03	$321,509	
2020	198	5300	26.493	2.3	2478		2325		21.7	10725	41	95,985	54,849	24	22.3	40.55	$434,944	
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	
																$2.024 Polymer cost/lb		

Gravity Belt Thickener Summary

	Days	WAS Feed MG Total	TWAS GPD	TWAS MG	mg/l WAS GPD	mg/l WAS (Lab)	Pounds In	Pounds Out	%S TWAS (Lab)	Belt Speed	WAS GPM	TWAS GPM	Total Hours	Inch	Polymer Gal	Polymer Pounds	Water Rate	Conc.	Batches	Poly Dosage lbs/tons	Polymer Cost	$ per lb Out
January	31	15.684	0.512	1.1390	0.0367	3220	13760	15628	5.10	12	373	26.51	744.0	16.09	197	1695	5	0.40	301	10	$ 4,579.26	$ 0.29
February	29	12.234	0.437	0.7020	0.0251	2891	10535	10094	5.00	15	311	16.82	696.0	11.45	140	1206	5	0.40	203	10	$ 3,296.09	$ 0.33
March	31	10.021	0.323	0.8810	0.0284	3059	8247	12562	5.30	15	234	19.75	720.0	10.4	127	1094	5	0.40	209	12	$ 2,967.25	$ 0.24
April	28	8.665	0.289	0.7440	0.0248	3460	8335	11302	5.10	15	243	18.45	609.0	8.5	104	891	5	0.40	170	9	$ 1,972.36	$ 0.17
May	25	8.920	0.288	0.6490	0.0209	3704	8890	11042	5.10	15	206	14.54	576.0	15.0	184	1580	5	0.40	241	10	$ 203.07	$ 0.02
June	29	10.337	0.345	0.8320	0.0277	3553	10211	11485	4.80	15	264	19.93	696.0	15.42	189	1624	5	0.40	282	13	$ 2,043.93	$ 0.18
July	31	13.331	0.430	0.9670	0.0312	3476	12467	10926	4.20	15	313	21.65	744.0	17.1	209	1797	5	0.40	327	11	$ 4,845.44	$ 0.44
August	31	12.386	0.400	0.9830	0.0317	3618	12056	10843	4.10	15	296	22.01	744.0	15.4	188	1620	5	0.40	292	11	$ 4,874.25	$ 0.45
September	30	15.151	0.505	1.1560	0.0385	2588	10900	11569	3.60	15	377	26.75	711.0	27.9	342	2939	5	0.42	463	21	$ 4,488.09	$ 0.39
October	31	16.205	0.523	1.1020	0.0355	2504	10917	11859	4.00	15	376	24.69	721.0	28.9	354	3048	5	0.46	478	20	$ 4,619.20	$ 0.39
November	30	17.167	0.572	0.9530	0.0318	2518	12015	11922	4.50	15	423	22.06	720.0	20.9	257	2206	5	0.40	380	15	$ 3,541.19	$ 0.30
December	31	13.405	0.432	0.7980	0.0257	2157	7780	9446	4.40	15	307	17.88	744.0	15.3	188	1616	5	0.40	241	14	$ 1,966.26	$ 0.21
Sum		153.706		10.906									8425.0	202.4	2479	21316			3587		$ 39,396.39	
Avg		12.809	0.421	0.9088	0.0298	3062	10509	11557	4.60	15	310	20.84	702.1	16.9	207	1776		0.41	299	13		$ 0.28

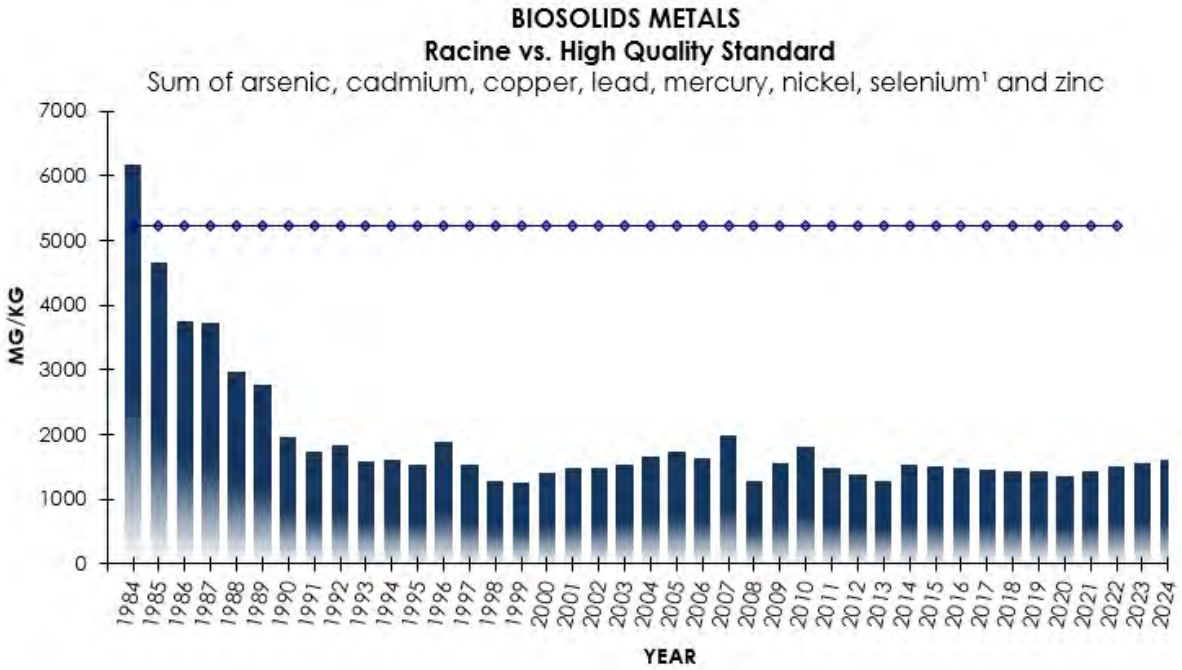
Biosolids Metal Analysis

Metals in Biosolids 2024

Sample Date	% Solids	As mg/kg	Cd mg/kg	Cr mg/kg	Cu mg/kg	Pb mg/kg	Mo mg/kg	Ni mg/kg	Se mg/kg	Zn mg/kg	Hg mg/kg	pH
1/10/2024	19.2	< 8.0	1.0	76.6	606	29.3	24.8	36.0	< 7.1	933	0.50	7.9
2/5/2024											0.57	
3/6/2024	17.7	< 8.4	1.2	69.8	620	30.8	23.6	32.1	11.9	917	0.43	7.9
4/9/2024											0.64	
5/1/2024	18.9	< 8.3	1.1	60.3	560	33.8	16.9	31.1	10.0	824	0.47	8.2
6/4/2024											0.53	
7/9/2024	18.8	< 7.7	1.2	71.2	599	33.4	21.3	31.0	11.2	929	0.57	7.8
8/13/2024											0.46	
9/4/2024	19.2	< 7.3	1.4	82.9	728	37.0	23.4	34.1	< 6.6	963	0.51	8.0
10/8/2024											0.52	
11/6/2024	18.9	< 7.3	1.3	128	570	30.6	27.6	33.6	7.3	952	0.47	8.0
12/3/2024											0.43	
MINIMUM	17.7	< 7.3	1.0	60.3	560	29.3	16.9	31.0	< 6.6	824	0.43	7.8
MAXIMUM	19.2	< 8.4	1.4	128	728	37.0	27.6	36.0	11.9	963	0.64	8.2
AVERAGE	**18.8**	**< 7.8**	**1.2**	**81**	**614**	**32**	**23**	**33**	**6.7**	**920**	**0.51**	**8.0**
HQ Limit	NA	41	39	NA	1500	300	NA	420	100	2800	17	NA

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

Results above reported on a dry weight basis (dwb)



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 declinced after the Industrial Pretreatment Program went into effect in 1984. Since 1985 Racine biosolids have been considered High Quality Sludge and 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

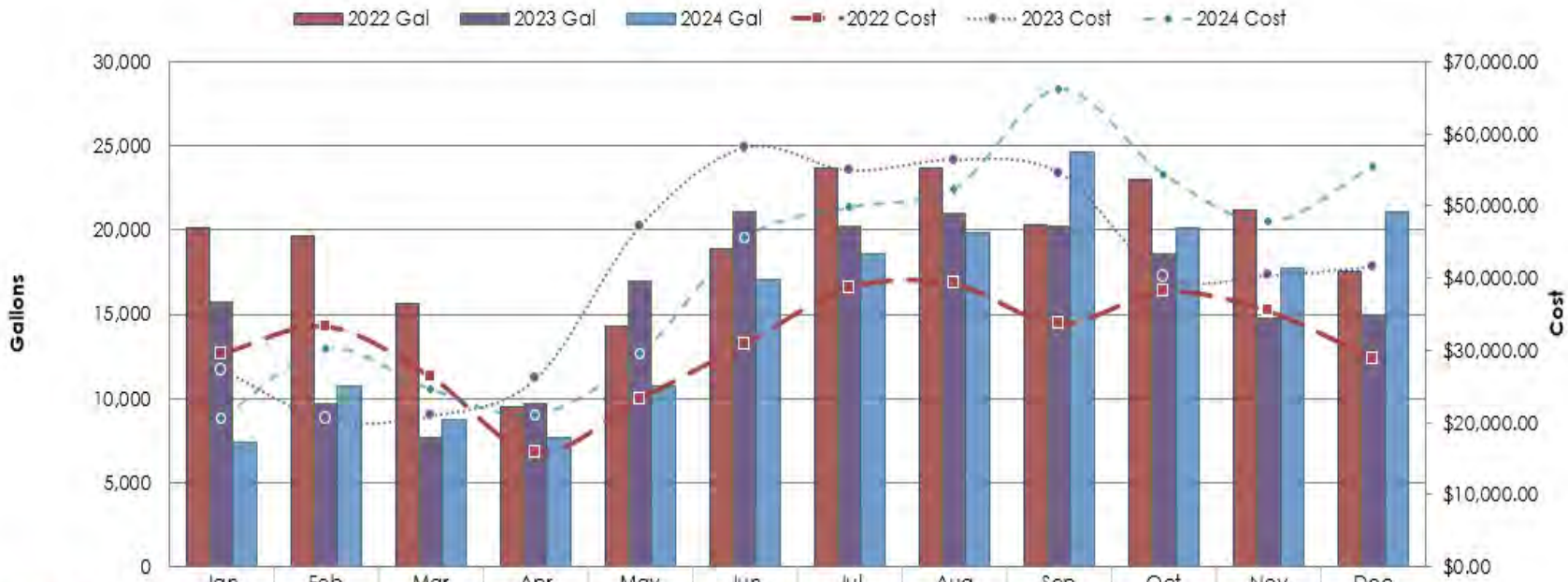
2024	Flow MGD	AER MLSS	AER MLVSS	RAS TSS AVE	RAS VSS AVE	MLSS % VM	RAS % VM	SV 30	SVI	WAS MGD	RAS MGD	RAS MGD	SRT	PRI BOD	F/M Ratio	E-Coli #/100 ML	Fecal's #/100 ML
January	28.74	1820	1465	3220	2603	81	81	187	103	0.5	43.49	42.99	6	52	0.19	63	15
February	20.50	1668	1378	2891	2374	83	82	136	82	0.46	27.78	27.32	7	66	0.19	295	83
March	25.55	1558	1271	3060	2505	82	82	112	73	0.33	23.42	23.08	8	61	0.24	204	75
April	30.24	1606	1275	3460	2708	79	78	109	68	0.33	25.91	25.58	8	46	0.22	496	255
May	32.33	1846	1485	3704	2984	81	81	140	76	0.38	29.87	29.49	6	47	0.26	174	72
June	20.14	1728	1370	3553	2828	77	80	138	79	0.34	18.96	18.62	12	61	0.22	282	163
July	19.98	1702	1342	3476	2729	79	79	185	108	0.43	20.49	20.06	4	63	0.22	283	165
August	22.43	1806	1398	3618	2798	77	77	175	96	0.42	22.96	22.54	5	62	0.24	293	302
Septembe	14.12	1839	1358	2588	1922	74	74	174	95	0.53	28.88	28.35	6	85	0.2	159	123
October	14.90	1761	1324	2504	1935	75	77	206	119	0.54	30.95	30.41	6	94	0.24	181	109
Novembe	22.24	1541	1209	2518	1977	79	78	153	102	0.55	34.54	33.99	6	69	0.24	75	42
Decembe	17.50	1616	1308	2157	1764	81	82	115	72	0.46	30.26	29.81	8	93	0.25	77	51
AVG	22.39	1708	1349	3062	2427	79	79	153	89	0.44	28.13	27.69	7	67	0.23	215	121
MAX	32.3	1846	1485	3704	2984	83	82	206	119	0.55	43.5	42.99	12	94	0.26	496	302
MIN	14.1	1541	1209	2157	1764	74	74	109	68	0.33	18	18.62	4	46	0.19	63	15
2023	20.10	1770	1408	2980	2379	80	80	141	80	0.41	31.68	31.27	7	64	0.18	146	79
2022	17.35	1785	1433	3075	2471	80	81	138	78	0.47	27.65	27.18	8	70	0.16	191	97
2021	15.18	1744	1406	3097	2495	80	81	133	76	0.37	22.39	22.01	8	82	0.18	232	101
2020	22.11	1685	1325	3468	2729	79	79	137	82	0.36	25.06	24.70	7	67	0.21	120	124
2019	26.90	1816	1432	3814	3009	79	79	127	71	0.32	28.55	28.23	10	54	0.20	143	134
2018	24.27	1788	1414	3611	2846	79	79	136	76	0.35	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.

o: operations/annual reports/Copy of Secsum

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 a purified byproduct of the steel industry. Because of this, when the steel industry experiences an economic downturn, the price of ferric chloride 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 increases of ferric chloride dosage due to the higher concentration of phosphorus in the wastewater. Plant staff added pumps, piping and metering controls for phosphorus removal in the final clarifiers.

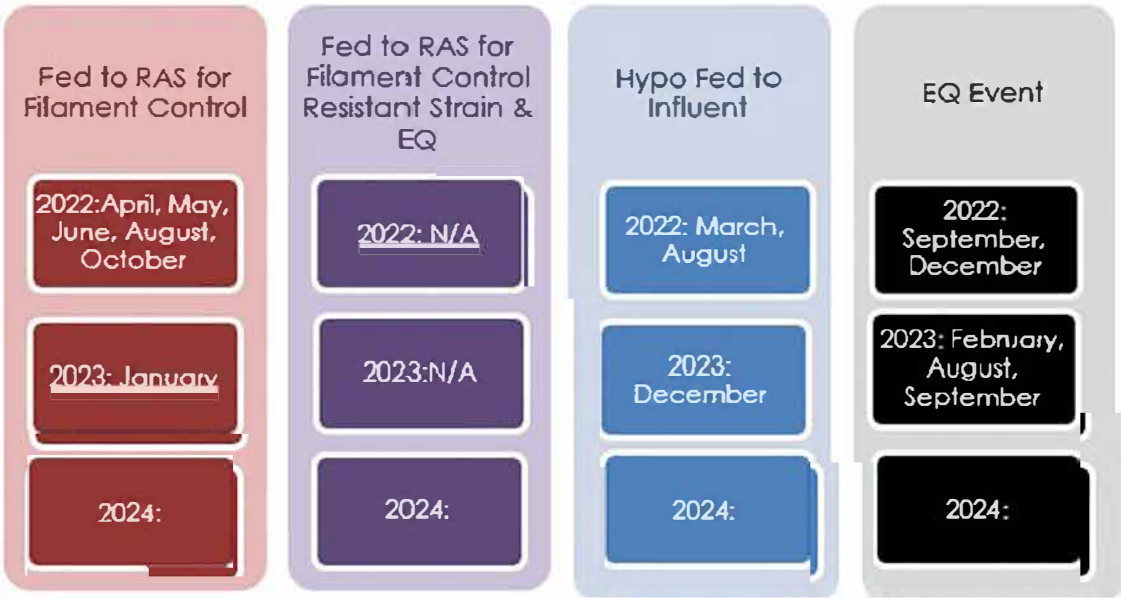


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2022 Gal	20,141	19,683	15,592	9,534	14,312	18,881	23,694	23,623	20,365	22,968	21,202	17,565
2023 Gal	15,752	9,717	7,662	9,732	16,971	21,072	20,267	20,972	20,192	18,626	14,746	14,946
2024 Gal	7,409	10,761	8,700	7,702	10,713	17,034	18,570	19,855	24,661	20,157	17,752	21,074
2022 Cost	$29,610.21	$33,404.72	$26,439.97	$15,850.68	$23,354.01	$30,889.35	$38,740.38	$39,264.43	$33,715.71	$38,176.42	$35,518.72	$28,957.24
2023 Cost	$27,406.51	$20,530.45	$20,967.76	$26,108.07	$47,239.34	$58,096.97	$54,913.86	$56,436.56	$54,621.43	$40,343.76	$40,405.91	$41,607.11
2024 Cost	$20,605.03	$30,237.48	$24,661.45	$21,133.16	$29,540.25	$45,576.34	$49,759.12	$52,427.80	$66,128.48	$54,358.48	$47,788.04	$55,442.61

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 be replenished for effective disinfection.

	2022		2023		2024	
	Gallons	Cost	Gallons	Cost	Gallons	Cost
January	0	$0	875	$2,186	3,478	$8,681
February	0	$0	4,235	$10,570	1,543	$3,851
March	2,761	$2,982	0	$0	546	$1,363
April	518	$559	0	$0	7,361	$16,023
May	469	$507	0	$0	8,857	$19,189
June	1,617	$1,746	0	$0	2,523	$5,465
July	0	$0	0	$0	3,096	$6,707
August	5,555	$6,249	259	$646	7,708	$16,697
September	2,986	$1,167	420	$1,048	0	$0
October	182	$442	0	$0	553	$1,198
November	0	$0	0	$0	847	$1,749
December	1,869	$4,608	2,603	$6,497	0	$0
TOTAL	15,957	$18,261	8,392	$20,948	36,513	$80,921



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.

Racine Wastewater Treatment Plant
Ammonia and pH Data
2024

	Ammonia Final Effluent	TWA EFF pH	Limit Nov - Apr at TWA pH
January	4.38	7.18	39
February	6.05	7.09	44
March	6.31	7.28	35
April	8.68	7.25	35
May	7.33	7.13	39
June	15.10	7.33	31
July	12.20	7.00	44
August	17.10	7.18	39
September	21.90	7.17	39
October	15.50	7.23	35
November	6.13	7.18	39
December	14.00	7.31	31
AVG	11.22	7.19	38
MAX	21.90	7.33	44
MIN	4.38	7.00	31

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

SODIUM BISULFITE SUMMARY

Sodium bisulfite (NaHSO3) 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. NaHSO3 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. NaHSO3 used for wastewater treatment usually is purchased at about 37% concentration. The solution is acidic 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.

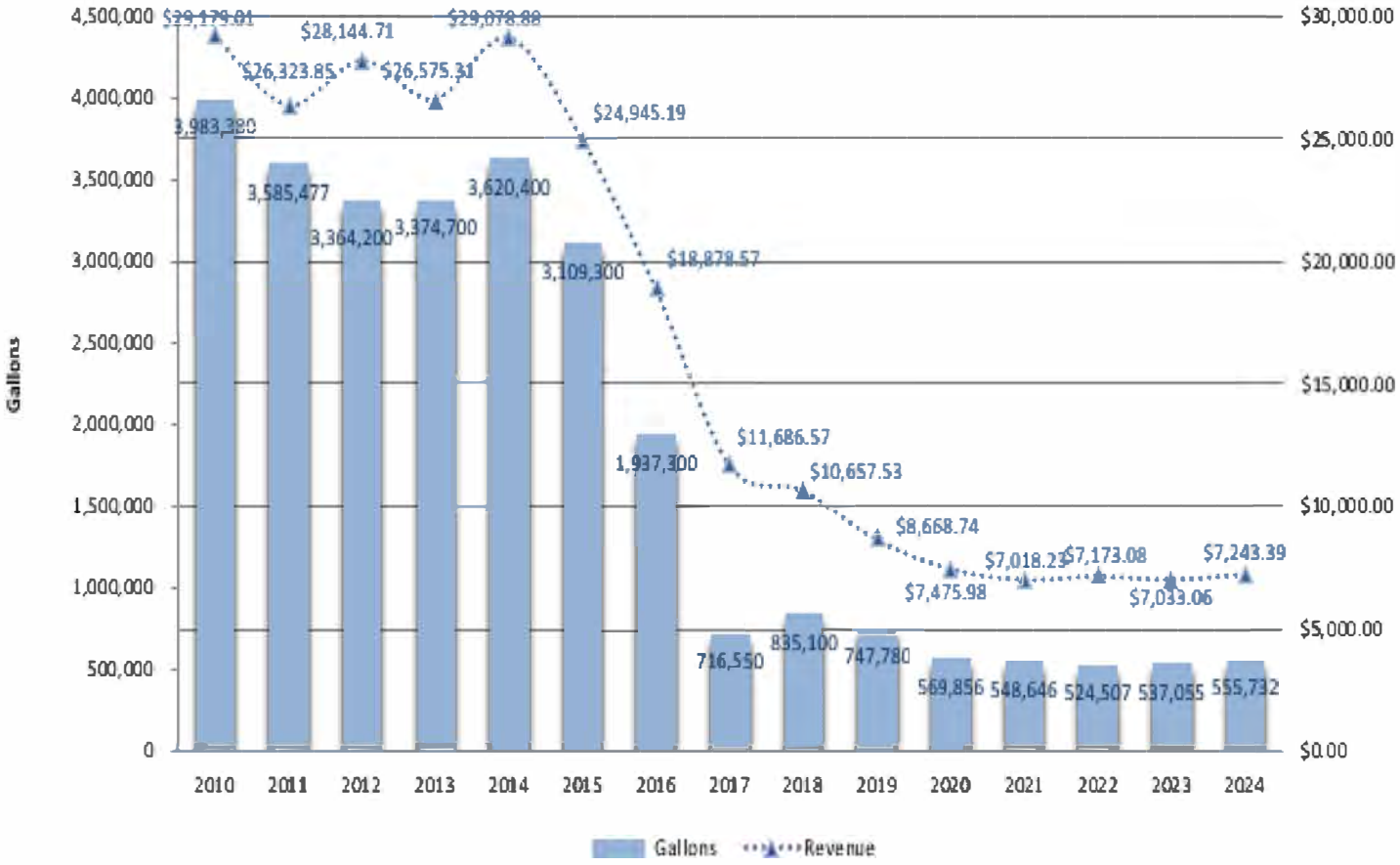
Sodium Bisulfite

	2022 Gallons	2022 Cost	2023 Gallons	2023 Cost	2024 Gallons	2024 Cost
January	0	$ -	0	$ -	93	$ 133.18
February	0	$ -	973	$ 1,391.39	0	$ -
March	0	$ -	0	$ -	0	$ -
April	0	$ -	0	$ -	2,482	$ 5,306.06
May	0	$ -	0	$ -	1,169	$ 2,840.67
June	0	$ -	0	$ -	0	$ -
July	0	$ -	0	$ -	448	$ 1,088.64
August	0	$ -	0	$ -	3,246	$ 8,147.27
September	1,680	$ 2,402.40	0	$ -	0	$ -
October	0	$ -	0	$ -	0	$ -
November	0	$ -	0	$ -	0	$ -
December	0	$ -	0	$ -	0	$ -
Total	1,680	$ 2,402.40	973	$ 1,391.39	7,439	$17,515.82

2024 LIQUID WASTE HAULERS SUMMARY

	Pat's		Stericycle		Total	
	Gallons	Charges	Gallons	Charges	Gallons	Charges
January	0	$0.00	49,700	$642.62	49,700	$642.62
February	0	$0.00	41,400	$535.30	41,400	$535.30
March	0	$0.00	46,900	$606.42	46,900	$606.42
April	0	$0.00	46,750	$604.48	46,750	$604.48
May	0	$0.00	49,000	$636.02	49,000	$636.02
June	0	$0.00	42,200	$547.76	42,200	$547.76
July	0	$0.00	49,150	$637.97	49,150	$637.97
August	3,200	$81.82	47,700	$619.15	50,982	$700.97
September	0	$0.00	41,450	$538.02	41,450	$538.02
October	0	$0.00	47,400	$615.25	47,400	$615.25
November	0	$0.00	46,900	$608.76	46,900	$608.76
December	0	$0.00	43,900	$569.82	43,900	$569.82
Total	**3,200**	**$81.82**	**552,450**	**$7,161.56**	**555,732**	**$7,243.39**
AVG	**267**	**$6.82**	**46,038**	**$596.80**	**46,311**	**$603.62**

Waste Hauler Rates (per 1,000)			
Pat's		**Stericycle**	
January - April	$20.81	January - April	$12.93
May - December	$25.57	May - December	$12.98



Estimated Community Inflow and Infiltration (Mgal)

Racine	2020	2021	2022	2023	2024	5 Yr Avg
WA Sales (Mgal)	2,369.59	2,325.52	2,296.00	2,273.00	2,307.93	2,314.4
Total Credit Meters (Mgal)	300.18	309.00	152.00	93.00	91.94	189.2
Total Water-Only Meters (Mga	97.00	73.00	178.00	180.00	193.28	144.3
Summer Rate Adjust (Mgal)	133.00	139.00	133.00	129.00	119.20	130.6
WA Usage (Mgal)	1,839.41	1,804.52	1,833.00	1,871.00	1,903.51	1,850.3
WW Discharge (Mgal)	4,026.56	2,386.42	2,609.82	2,897.63	3,374.51	3,059.0
I&I (Mgal)	2,187.15	581.90	776.82	1,026.63	1,471.00	1,208.7
% I&I	54.3%	24.4%	29.8%	35.4%	43.6%	39.5%

Mt Pleasant (Less SCJ)	2020	2021	2022	2023	2024	5 Yr Avg
WA Usage (Mgal)	1,434.21	1,597.71	1,434.12	1,664.35	1,673.11	1,560.7
SCJ Non-Sewer Water (Mgal)	648.99	724.21	693.71	820.30	897.92	757.0
WA Usage (Mgal)	785.22	873.50	740.41	844.05	775.19	803.7
WW Discharge (Mgal)	2,359.81	1,840.96	2,174.74	2,637.75	2,638.75	2,330.4
I&I (Mgal)	1,574.59	967.46	1,434.33	1,793.71	1,863.56	1,526.7
% I&I	66.7%	52.6%	66.0%	68.0%	70.6%	65.5%

Caledonia	2020	2021	2022	2023	2024	5 Yr Avg
WA Usage (Mgal)	461.16	501.92	409.71	482.75	463.03	463.7
WW Discharge (Mgal)	1,472.22	994.35	1,205.02	1,384.41	1,470.24	1,305.2
I&I (Mgal)	1,011.05	492.43	795.31	901.66	1,007.21	841.5
% I&I	68.7%	49.5%	66.0%	65.1%	68.5%	64.5%

Sturtevant	2020	2021	2022	2023	2024	5 Yr Avg
WA Sales (Mgal)	234.38	233.64	232.00	251.01	242.31	238.7
Total Credit Meters (Mgal)	0.15	1.79	1.51	4.86	2.44	2.1
WA Usage (Mgal)	234.23	231.85	230.49	246.16	239.87	236.5
WW Discharge (Mgal)	380.01	304.55	290.65	332.61	345.39	330.6
I&I (Mgal)	145.78	72.70	60.16	86.45	105.52	94.1
% I&I	38.4%	23.9%	20.7%	26.0%	30.6%	28.5%

Elmwood Park	2020	2021	2022	2023	2024	5 Yr Avg
WA Usage (Mgal)	14.26	15.87	14.17	13.68	13.68	14.3
WW Discharge (Mgal)	39.31	32.53	32.75	36.22	36.22	35.4
I&I (Mgal)	25.05	16.67	18.58	22.54	22.54	21.1
% I&I	63.7%	51.2%	56.7%	62.2%	62.2%	59.5%

North Bay	2020	2021	2022	2023	2024	5 Yr Avg
WA Usage (Mgal)	7.27	8.52	7.62	7.67	7.67	7.7
WW Discharge (Mgal)	31.58	20.51	21.39	23.78	23.78	24.2
I&I (Mgal)	24.31	11.99	13.77	16.11	16.11	16.5
% I&I	77.0%	58.5%	64.4%	67.7%	67.7%	68.0%

	2020	2021	2022	2023	2024	Overall
Total WW Discharge (Mgal)	8,309.49	5,579.33	6,334.36	7,312.40	7,888.88	7,084.9
Total I&I (Mgal)	4,967.94	2,143.15	3,098.96	3,847.10	4,485.94	3,708.6
Overall System % I&I	59.8%	38.4%	48.9%	52.6%	56.9%	52.3%
Precipitation (Inches)	40.52	24.05	33.36	34.33	43.39	35.13
I&I (Mgal) / Inch Precip	122.60	89.11	92.89	112.06	103.39	105.6

Notes:

1. The water usage and wastewater flow monitoring periods do not correlate exactly. Water billing is done every m every 3 months (ie, 1/3 of the customers are read on normal quarters and the other 2/3 vary by a month in either di recorded for all at the end of each month.
2. Water usage for residences on wells is not recorded, which applies mainly to Mt Pleasant.
3. Racine wastewater flow is not metered, but rather a subtraction of all other community metered flows from the t
4. Johnson Wax (SCJ) is such a major part of Mt Pleasant flow that the impact of its water usage and wastewater fl

MAINTENANCE & ENERGY

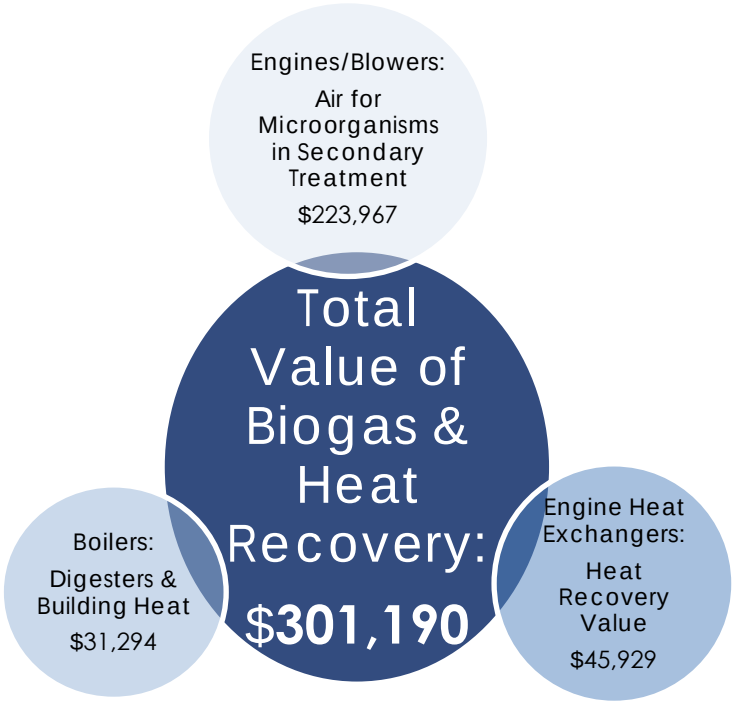
Energy Independence with Biogas

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 65% methane and has a Btu value of 650 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 temperatures 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

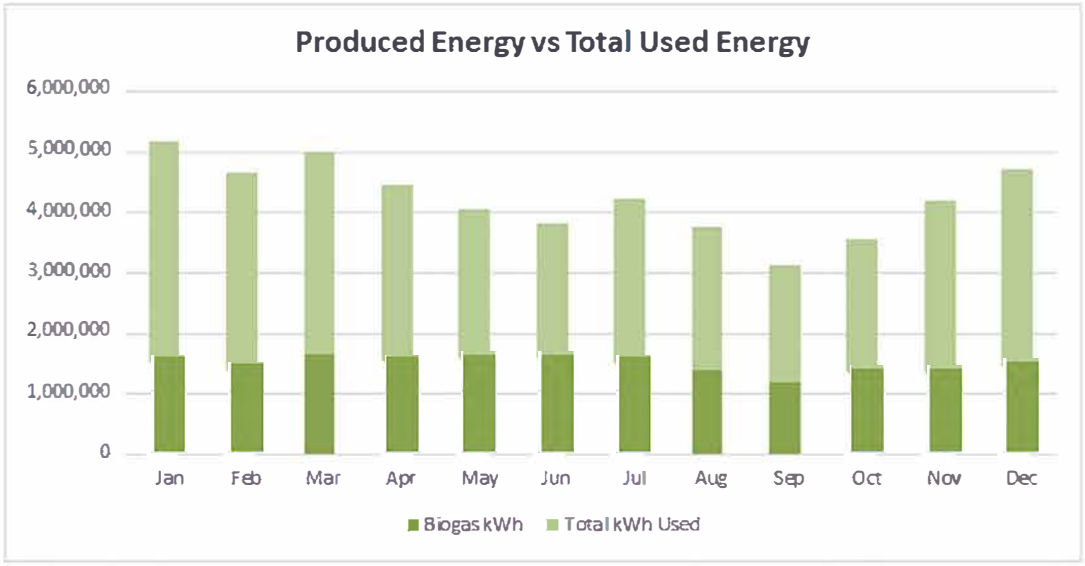
Biogas Monthly Production and Use

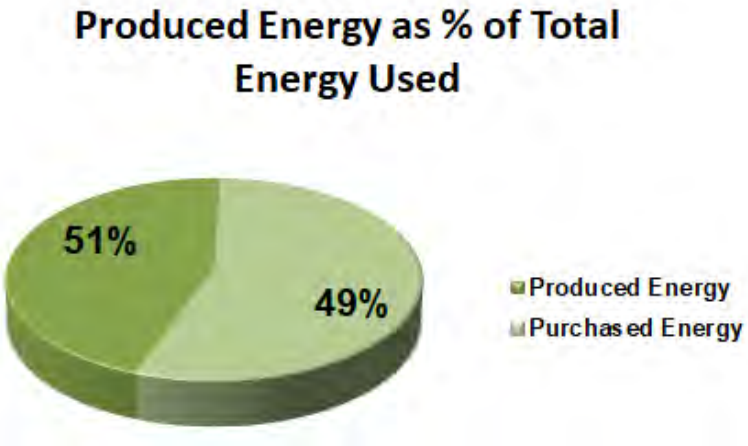
	Average Daily Values (Ft^3)							
	Dig A	Dig B	Dig D	Dig E	Gas to Boilers	Gas to Engines	Total Gas to Flare	Dig Gas Produced
Jan	65,414	36,172	55,011	58,653	40,670	158,441	457	215,250
Feb	65,176	35,837	51,012	56,500	32,455	161,205	0	208,525
Mar	61,377	36,900	59,881	57,920	28,175	183,084	0	216,078
Apr	60,534	36,728	62,629	51,328	27,845	180,975	278	211,219
May	58,104	34,914	59,284	55,372	13,898	188,917	1,582	207,674
Jun	64,497	35,981	62,702	55,578	6,905	203,051	0	218,758
Jul	59,068	36,407	58,380	63,792	2,230	194,471	875	217,647
Aug	38,113	23,131	39,447	35,605	11,952	128,944	5,960	136,296
Sep	44,446	24,341	40,947	41,561	22,402	140,464	324	151,295
Oct	44,446	24,341	40,947	41,561	22,402	140,464	324	151,295
Nov	52,239	26,871	51,964	49,050	30,097	142,030	72	180,124
Dec	55,660	28,975	49,207	57,324	36,113	147,108	34	191,166
AVG	**55,756**	**31,717**	**52,618**	**52,020**	**22,929**	**164,096**	**826**	**192,111**



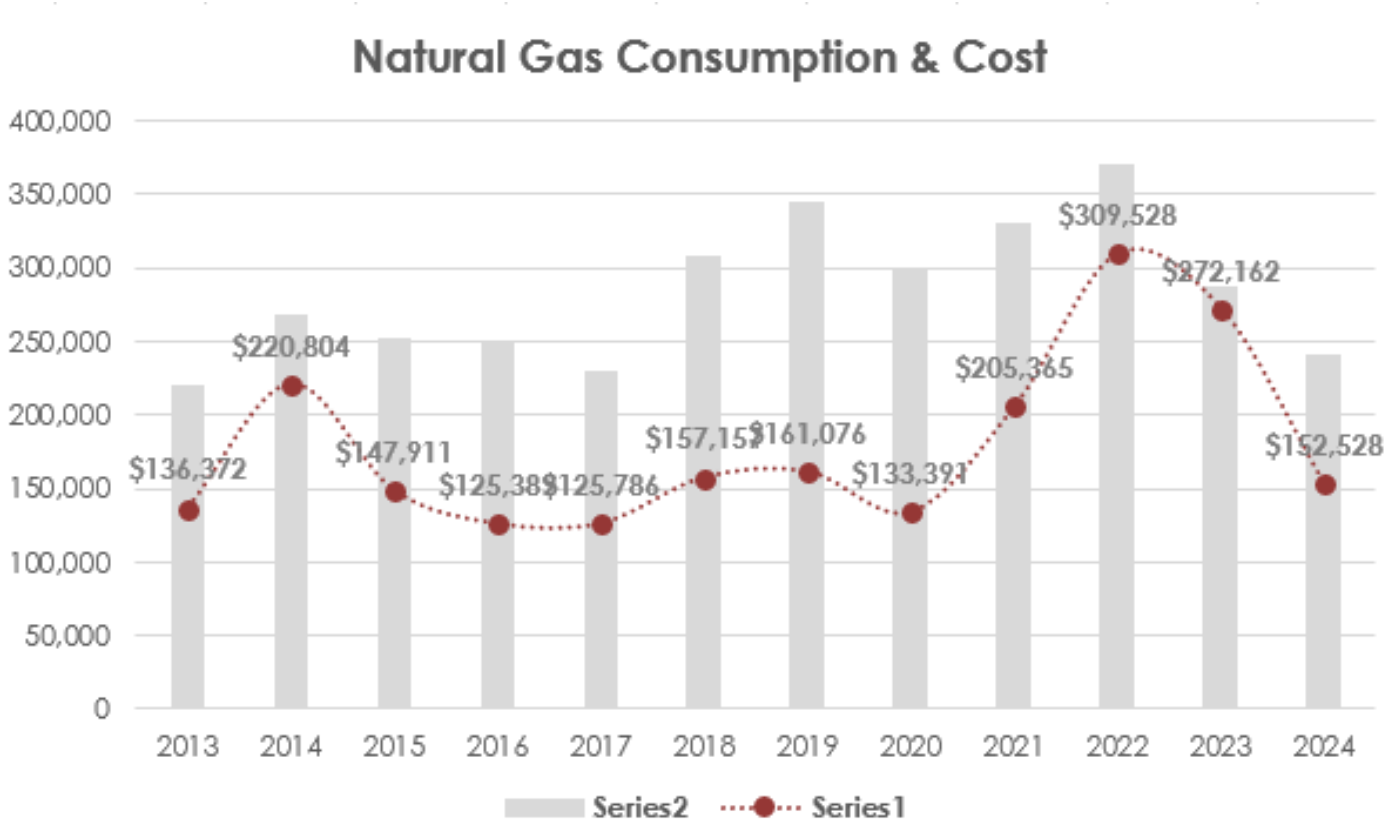
PLANT ENERGY CONSUMPTION

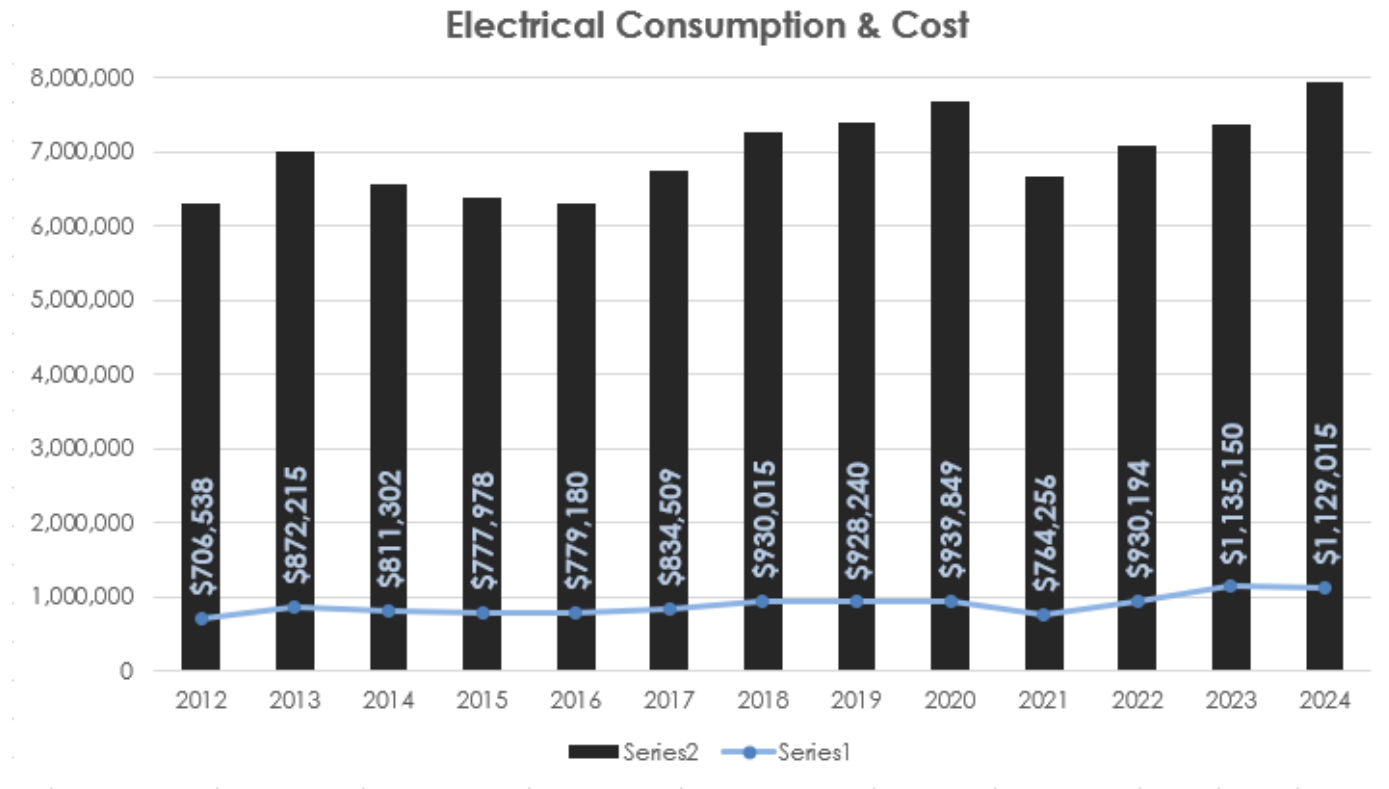
Month	Natural Gas Therms	Cost $ Nat. Gas	Conversion Nat Gas Therms to kWh	Electric kWh	Cost $ Electricity	Biogas kWh	Total kWh Used	% Energy Produced	kW Peak Demand
Jan	42,397	$28,553	1,242,235	784,715	$76,315	1,580,805	3,607,755	44	1,449
Feb	37,784	$26,095	1,107,057	649,976	$66,598	1,449,637	3,206,670	45	1249
Mar	36,503	$18,822	1,069,547	644,869	$65,794	1,650,319	3,364,735	49	1,242
Apr	20,538	$9,424	601,752	701,116	$72,222	1,583,577	2,886,444	55	1411
May	7,425	$2,694	217,555	626,141	$70,425	1,602,000	2,445,696	66	1,581
Jun	5,170	$2,345	151,469	502,428	$72,496	1,589,867	2,243,765	71	1318
Jul	14,755	$5,967	432,313	648,313	$80,186	1,567,014	2,647,640	59	1404
Aug	8,086	$2,899	236,908	705,866	$79,625	1,406,950	2,349,724	60	1,238
Sep	2,587	$1,188	75,784	626,534	$75,145	1,207,434	1,909,752	63	1,284
Oct	6,325	$3,904	185,323	616,196	$69,196	1,373,400	2,174,919	63	1,296
Nov	22,414	$11,807	656,718	785,775	$76,805	1,380,382	2,822,875	49	1437
Dec	37,021	$22,278	1,084,704	642,389	$63,313	1,489,877	3,216,970	46	1,168
TOTAL / AVG.	241,002	$135,975	7,061,364	7,934,318	$868,119	12,257,435	27,253,117	45	1,340



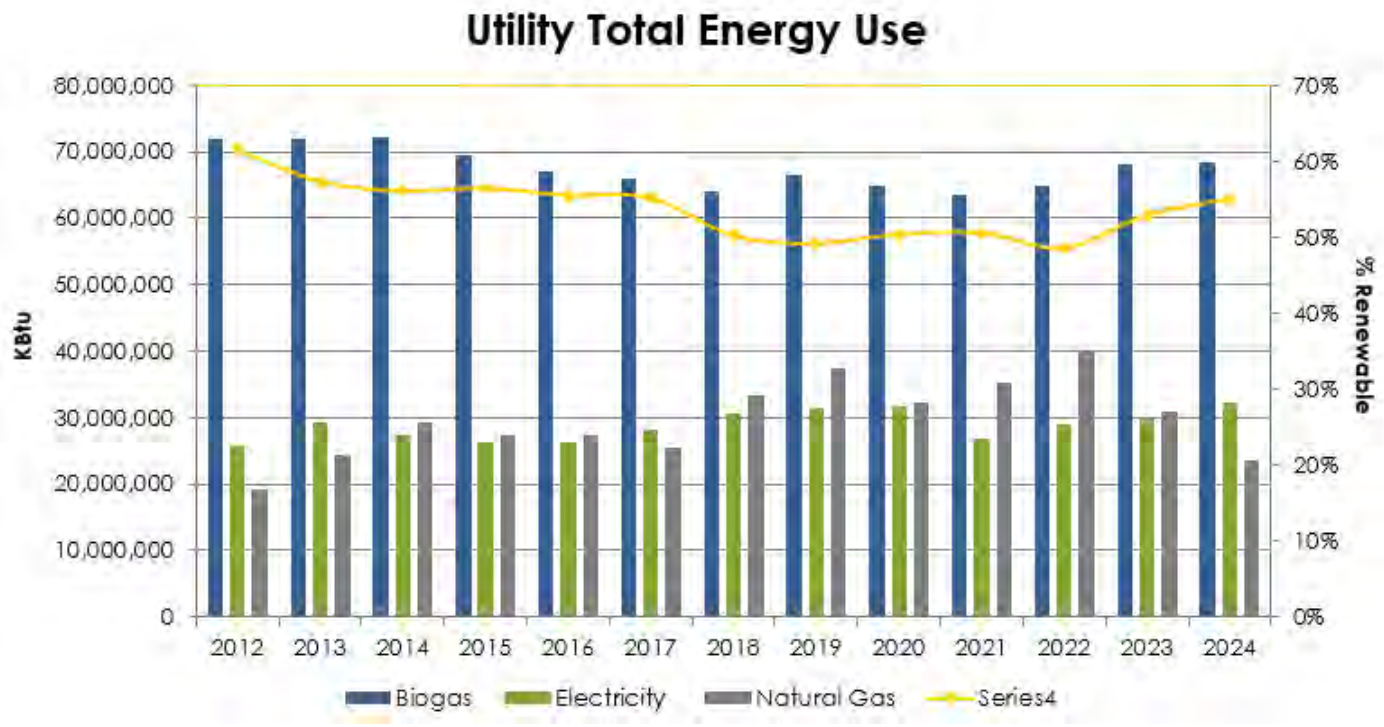


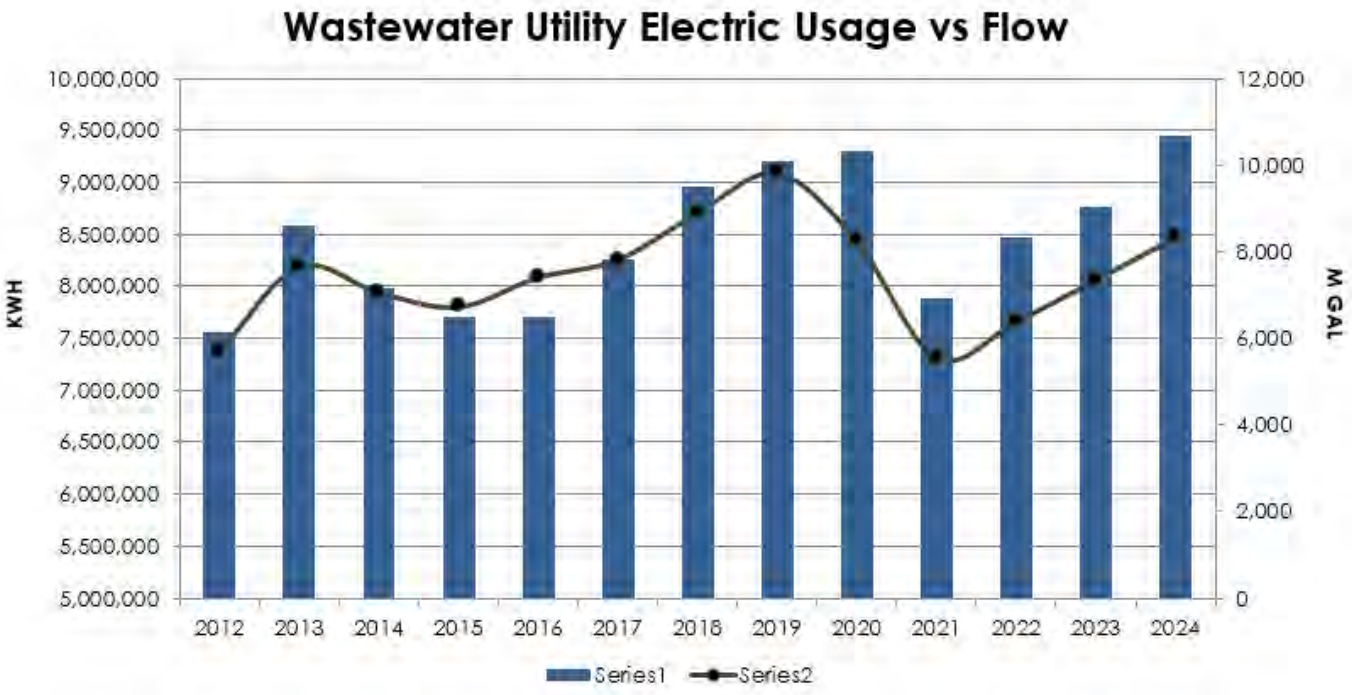
Plant Natural Gas and Electrical Consumption & Cost



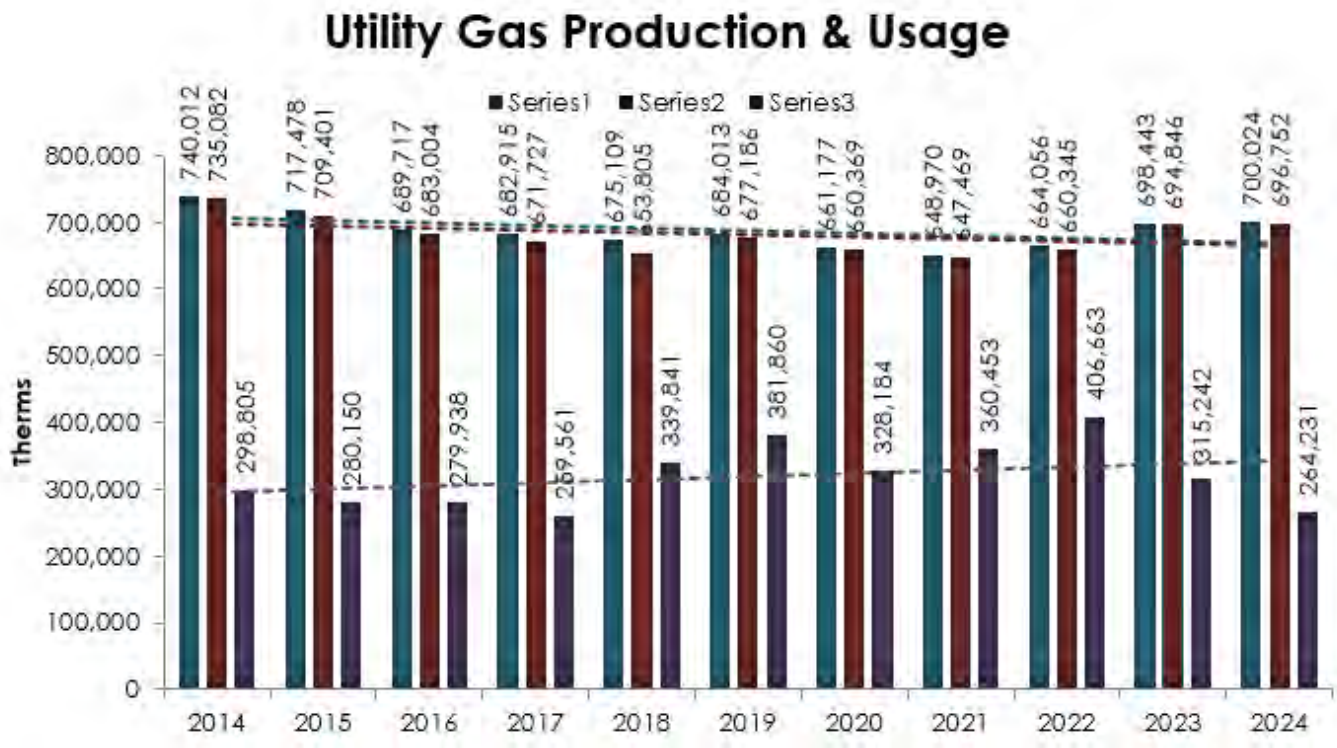


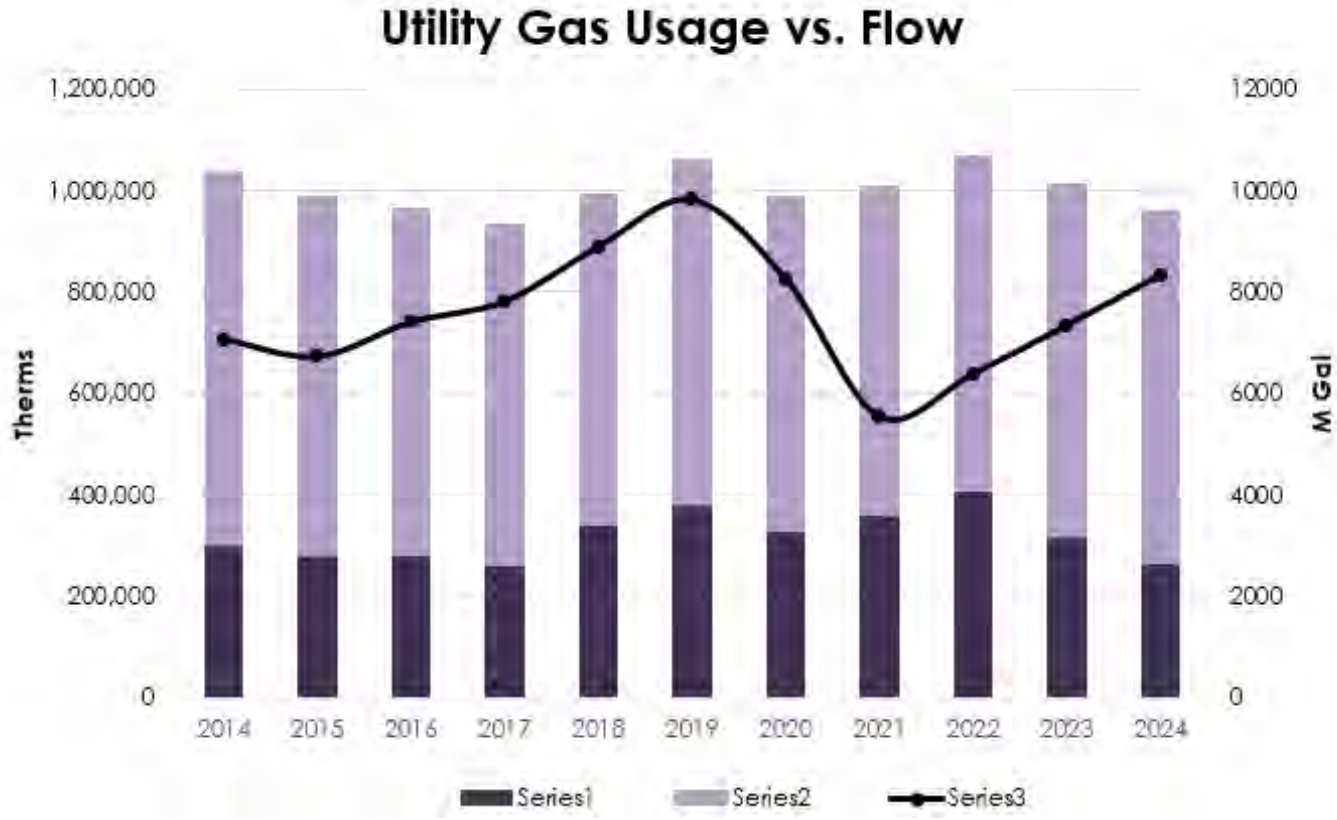
UTILITY TOTAL ENERGY USE, ELECTRIC USAGE VS. FLOW





GAS PRODUCTION & USAGE, GAS USAGE VS. FLOW





LABORATORY

LABORATORY SERVICES

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.

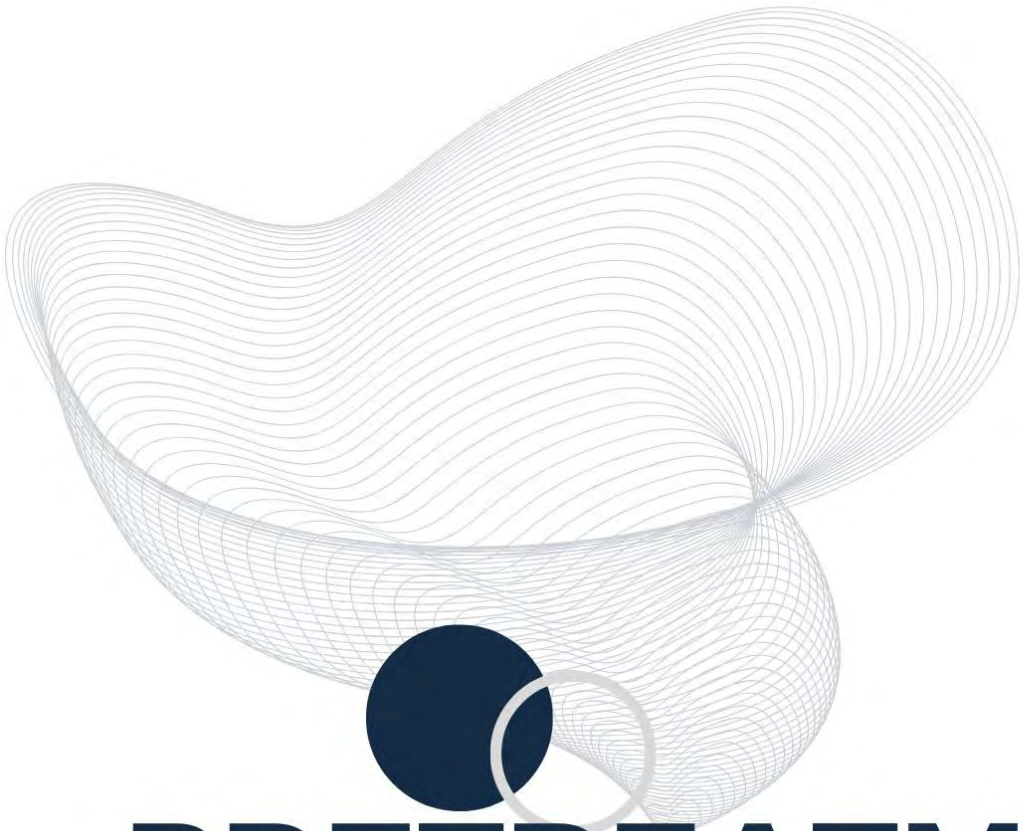
The laboratory comprises the Laboratory Director and 4 staff of varying classification – chemist, technologist, technician. All personnel hold a bachelor's degree in biology, chemistry or environmental science and are WDNR certified operators in the laboratory subcategory. The Laboratory Director is responsible for oversight of all laboratory functions, standard operating procedures (SOPs), submission of monthly DMRs and assisting in preparation of the annual biosolids management report. The Director also serves as quality assurance, chemical hygiene officer and LIMS administrator. 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 (NH_3), total kjeldahl nitrogen (TKN), cyanide (CN), hardness, metals and mercury. Accreditation extends to solid matrices (e.g. biosolids – cake sludge) on a shorter list of parameters. Additional routine testing performed in-house includes pH, conductivity, chlorine, nitrate, 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.

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 DMR, 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 laboratory's 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

The Pretreatment Department is part of Field Operations and 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 most recently audited by the Wisconsin DNR in 2023. 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. The estimated total person hours used to implement the Industrial Pretreatment Program in 2024 was 2,989 hours. The estimated total cost of the program was $176,704.

In 2024, there were thirty-three (33) permitted industries in the Industrial Pretreatment Program. There were sixteen (16) categorical and seventeen (17) non-categorical industries. Industrial categories regulated in 2024 include: Ten Metal Finishing, one Electroplating/Metal Finishing, three Metal Molding and Casting, one Soap and Detergent Manufacturing/Pesticide Formulating, Packaging, and Repackaging (PFPR) and one 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 minimal discharge permitted industry and six NSCIU permitted industries.

Eight industries were investigated for inclusion into the pretreatment program. Two of these industries were permitted in early 2025 as a NSCIU and a noncategorical industry. Four of these industries are being monitored for possible inclusion into the program. There were no concerns with the other two facilities.

There were twenty-one incidents of noncompliance during the year. Parameter violations included exceedance of established limits in pH, cyanide, copper, nickel, zinc, and total metals. Other violations included failure to pay fees, improper sampling, and late reporting. Four of these met the criteria of significant non-compliance (SNC) during 2024. 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 has started notifing industries of possible future PFAS regulations and also continues to promote mercury recycling and reduction in the Racine area through their Mercury Pollution Prevention Plan.

METAL FINISHING
CHROMIUM, INC (NSCIU)
CNH INDUSTRIAL AMERICA
CREE LIGHTING–IDEAL INDUSTRIES LIGHTING
D & D INDUSTRIAL FINISHING- PLANT #1
D & D INDUSTRIAL FINISHING PLT #2 (NSCIU)
KOLAR ARMS
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 (PFPR)
SC JOHNSON & SON – WAXDALE FACILITY

SOAP AND DETERGENT MANUFACTURING / (PFPR)
DW DAVIES (NSCIU)

NON-CATEGORICAL
A & E MANUFACTURING
ANDIS COMPANY
BRP USA
BUTTER BUDS FOOD INGREDIENTS
CSL USA
FEDERAL HEATH
GREAT NORTHERN CORPORATION
GREEN BAY PACKAGING-MIDLAND DIV
IN-SINK-ERATOR (H)
KHP LANDFILL (REPUBLIC SERVICES)
MODINE MANUFACTURING
PUTZMEISTER AMERICA
RACINE WATER UTILITY
STERICYCLE (HW)
(E.C.) STYBERG ENGINEERING
TWIN DISC – 21st STREET (H)
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

2023

Influent			Effluent				Biosolids		
Date 2023	Conc. ng/L	Test Method	Date 2023	Conc. ng/L	Test Method	% Removal	Date 2023	Conc. mg/kg	Test Method
01/04/23	33.3	EPA 1631E	01/04/23	0.9	EPA 1631E	97.4	01/04/23	0.47	EPA 7471B
02/07/23	23.9	EPA 1631E	02/07/23	1.1	EPA 1631E	95.2	02/07/23	0.33	EPA 7471B
03/08/23	14	EPA 1631E	03/08/23	0.9	EPA 1631E	93.3	03/08/23	0.76	EPA 7471B
04/04/23	10.3	EPA 1631E	04/04/23	0.85	EPA 1631E	91.8	04/04/23	0.58	EPA 7471B
05/03/23	12.6	EPA 1631E	05/03/23	0.879	EPA 1631E	93.0	05/03/23	0.38	EPA 7471B
06/06/23	41.6	EPA 1631E	06/06/23	1.01	EPA 1631E	97.6	06/06/23	0.40	EPA 7471B
07/12/23	90.9	EPA 1631E	07/12/23	0.68	EPA 1631E	99.2	07/12/23	0.36	EPA 7471B
08/01/23	26.3	EPA 1631E	08/01/23	0.462	EPA 1631E	98.2	08/01/23	0.29	EPA 7471B
09/06/23	28.3	EPA 1631E	09/06/23	0.834	EPA 1631E	97.1	09/06/23	0.44	EPA 7471B
10/03/23	20.9	EPA 1631E	10/03/23	0.7	EPA 1631E	96.8	10/02/23	0.38	EPA 7471B
11/08/23	42.5	EPA 1631E	11/08/23	0.781	EPA 1631E	98.2	11/09/23	0.64	EPA 7471B
12/04/23	17	EPA 1631E	12/04/23	1.21	EPA 1631E	92.9	12/04/23	0.45	EPA 7471B
Influent Average	30.1		Effluent Average	0.9		Removal 95.9%	Biosolids Average	0.46	

2024

Influent			Effluent				Biosolids		
Date 2024	Conc. ng/L	Test Method	Date 2024	Conc. ng/L	Test Method	% Removal	Date 2024	Conc. mg/kg	Test Method
01/10/24	38.7	EPA 1631E	01/10/24	1.6	EPA 1631E	95.8	01/10/24	0.5	EPA 7471B
02/06/24	7.63	EPA 1631E	02/06/24	1.1	EPA 1631E	86.1	02/05/24	0.57	EPA 7471B
03/06/24	8.47	EPA 1631E	03/06/24	1.5	EPA 1631E	82.3	03/06/24	0.43	EPA 7471B
04/09/24	8.22	EPA 1631E	04/09/24	1.69	EPA 1631E	79.4	04/09/24	0.64	EPA 7471B
05/01/24	14.3	EPA 1631E	05/01/24	0.663	EPA 1631E	95.4	05/01/24	0.47	EPA 7471B
06/04/24	13.8	EPA 1631E	06/04/24	1.27	EPA 1631E	90.8	06/04/24	0.53	EPA 7471B
07/09/24	21.9	EPA 1631E	07/09/24	0.87	EPA 1631E	96.0	07/09/24	0.57	EPA 7471B
08/13/24	28.6	EPA 1631E	08/13/24	1.22	EPA 1631E	95.7	08/13/24	0.46	EPA 7471B
09/04/24	53	EPA 1631E	09/04/24	0.9	EPA 1631E	98.3	09/04/24	0.51	EPA 7471B
10/08/24	58	EPA 1631E	10/08/24	0.6	EPA 1631E	99.0	10/08/24	0.52	EPA 7471B
11/06/24	46.9	EPA 1631E	11/06/24	0.786	EPA 1631E	98.3	11/06/24	0.47	EPA 7471B
12/03/24	27.2	EPA 1631E	12/03/24	1.17	EPA 1631E	95.7	12/03/24	0.43	EPA 7471B
Influent Average	27.2		Effluent Average	1.1		Removal 92.7%	Biosolids Average	0.51	

Is there a mercury limit in local sewer use ordinance? Yes
If yes, what is it? 0.10 mg/l

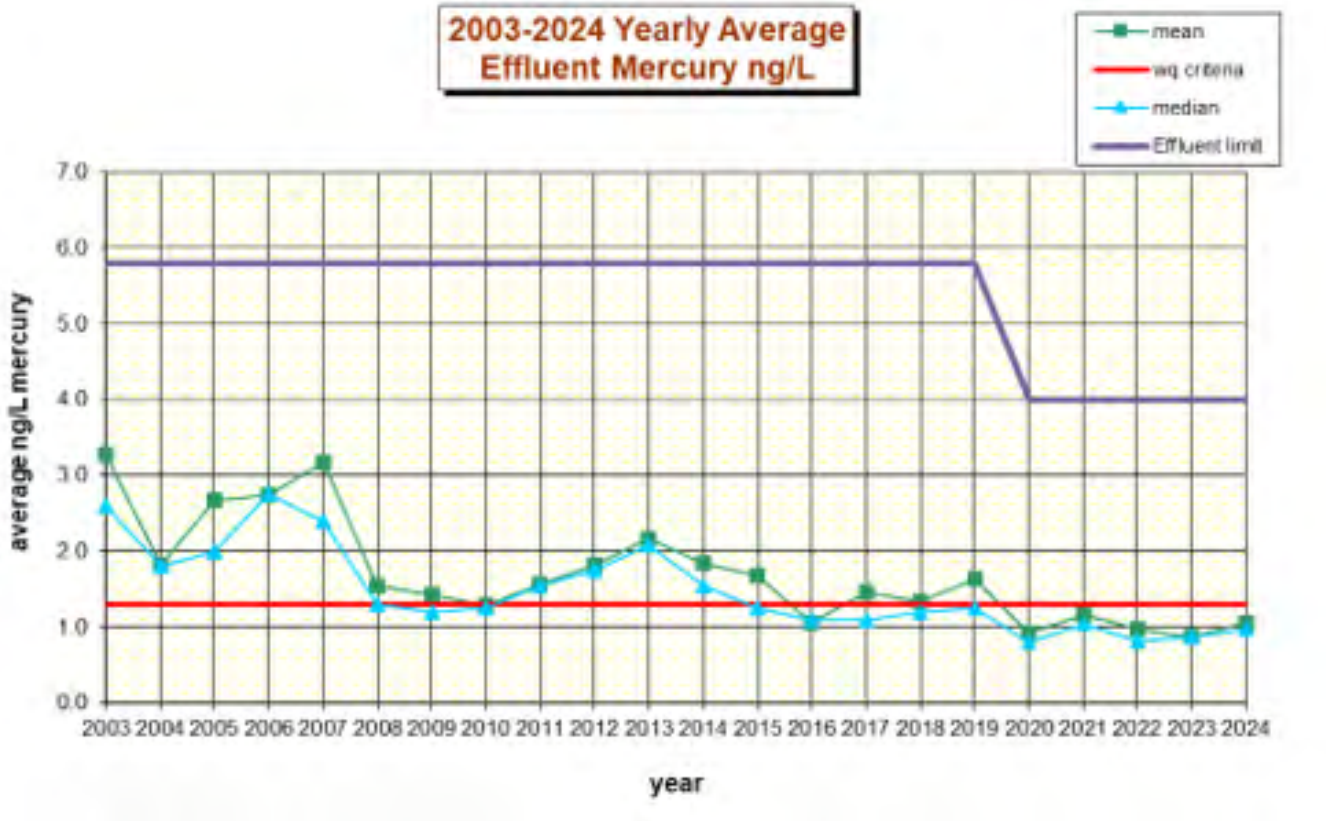
Laboratory performing wastewater analysis:
Pace (cert# 405132750)
Laboratory performing solids analysis:
Pace (cert# 405132750)

2024 - 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-0025194-09-1 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 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. Initial 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 by October 2020 as required by the 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 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 at least 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.



Community Mercury PMP Score Form 10

Facility Name: Racine Wastewater Utility Report Date: Dec 18, 2024

I. 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)	97	X	(0.50)	=	48.5
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				98.5

*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.

II. 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)	4	X	(0.1)	=	0.4
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				15.4

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

III. 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)	20	X	(0.1)	=	2.0
	Total Other Credits Score				4.3

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

IV. Community Mercury PMP Score

	Total Score
Sum of Wastewater Sectors, Other Community Sectors and Other PMP Credits	118.2

COLLECTION SYSTEM & LIFT STATIONS

Collection Systems and 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 2016 to meet the current requirements of the WDNR and is reviewed annually.

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 2024, we continued to monitor flow in different areas within the City of Racine covering about 1,023,777 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. In 2022, the Utility began to re-contract CCTV and lining work in the aging interceptors. Due to delays within the City in 2024, neither the CCTV contract nor the lining contract were put out to bid until late 2024 with an early 2025 start date.

The Utility purchased an in-house CCTV system in 2014. The system is used to assess emergency situations in the sewer cleaning operation as well as televising trouble spots within the collection system. In 2024, the crew televised 1,915 linear feet of interceptors and 39,892 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 2020 Facilities Plan is a 20 year plan and lists the proposed projects through year 2040. These regional collection system projects will help to mitigate bypassing and backups. The improvements will be completed in stages over a period of time to accommodate peak flows anticipated during a 5 year storm event.

Racine Wastewater Utility owns and maintains the 54 miles of interceptors (typically 18-inch pipe and greater) and force mains that run through the City. The City of Racine owns and maintains the 200 miles of collector pipe (typically 15-inch pipe and smaller). The Utility's sewer maintenance crew continues to do an outstanding job cleaning both the Interceptor and Collector pipes that make up the collection system. In 2024, this crew

cleaned 538,599 linear feet (102 miles) of the 254 miles of sewer in the collection system. The crew used our root saws on 93,266 linear feet of sewer mains, and responded to 118 sewer calls; most of the calls were lateral problems requiring attention from the homeowners. They also responded to 20 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. In 2024, the Utility contracted out a Lift Station Evaluation project for the 14 Utility owned Lift Stations, 3 wet weather storage tanks, and the 14 Park and Rec stations. The Utility will use this evaluation report to prioritize and plan for future upgrades.

The field crew had several big projects in 2024. Lift Station 1 West Side barscreen track was repaired, west side transfer switch was repaired and cleaned, and the east side transfer switch was cleaned. The meter manhole for the Safety Site at Lift Station 2 was lined to reduce I/I. The deteriorating access hatch on Lift Station 5's wet well was replaced. The isolation valve for pump 2 at Lift Station 10 was replaced. North Side Storage's flushing gates were cleaned and adjusted and the Limitorques were serviced to improve the automation of putting the tank in/out of service. 634 linear feet of failing 21-inch pipe in N. Main Street (William to Augusta) was relayed prior to the 2025 DOT paving project. In 2023, 4,960 linear feet of pipe was upsized and relayed in Chicory Road and Knoll Place- this was completed in 2024. This project will help mitigate upstream basement backups and prepare for the Chicory Rd Storage Tank; both of which will help to reduce the overflows at Safety Site 11. The Safety Site 11 flow meter was upgraded to the Signature ISCO meter. Construction started on the 1.67 MG Chicory Rd Storage Tank. Johnson Park's force main failed just prior to the start of the Johnson Park upgrade project. The force main was repaired and the station was upgraded with a new valve vault, new wet well slab and hatch, new pumps, and new controls.

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. In 2021, the Katolight generator (originally installed in 2002) was replaced with a new 25kW Cummins generator.

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," with a new walk in structure. This new structure is located in the adjacent parking ramp, and has an arc flash safe control panel. With the piping reroute in 2021, this station now serves the Festival site and Pershing Park. In 2023, a portable emergency generator receptacle was added to the station for further redundancy.

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. In 2023, the Katolight generator (originally installed in 2002) was replaced with a new 60 kW Cummins generator and a portable emergency generator receptacle was added to the station for further redundancy. The deteriorating wet well access hatch was replaced in 2024.

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 were 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. Due to a buildup of grease coming through this station, the floats for the backup

system would frequently alarm so in 2023, the emergency backup float system was updated to a FOG Rod to help mitigate these false callouts.

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. The 2002 Katolight generator was replaced in 2023 with a new 35 kW Cummins generator.

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. Due to a buildup of grease coming through this station, the floats for the backup system would frequently alarm so in 2023, the emergency backup float system was updated to a FOG Rod to help mitigate these false callouts. In 2024, the inlet isolation valve was replaced on Pump #2.

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. This generator was replaced in 2021 with a new 25 kW Cummins generator. In November of 2008, the Utility completed an upgrade of the station including valves, pumps, telemetry, and controls.

LIFT STATION #12

334 Parkview Dr.

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. In 2022, the Katolight generator (originally installed in 2002) was replaced with a new 25kW Cummins generator.

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.

CHICORY RD STORAGE TANK

Chicory Road

Construction started in 2024 for the 1.67 million-gallon Chicory Rd Storage Tank. The tank is used in high flow situations to help reduce upstream basement backups and sanitary overflows into the storm water system.

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 is 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.

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. The Utility continues to look into upgrading the radios to a cellular option.

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 S. 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 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.

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-0508fdbv (Rev. 11/21)

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

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 1307 Percent HHW Participation 6.2%

AG: Estimated Farms in collection area Number of Ag Participants

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	14,536
Lead/Oil Paint	9,508
Caustics/Corrosives	2,475
Reactives	1310
Solvents/Thinners	17,995
Waste Oil	0
PCBs	49
Aerosol Cans	3,110
Mercury	39
Dioxins	20
Latex Paint	0
Other	3,236
Total ALL Collected Chemicals (lbs.)	52,278
Average Weight Collected Per Participant (lbs.)	40

Ag Waste Data

Item	Total Weight (lbs.)
Agricultural waste collected	
Average weight per participant (lbs.)	

VSQG Wastes

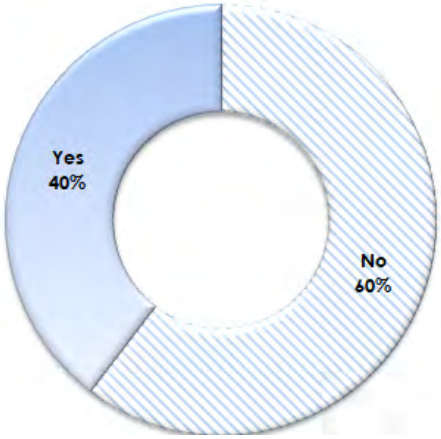
Item	Total Weight (lbs.)
VSQG Wastes Collected (Non-subsidized collected waste)	
VSQG Subsidized Waste (50% DATCP subsidized waste)	
Avg. weight per VSQG participant	

Total Participation

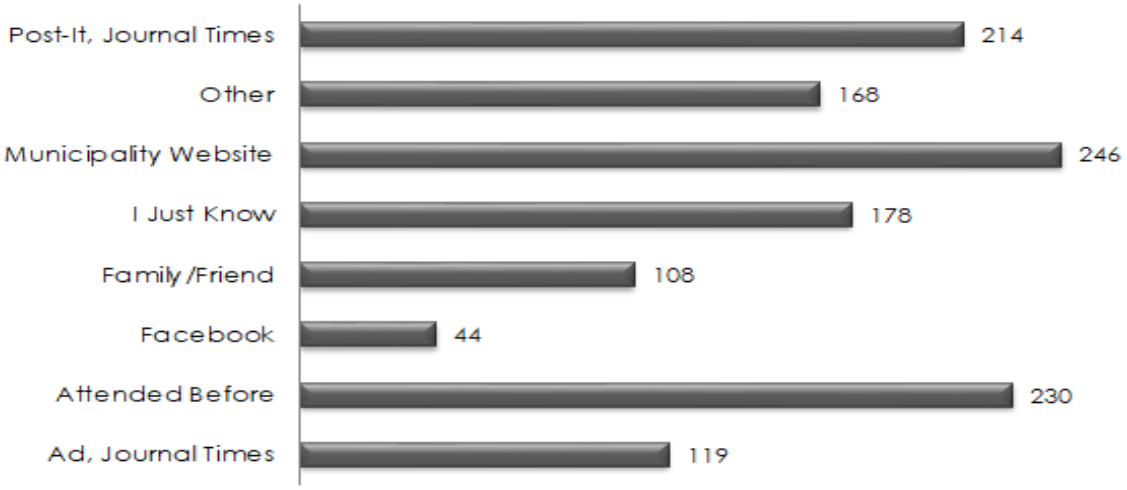
Current Year vs Prior Year

	2024	2023
April	0	244
May	0	149
June	218	187
July	286	168
August	235	194
September	283	181
October	285	253
Total	**1307**	**1376**

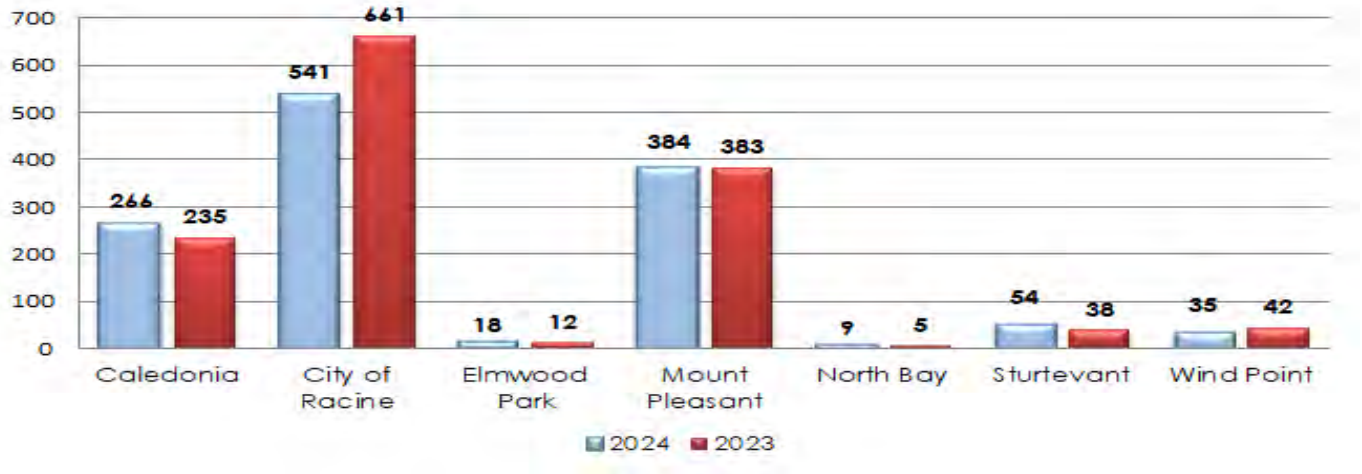
Survey Question: Did you participate last year?



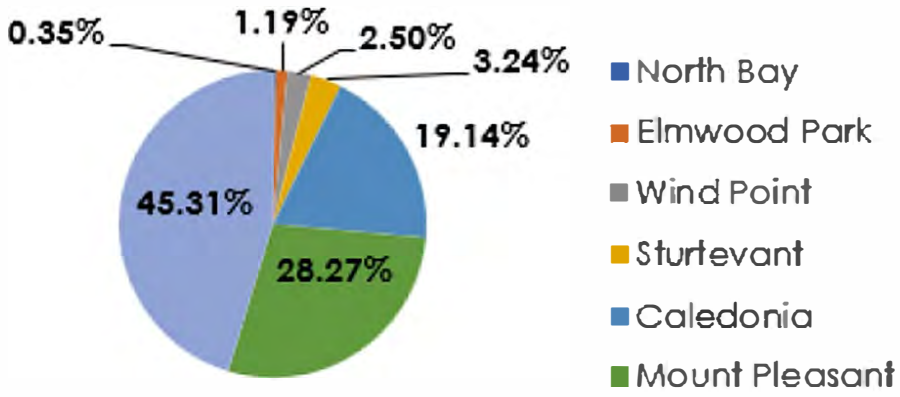
Survey Question: How did you hear about the event?



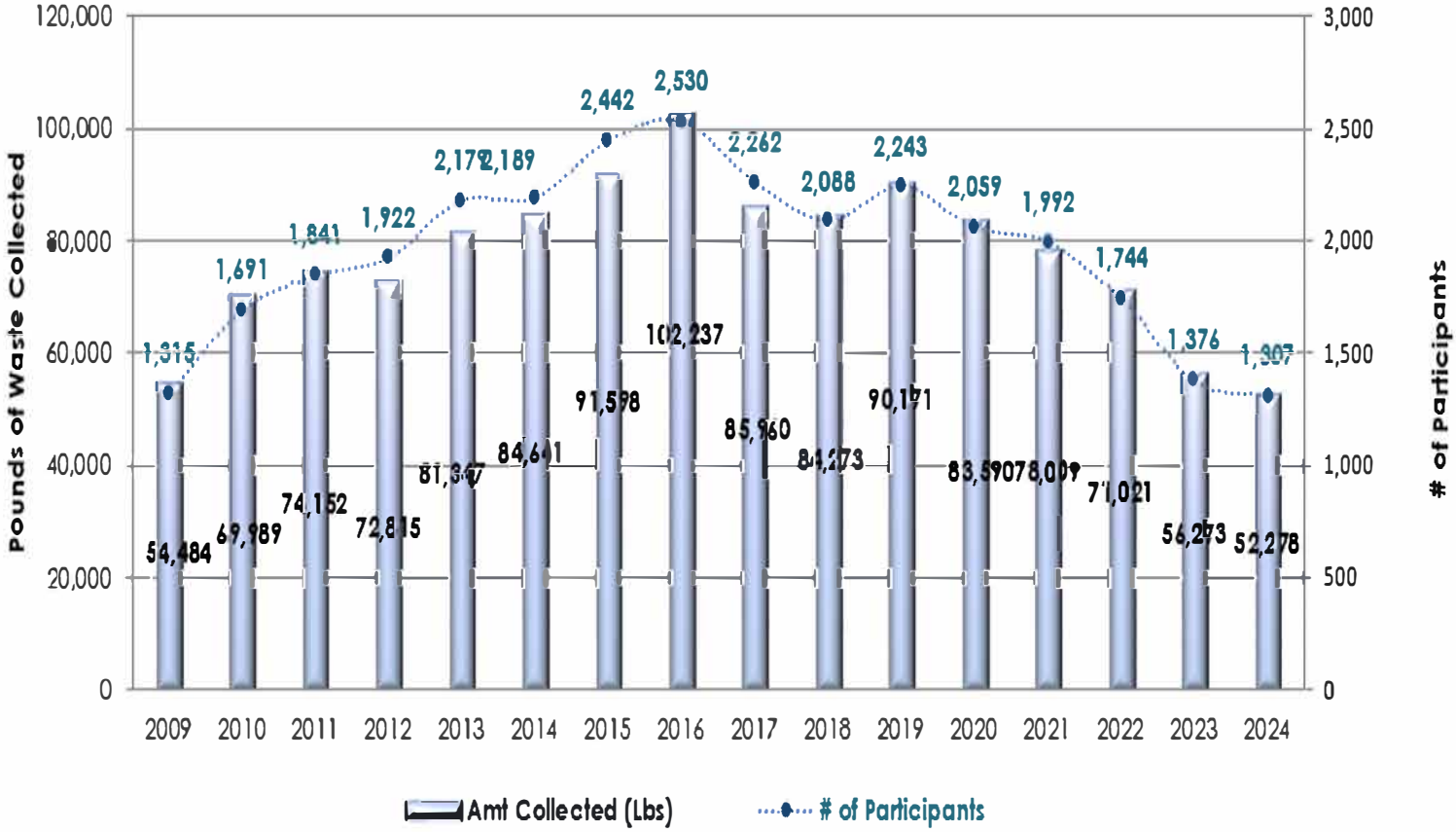
Survey Question: Which City or Village do you reside in?



Participation by Community 2009 to Date



Waste Collection & Participation



APPENDIX A

RACINE WASTEWATER UTILITY
Adopted 2024 Budget

	2022 ACTUAL	2023 BUDGET	2023 PROJECTED	2024 BUDGET	23 VS 24 BUDGET
Operating Revenue	$11,737,133	$14,065,386	$12,183,000	$14,153,430	0.6%
True Up		$321,472		$764,984	
Total Operating Revenue	$11,737,133	$14,386,858	$12,183,000	$14,918,414	3.7%
O&M Expenses	$7,552,714	$10,375,000	$9,791,000	$10,606,000	2.2%
Depreciation*	2,216,504	2,262,806	2,215,000	2,216,248	-2.1%
Total Operating Expense	$9,769,218	$12,637,806	$12,006,000	$12,822,248	1.5%
Net Operating Income	**$1,967,915**	**$1,749,052**	**$177,000**	**$2,096,166**	19.8%
Other Income					
Plant Capacity Income (COSS)	$1,816,820	$1,769,791	$1,769,791	$1,754,377	-0.9%
Household Hazard Waste	169,348	165,000	165,000	165,000	0.0%
Interest/Dividend Income	133,978	51,000	369,000	370,000	625.5%
Other Expense					
Household Hazard Waste	$203,655	$195,000	$180,000	$195,000	0.0%
Interest Expense	$383,597	$263,000	$263,000	642,000	144.1%
Net Income	**$3,500,809**	**$3,276,843**	**$2,037,791**	**$3,548,543**	8.3%

Distribution of 2024 Budget Net Income	$3,548,543
Plus Depreciation	2,216,248
Less principal collected from SSR parties not included above	(770,517)
Total Cash Available	$4,994,273
Less Bond Principal Payments	(1,714,517)
Less Total Capital Improvement Projects	-
Plus Contributed Capital Improvement Projects	-
Net Cash Balance	$3,279,756
Funding - From State Loans and/or Reserves/Rates	

* Depreciation — Depreciation shown only represents amount used in rate calculation per the agreement. Depreciation used for GAAP shown in the audit will be much higher.

Note: Following the 2002 Intergovernmental Sanitary Sewer Agreement, in 2024 $1,081,031 from Utility reserves will be transferred to the City of Racine. (Zoo, Library, & Museum)

RACINE WASTEWATER UTILITY
2024 Adopted Operation & Maintenance Budget

ACCOUNT	2022 Actual	2023 Budget	2023 6/30/2023	2023 Projected	Adopted 2024 Budget	23 vs 24 Budget
A. PERSONNEL SERVICES						
Salaries & Wages	$3,046,294	$3,589,000	$1,469,667	$3,250,000	$3,690,000	2.8%
B. CONTRACTUAL						
Professional Services	$308,988	$303,000	$164,847	$330,000	$323,000	6.6%
Laboratory Prof. Services	45,141	44,000	33,790	55,000	52,000	18.2%
Pre-treat. Prof Services	4,748	7,000	7,902	9,000	7,000	0.0%
Building & Equipment Maint.	87,928	135,000	33,689	67,000	143,000	5.9%
Vehicle Maintenance	22,997	25,000	12,916	26,000	30,000	20.0%
Telephone	9,873	10,000	4,392	9,000	10,000	0.0%
Natural Gas	309,361	200,000	139,832	280,000	205,000	2.5%
Electric Service	929,646	950,000	561,930	1,124,000	1,000,000	5.3%
Water Service	345,566	350,000	85,486	340,000	350,000	0.0%
City Sewer & L.S. Maint.	5,942	10,000	8,891	18,000	14,000	40.0%
Interceptor & L.S. Maint.	76,998	110,000	57,584	115,000	130,000	18.2%
Sludge & Grit Disposal	785,385	606,000	282,098	564,000	596,000	-1.7%
TOTAL	$2,932,573	$2,750,000	$1,393,359	$2,937,000	$2,860,000	4.0%
C. MATERIALS & SUPPLIES						
Office Supplies	$15,090	$13,000	$4,308	$9,000	$13,000	0.0%
Gasoline & Diesel Fuel	33,476	27,000	12,527	25,000	27,000	0.0%
Lubricants	28,090	35,000	21,889	44,000	35,000	0.0%
Custodial Supplies	21,107	18,000	8,640	17,000	20,000	11.1%
Operational Chemicals	574,508	592,000	304,376	609,000	652,000	10.1%
Plant & System Supplies	51,174	56,000	24,121	48,000	56,000	0.0%
Equipment Supplies	186,227	224,000	56,963	114,000	220,000	-1.8%
Sewer Maint. Supplies	8,662	10,000	4,353	9,000	10,000	0.0%
Pre-treat.Sampling Supplies	5,941	7,000	552	1,000	7,000	0.0%
Laboratory Supplies	59,436	62,000	32,047	64,000	66,000	6.5%
Pre-treat. Lab Supplies	18,347	25,000	7,775	16,000	25,000	0.0%
Computer & PLC Supplies	41,048	45,000	27,107	54,000	50,000	11.1%
TOTAL	$1,043,106	$1,114,000	$504,658	$1,010,000	$1,181,000	6.0%

RACINE WASTEWATER UTILITY
2024 Adopted Operation & Maintenance Budget

ACCOUNT	2022 Actual	2023 Budget	2023 6/30/2023	2023 Projected	Adopted 2024 Budget	23 vs 24 Budget
D. CUSTOMER ACCOUNT						
Metering, Billing & Collection	$636,774	$665,000	$318,387	$637,000	$665,000	0.0%
E. ADMINISTRATION & GENERAL						
Dues, Publications & Travel	$27,272	$30,000	$8,059	$30,000	$25,000	-16.7%
FICA Tax	223,222	280,000	112,686	225,000	282,000	0.7%
Property & Liability Insurance	129,542	134,000	63,143	142,000	140,000	4.5%
Worker's Compensation Insur.	78,248	77,000	38,280	77,000	68,000	-11.7%
Office Rent	33,780	35,000	17,701	35,000	37,000	5.7%
Wisconsin Retirement Expense	192,249	301,000	104,327	209,000	284,000	-5.6%
Medical Expenses	1,002,792	1,000,000	422,908	846,000	950,000	-5.0%
Life Insurance	9,834	12,000	3,804	8,000	11,000	-8.3%
Safety Programs & Supplies	35,532	26,000	16,606	33,000	38,000	46.2%
City Departmental Charges	90,300	94,000	47,410	95,000	100,000	6.4%
Training Programs	13,524	28,000	7,737	15,000	29,000	3.6%
Stormwater Fees	41,296	46,000	17,752	48,000	50,000	8.7%
DNR Permit Fee	137,473	142,000	133,675	135,000	136,000	-4.2%
Airport Property Lease	54,897	52,000	58,852	59,000	60,000	15.4%
TOTAL	$2,069,962	$2,257,000	$1,052,941	$1,957,000	$2,210,000	-2.1%
SUMMARY						
A. Personel Service	$3,046,294	$3,589,000	$1,469,667	$3,250,000	$3,690,000	2.8%
B. Contractual Service	2,932,573	2,750,000	1,393,359	2,937,000	2,860,000	4.0%
C. Materials & Supplies	1,043,106	1,114,000	504,658	1,010,000	1,181,000	6.0%
D. Customer Accounts	636,774	665,000	318,387	637,000	665,000	0.0%
E. Administrative & General	2,069,962	2,257,000	1,052,941	1,957,000	2,210,000	-2.1%
TOTALS	$9,728,709	$10,375,000	$4,739,010	$9,791,000	$10,606,000	2.2%

RACINE WASTEWATER UTILITY
Capital Improvement Program 2024 - 2028
Adopted

		2024	2025	2026	2027	2028	Total	Funding
	GENERAL PLANT							
1	Laboratory Equipment	$100,000	$40,000	$0	$0	$0	$140,000	Revenue
2	Roof Replacement	305,000	350,000	250,000	250,000	250,000	1,405,000	Revenue
3	Office Furnishings Upgrade	-	3,000	3,000	-	-	6,000	Revenue
4	PLC & SCADA Equipment	50,000	50,000	50,000	50,000	50,000	250,000	Revenue
5	Clarifier Equipment Rehab	15,000	315,000	-	-	-	330,000	Revenue
6	LINKO Pretreatment Software	13,000	-	-	-	-	13,000	Revenue
7	Grit Removal Baffle System	65,000	65,000	-	-	-	130,000	Revenue
8	Final Clarifier Scum Collection Replace	15,000	15,000	-	-	-	30,000	Revenue
9	Final Clarifier Launder Covers	-	300,000	-	-	-	300,000	Revenue
10	**Property Development	2,000,000	-	-	-	-	2,000,000	COSS/CWFL
11	**Plant Upgrades - UV Disinfection	7,100,000	2,500,000	-	-	-	9,600,000	COSS/CWFL
12	**Plant Upgrades - Engine/Blower	4,200,000	1,000,000	500,000	7,500,000	-	13,200,000	COSS/CWFL
13	**Plant Upgrades - Biogas Conditioning	1,200,000	-	-	-	-	1,200,000	COSS/CWFL
	Subtotal	$15,063,000	$4,638,000	$803,000	$7,800,000	$300,000	$28,604,000	
	AUTOMOTIVE							Revenue
1	Pickup/Van/SUVs	$0	$0	$0	$43,000	$89,000	$132,000	Revenue
2	Sample Van	65,000	-	-	-	-	65,000	Revenue
3	Televising Van	-	-	321,000	-	-	321,000	Revenue
4	Skid Steer					39,000	39,000	Revenue
	Subtotal	$65,000	$0	$321,000	$43,000	$128,000	$518,000	
	COLLECTION SYSTEM							
1	LS Controls/Building	$100,000	$0	$100,000	$0	$0	$200,000	Revenue
2	**At North Beach Dev LS (city)	-	500,000	-	-	-	500,000	Surcharge
3	Field Meters and Samplers	8,500	8,500	8,500	46,500	8,500	80,500	Revenue
4	Lift Station Generator Replacement	30,000	-	-	30,000	-	60,000	Revenue
5	Lift Station Pump Replacements	7,000	7,000	15,000	10,000	10,000	49,000	Revenue
6	Interceptor Improvement Projects	455,000	375,000	590,000	375,000	375,000	2,170,000	Revenue
7	**Chicory Rd Interceptor-Storage	5,500,000	5,500,000	-	-	-	11,000,000	COSS/CWFL
8	**Goold-Main Storage-Sewer Improven	1,000,000	14,000,000	14,000,000	-	-	29,000,000	COSS/CWFL
	Subtotal	$7,100,500	$20,390,500	$14,713,500	$461,500	$393,500	$43,059,500	
	TOTAL COST	$22,228,500	$25,028,500	$15,837,500	$8,304,500	$821,500	$72,181,500	
	**Total Contributed Captital Projects	21,000,000	23,500,000	14,500,000	7,500,000	-	66,500,000	

RACINE WASTEWATER UTILITY
CLASS I CHARGES - 2024

9/18/2023
Adopted

AREA		2023	2024	% CHANGE
A.	City of Racine ($/ccf)	$2.50	$2.87	15.0%
B.	Elmwood Park ($/ccf)	$2.75	$2.84	3.2%
	North Bay ($/ccf)	$2.75	$2.84	3.2%
C.	Mt. Pleasant (int) ($/MG)	$1,413.91	$1,494.97	5.7%
	Caledonia ($/MG)	$1,413.91	$1,494.97	5.7%
	Sturtevant ($/MG)	$1,413.91	$1,494.97	5.7%
D.	Mt. Pleasant ($/MG)	$1,727.71	$1,806.22	4.5%
	Caledonia ($/MG)	$1,727.71	$1,806.22	4.5%

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.

RACINE WASTEWATER UTILITY
CLASS 2 CHARGES - 2024

9/18/2023
Adopted

AREA		2023	2024	Difference	% CHANGE
A.	City of Racine ($/MG)	$2,219.44	$2,506.21	$286.76	12.9%
B.	Mt. Pleasant - Sturtevant ($/MG)	$699.96	$788.45	$88.49	12.6%
C.	Caledonia ($/MG)	$992.73	$1,074.85	$82.11	8.3%
D.	BOD ($/1000 LBS.)	$279.65	$288.20	$8.55	3.1%
E.	SS ($/1000 LBS.)	$352.03	$357.75	$5.73	1.6%
F.	PHOS ($/1000 LBS.)	$2,374.32	$2,830.04	$455.72	19.2%

ISSUED	VEHICLE #	YEAR	MODEL	IDENTIFICATION NO.	TITLE NO.	LIC #	GVW	FUEL	ENGINE SIZE (LITERS)	AMOUNT $
3/14/2019	**WW003**	**2019**	Escape SE	1FMCU9GDKXUB14478	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	NMOLS7F6J1373444	182050444013-8	**99587**	5270 GVWR	NL-15.8 gal. LEV	2.5	$27,555.23
3/14/2019	**WW008**	**2019**	Escape SE	1FMCU9GD8KUB14477	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
11/7/2022	**WW012**	**2023**	Bolt EUV	1G1FY6SOXP4113887	223110375004-2	**98882**	GVWR	Electric	N/A	$32,048.00
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
2/24/2023	**WW016**	**2022**	F550 4X4 Reg Cab	1FDUF5HT2NDA25831	2305504420485	**C22538**	18000 GVWR	Diesel 40 gal.	6.7	$127,548.50
10/14/2024	**WW017**	**2023**	E-Transit 350	1FTBW1XK2PKA17742	24288044405-3	**C28646**	9500 GVWR	ELECTRIC	N/A	$55,101.50
9/5/2013	**WW018**	**2013**	Sprinter	WD3PE8CC4D5796274	1324Q8008-9	**86887**	8550 GVWR	Diesel 26 gal. LEV	3.0	$138,510.21
11/1/2023	**WW020**	**2024**	Vactor	1NPCL40X8RD666675	2.3305E+12	**C24979**	66,000 GVWR	Diesel 100 gal.	15.0	$576,983.20
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. LEV	6.2	$33,445.00
										$1,305,919.96