CITY OF Beloit WISCONSIN

Department of Public Works
Water Resources Division
Pretreatment Manual

Revised: September, 2018

This document is an approved guide to the operation, implementation, and maintenance of the City's Industrial Pretreatment Program. This guide is broken down into several chapters, each chapter covering a different aspect of the program. Many topics within the program are interrelated.

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Acronyms

ANSI American National Standards Institute
AO Administrative Order
BMP Best Management Practices
BOD Biochemical Oxygen Demand
CERCLA Comprehensive Environmental Response, compensation, and Liability Act
CFR .....Code of Federal Regulations
CIU Categorical Industrial User
CMOM Capacity, Management, Operation, and Maintenance
COD .....Chemical Oxygen Demand
CWA Clean Water Act
DOT Department of Transportation
EPA Environmental Protection Agency
ERG .....Emergency Response Guide
ERP Enforcement Response Plan
FDA Food & Drug Administration
FOG Fats, Oil, and Grease
gpd .....gallons per day
IPP Industrial Pretreatment Program
IU Industrial User
MAHL Maximum Allowable Headworks Loading
mgd Million Gallons per Day
MTCIU Middle Tier Commercial Industrial User
MUTCD Wisconsin's Manual on Uniform Traffic Control Devices
NH_3 Ammonia
NIOSH National Institute for Occupational Safety and Health
NOV Notice of Violation
NPP .....National Pretreatment Program
NR .....Natural Resources
NSCIU Non-significant Categorical Industrial user
OSHA Occupational Safety and Health Association
POC Pollutants of Concern
POTW Publicly Owned Treatment Works
PPE Personal Protective Equipment
QA/QC Quality Assurance/Quality Control
RCRA Resource Conservation and Recovery Act
RTECS Registry of Toxic Effects of Chemical Substances
SCPP Spill Control Prevention Plan
SDS Safety Data Sheet
SIU Significant Industrial User
SNC .....Significant Non-Compliance
TRC Technical Review Criteria
TSS Total Suspended Solids
USPS .....United States Postal Service
VOC Volatile Organic Compounds
WDNR Wisconsin Department of Natural Resources

WPCF	Water Pollution Control Facility
WPDES	Wisconsin Pollutant Discharge Elimination System

CITY OF Beloit WISCONSIN

CHAPTER 1

Purpose and Policy

The Industrial Pretreatment Program sets forth uniform requirements for users of the City of Beloit's Publicly Owned Treatment Works (POTW) to comply with all applicable State and Federal laws, including the Clean Water Act (33 United State Code section 1251, et seq.), all General Pretreatment Regulations (Title 40 Code of Federal Regulations Part 403), Wisconsin State Regulation NR 211, and City of Beloit Code of General Ordinances Chapter 29 and other regulations that may apply.

City of Beloit Public Works – Water Resources Division

September, 2018

PURPOSE AND POLICY

The City of Beloit's Water Pollution Control Facility (WPCF) is a publicly owned treatment works (POTW) that collects wastewater from homes, commercial buildings, and industrial facilities and transports it via a series of pipes, known as a collection system, to the treatment plant. Wisconsin State Statute 283 defines "Environmental Pollution" as the contaminating … the air, land, or waters of the State, or making the same injurious to public health, harmful for commercial or recreational use, or deleterious to fish, bird, animal, or plant life. The treatment plant removes harmful organisms and other contaminants from the sewage so the wastewater can be discharged safely into the Rock River. Without treatment, sewage creates bad odors; contaminates rivers, lakes, and water supplies; and spreads disease.

POTWs are designed to treat typical household waste, biodegradable commercial waste, and biodegradable industrial waste. The regulations in Title 40 of the Code of Federal Regulations (CFR), section 401.16, define five contaminants as conventional pollutants. These conventional pollutants include specific pollutants that are expected to be present in domestic discharges to POTWs (Biochemical Oxygen Demand – BOD; Total Suspended Solids – TSS; Fecal Coliform; pH; Fats, Oils, and Grease – FOG). Commercial and industrial facilities may, however, discharge toxic or non-conventional pollutants that the treatment plant is neither designed for, nor able to, remove.

Discharges from both industrial and commercial sources can cause problems at POTWs and can have detrimental effects on the water quality of the receiving waterbody, in Beloit this waterbody is the Rock River. The undesirable effects of those discharges can be prevented by using treatment techniques or management practices to reduce or eliminate the discharge of the contaminants. The act of treating wastewater before discharge to a POTW is commonly referred to as pretreatment. The Environmental Protection Agency (EPA) oversees the National Pretreatment Program (NPP) which is published in 40 CFR Part 403 and provides the regulatory basis to require nondomestic dischargers to comply with pretreatment standards to ensure that the goals of the Clean Water Act are achieved.

The NPP identifies specific requirements that apply to all Industrial Users (IUs) or nondomestic sources of wastewater to a POTW, additional requirements that apply to all Significant Industrial Users (SIUs), and certain requirements that only apply to Categorical Industrial Users (CIUs). The objectives of the NPP are achieved by applying and enforcing three types of discharge standards:

- **Prohibited Discharge Standards** forbid the discharge of any pollutant(s) to a POTW that causes pass through or interference. These national standards apply to all IUs, regardless of whether or not the POTW has an approved pretreatment program or whether the IU has been issued a control mechanism or permit. The Prohibited Discharge Standards are listed in 40 CFR 403.5.

- **Categorical Pretreatment Standards** limit the pollutants discharged to POTWs from specific process wastewater that comes from defined industrial categories. These national technology-based standards apply regardless of whether or not the POTW has an approved pretreatment program or the IU has been issued a control mechanism or permit. Such industries are called Categorical Industrial Users. The standards are promulgated by EPA in accordance with Section 307 of the Clean Water Act.

- **Local Limits** reflect the specific needs and capabilities at individual POTWs and are designed to protect the POTW, its receiving waters, and its sludge disposal practices. Regulations at 40 CFR 403.8(f) (4) state that POTW Pretreatment Programs must develop Local Limits or demonstrate that they are unnecessary; 40 CFR 403.5(c) states that Local Limits are needed when pollutants are received that could result in pass through or interference at the POTW. Essentially, Local Limits translate the General Prohibited Discharge Standards of 40 CFR 403.5 to site-specific needs.

The EPA implements the NPP to ensure that industrial and commercial facilities (e.g. dry cleaners, gas stations and food service establishments) discharging to POTWs do not discharge pollutants that pass through the POTW untreated or interfere with a POTWs wastewater treatment processes and sewage sludge use or disposal. The EPA conducts both inspections and audits of POTWs to assess the effectiveness of their pretreatment program. Pretreatment inspections involve:

- Reviewing the approved program, annual reports, Wisconsin Pollutant Discharge Elimination System (WPDES) compliance status, previous inspection reports, pretreatment files, citizen complaints;
- Interviewing officials knowledgeable of the program;
- Inspecting various industrial user operations, if appropriate.

Pretreatment audits are designed as a comprehensive review of all facets of the POTWs pretreatment program. The audit addresses all of the items covered in a pretreatment inspection, but in greater detail. Inspections and audits can be conducted by the EPA or the State of Wisconsin Department of Natural Resources (WDNR).

PURPOSE

The City of Beloit is required by Federal and State regulations to control pollutants discharged or contributed to its wastewater collection and treatment system. The program used for this is called the Industrial Pretreatment Program (IPP). The City's program was initially approved in 1984.

The US EPA amended the Clean Water Act to improve environmental protection in 1981, 1988, and 1990. Each of these revisions has driven changes in environmental regulations. The State of Wisconsin utilizes the DNR to enforce these regulatory changes.

The WDNR uses WPDES permits issued to POTWs to implement these changes at the local level. These changes require regular revisions of the City's IPP documents. The last major IPP updates occurred in 2017, and brought the City into harmony with 40 CFR Part 403 of the National Pretreatment Regulations.

Code of General Ordinances – Chapter 29

This chapter establishes uniform requirements to the City's wastewater collection and treatment system and enables the City to comply with applicable State and Federal laws required by the Clean Water Act and the General Pretreatment Regulations, State regulations and other regulations that may apply.

Chapter 29 regulates contributors to the municipal wastewater system through:

- Enforcement of general requirements for all users;
- Issuance of permits to certain users;
- Monitoring activities;
- User reporting requirements.

Chapter 29 assumes that existing customers' capacity will not be preempted and provides for the setting of fees for equitable distribution of costs resulting from the programs established herein.

Chapter 29 applies to persons within and outside of the City who are, by contract with or permit from the City, users of the City POTW. Except as otherwise provided herein, the Environmental Coordinator (as designated by the Director of Public Works) shall establish, revise, administer, implement and enforce the provisions of this chapter.

The City is authorized to enforce the provisions of Chapter 29 of the Beloit Code of General Ordinances pursuant to 40 CFR 403.8 and 403.9, NR 211 and the requirements of the City's WPDES permit, WI-0023370-09-0. Implementation of the program is conducted through:

- **Inventories**
  - Character and volume of SIU discharge;
  - Priority pollutants;
  - Local limits;
  - Permit and permit applications for significant, industrial, commercial users, and hauled waste.

- **Control and Enforcement**
  - SIU monitoring and compliance;
  - SIU violation report;
  - As needed commercial monitoring and compliance;
  - Industrial/commercial violation report;
  - Hauled waste and special wastewater projects;
  - Control mechanisms (permits, agreements, contracts).

- **Annual Program Reviews**
  - Program effectiveness analysis;
  - Program modifications.

- **Special Conditions**
  - Surveillance;
  - Publication of significant violators;
  - Limitations for SIUs, Commercial users, and Reclamation Haulers.

SCOPE

The IPP shall apply to all commercial and industrial users of the POTW. The IPP authorizes the issuance of wastewater discharge permits; provides for monitoring, compliance, and enforcement activities; establishes administrative review procedures; requires user reporting; and provides for the setting of fees for equitable distribution of costs resulting from the program established herein.

OBJECTIVES

The objectives of this program are:

- To prevent the introduction of pollutants into the municipal wastewater/storm system from discharges or site run off that will interfere with the normal operation of the system, or contaminate the resulting biosolids, or affect the waters of the State;
- To prevent the introduction of pollutants into the POTW that will pass through the system, inadequately treated, into receiving waters or the atmosphere, or otherwise be incompatible with the PTOW;
- To protect the POTW personnel, the general public, and the environment;
- To promote and improve the opportunity to recycle and reclaim wastewater and biosolids from the PTOW;
- To set fees for the equitable distribution of the cost of operation, maintenance, and improvement of the POTW and the costs of the City's IPP program;
- Work with other agencies to protect the environmental conditions within the City and its neighboring communities, which includes inter-jurisdictional agreements; and
- To enable the City of Beloit's Water Pollution Control Facility to comply with its WPDES permit conditions, sludge use and disposal requirements, and any other Federal or State laws to which the POTW is subject.

POLICY

Pollution prevention is everyone's concern and responsibility. The preservation, protection, restoration and improvement of the quality of the environment go hand in hand with protection of human life and health.

It is the policy of the City of Beloit that the Pretreatment Program will:

- Annually review the cost of all users and align its revenue system to recover actual program costs to ensure compliance with 40 CFR 403.8 including cost recovery measures for implementation and enforcement by the Environmental Coordinator, under the direction of the Director of Public Works or the Director of Water Resources ;
- Ensure adequate legal authority to fully carry out the Pretreatment Program;
- Provide adequate and competent staffing to implement the Pretreatment Program;
- Review and approve pretreatment equipment designs and specifications prior to installation by permitted users;
- Prohibit new connections from infiltration sources to the sanitary sewer;
- Provide prior approval on remediation projects and hauled waste disposal that discharge to the POTW. All waste will follow the program set forth by the Environmental Coordinator;
- Ensure new sewers and connections will be properly designed and constructed;
- Ensure all state plumbing codes will be strictly enforced;
- Comply with and base all approved requirements on the City of Beloit's Code of General Ordinances, Chapter 29, along with the General Pretreatment Regulations (40 CFR 403 and NR 211) and the Clean Water Act;
- Establish and review local limits at least every five years. Plant allocations will also be reviewed at the same frequency;
- Ensure that all wastes from domestic and nondomestic sources are to be properly treated and disposed of by approved means;
- Review and revise this approved Pretreatment Manual periodically by the Environmental Coordinator which gives a detailed description on procedures and administration of the program. This manual is referred to in the Code of General Ordinances Chapter 29 for specific details not addressed in the ordinance.

Capacity, Management, Operation, and Maintenance (CMOM) Program

A CMOM Program is to assure that a sewage system is properly managed, operated and maintained at all times; has adequate capacity to convey peak flows; and all feasible steps are taken to eliminate excessive infiltration and inflow from the system. A CMOM Program must mitigate the impact of overflows on waters of the state, the environment and public health.

The City's CMOM program was revised in 2016. Guidance for the preparation of this document came from many manuals and literature gathered over the last ten years. The CMOM program will be amended every three to five years to make needed changes that reflect the progress of rehabilitation, new projects, government requirements, and changing goals.

CITY OF Beloit WISCONSIN

CHAPTER 2

Implementation

40 CFR 403.8(f) grants specific legal authorities to POTWs to implement and enforce a pretreatment program.

City of Beloit Public Works – Water Resources Division

September, 2018

IMPLEMENTATION

The General Pretreatment Regulations establish responsibilities among federal, state, and local government; industry; and the public to implement pretreatment standards to control pollutants that pass through or interfere with POTW treatment processes or that can contaminate sewage sludge. These regulations apply to all nondomestic sources that introduce pollutants into a POTW.

Unlike other environmental programs that rely on federal or state governments to implement and enforce specific requirements, under the National Pretreatment Program most of the responsibility rests on local municipalities. Thus, section 403.8(a) of the General Pretreatment Regulations provides that any POTW with a total design flow of greater than 5 million gallons per day (MGD) and smaller POTWS in defined circumstances must establish a local pretreatment program to prevent pass through and interference. The City of Beloit POTW has a design flow of 11 MGD.

The General Pretreatment Regulations use two terms in describing responsibilities under the regulations. One is the term *Control Authority.* Under the regulations, where a POTW has an approved pretreatment program, the POTW is the Control Authority. The term *Approval Authority* describes the party with responsibility to administer the National Pretreatment Program – either a state with an approved pretreatment program or the EPA region for that state.

POTWs establish local pretreatment programs to control discharges from nondomestic sources. These programs must be approved by the Approval Authority, which is also responsible for overseeing implementation and enforcement of the program. Local pretreatment programs must contain the following six minimum elements as per 40 CFR 403.8(f):

- **Legal Authority** – The POTW must operate pursuant to legal authority enforceable in federal, state or local courts, which authorizes or enables the POTW to apply and enforce any pretreatment requirements developed pursuant to the Clean Water Act (CWA) and implementing regulations. At a minimum, the legal authority must enable the POTW to:
    - Deny or lay conditions upon discharges to the POTW;
    - Require compliance with pretreatment standards and requirements;
    - Control IU discharges through permits, orders, or similar means;
    - Require IU compliance schedules when necessary to meet applicable pretreatment standards and/or requirements, and the submission of reports to demonstrate compliance;
    - Inspect and monitor IUs;
    - Obtain remedies for IU noncompliance; and
    - Comply with confidentiality requirements.

- **Procedures** – The POTW must develop and implement procedures to ensure compliance with pretreatment requirements, including:
    - Identifying and locating all IUs subject to the pretreatment program;
    - Identifying the character and volume of pollutants contributed by such users;
    - Notifying users of applicable pretreatment standards and requirements;
    - Receiving and analyzing reports from IUs;
    - Sampling and analyzing IU discharges;
    - Evaluating the need for IU slug control plans;
    - Investigating instances of noncompliance; and
    - Complying with public participation requirements.
- **Funding** – The POTW must have sufficient resources and qualified personnel to carry out the authorities and procedures specified in its approved pretreatment program.
- **Local Limits** – The POTW must develop local limits in defined circumstances or demonstrate why these limits are not necessary.
- **Enforcement Response Plan (ERP)** – The POTW must develop and implement an ERP that contains detailed procedures indicating how the POTW will investigate and respond to instances of IU noncompliance.
- **List of Significant Industrial Users (SIUs)** – The POTW must prepare, update, and submit the Approval Authority a list of all SIUs and where applicable indicate which SIUs are Non-significant Categorical Industrial User (NSCIU) or Middle-Tier Categorical Industrial User (MTCIU).

The National Pretreatment Program regulates IUs through three types of regulatory entities – US EPA, Approval Authority (WDNR), and Control Authority (City of Beloit). Approval Authorities oversee Control Authorities, while Control Authorities regulate IUs.

Legal Authority

Legal Authority is granted to the City through two documents:

- The City Attorney's Statement of Legal Authority (10/14/1983)
- City of Beloit Code of General Ordinances Chapter 29

Code of General Ordinances – Chapter 29

Chapter 29 establishes uniform requirements for contributors to the City wastewater collection and treatment system and enables the City to comply with applicable State and Federal laws required by the Clean Water Act (33 U.S.C. 1251, et. seq.), the General Pretreatment Regulations (40 CFR, Part 403) and Chapter NR 211 of the Wisconsin Administrative Code.

Procedures

This Industrial Pretreatment Program Manual specifies procedural requirements in subsequent chapters.

FUNDING

To properly implement a pretreatment program, the POTW must have adequate:

- funds to support the program;
- a workable organization to integrate elements of the program;
- a staff of adequate size and training to carry out the program requirements;
- the necessary equipment and supplies to fulfill monitoring and other program needs.

REVENUE

The City of Beloit provides mechanisms to collect sufficient revenue to fully implement the Pretreatment Program. Invoices are issued monthly based on IUs discharge using flow and pollutant loadings as points of measure. Monitoring and enforcement expenditures are recovered from IUs on a regular basis based on man hours, equipment, and materials used. All fees charged are reviewed annually and approved through the City of Beloit budget process.

As a result of enforcement action against the City in 1985, it was agreed that all money recovered from enforcement activities are placed in a specified account and is used strictly for program needs or enhancements.

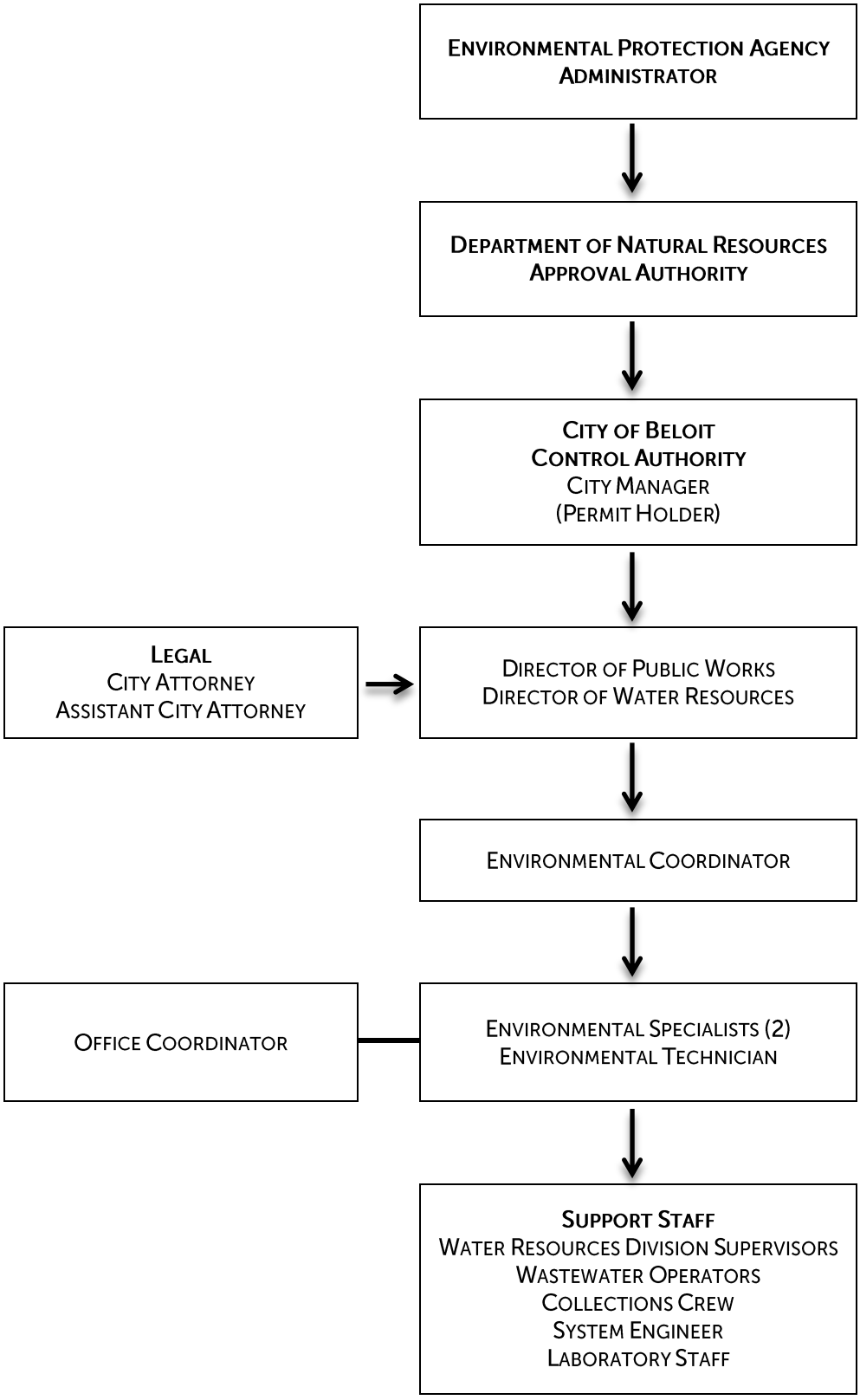
ORGANIZATION

The organizational structure of the Pretreatment program is structured to accomplish its goals. The structure includes clear and appropriate lines of authority, identification of staff responsibilities, qualifications of staff, and staffing levels related to required work efforts.

- EPA
  - Oversees program implementation at all levels;
  - Develops and modified regulations for the program;
  - Develops policies to clarify and further define the program;
  - Develops technical guidance for program implementation;
  - Initiates enforcement actions as appropriate;
  - Regional Office oversees state program implementation.
- WDNR
  - Notify POTWs of their responsibilities;
  - Review and approve requests for POTW pretreatment program approval or modification;
  - Review requests for site-specific modifications to categorical pretreatment standards;
  - Oversee POTW program implementation;
  - Provide technical guidance to POTWs;
  - Initiate enforcement actions against noncompliant POTWs or industries.

- City of Beloit, Department of Public Works, Water Resources Division
  - Develop, implement, and maintain approved pretreatment program;
  - Evaluate compliance of regulated IUs;
  - Initiate enforcement action against POTW dischargers as appropriate;
  - Submit reports to WDNR;
  - Develop local limits as required;
  - Develop and implement enforcement response plan;
  - Review Requests for net/gross variances.
- Industrial Users
  - Comply with applicable pretreatment standards and reporting requirements.

Organizational Chart



Resources and Staffing

The responsibilities of City staff are listed below:

- City Manager is the permit holder and has delegated the overall Pretreatment Program responsibility to the Director of Public Works and the Water Resources Director.
- Director of Public Works oversees the entire Pretreatment Program to ensure program requirements are fulfilled.
  - Provides the necessary funding and cost recovery aspects of the program as required in 403.8(f)(3);
  - Provides knowledgeable, experienced personnel to fulfill the requirements of the program along with any technical and managerial personnel on enforcement issues;
  - Works with the Environmental Coordinator to correct any program deficiencies.
- Director of Water Resources under the direction of the Director of Public Works:
  - Provides personnel from the POTW as support staff for the program;
  - Responsible to ensure that the terms and conditions of the POTW's WPDES permit are met;
  - Ensures the overall operation and maintenance of the POTW, including employee safety, protection of the collection system, the facility, effluent quality, and biosolids disposal.
- City Attorney/Assistant City Attorney is consulted with on all legal matters pertaining to the Pretreatment Program including interpretation of all regulations and enforcement actions.
- Environmental Coordinator is responsible for understanding, managing and monitoring regulation changes for all local, state, and federal Pretreatment Program requirements including but not limited to:
  - Establishing, maintaining, monitoring, and enforcing the Pretreatment Program;
  - Administering sampling protocols, domestic studies, and other program components to assess program and IU compliance;
  - Retaining a working knowledge of the disposal of toxic substances and industrial waste that are regulated by any state or federal law and/or listed in the latest edition of the National Institute for Occupational Safety and Health (NIOSH) and the Registry of Toxic Effects of Chemical Substances (RTECS);
  - Having a working knowledge of plant processes and operations, biosolids disposal, and land application requirements;
  - Understanding proper practices in residential and commercial plumbing as it affects the Pretreatment Program.
  - Note: for a complete list of duties and responsibilities see the Job Description for the Environmental Coordinator
- Environmental Specialist/Environmental Technician is responsible for implementing the Pretreatment Program by:
  - Supervising IUs for all regulatory compliance;
  - Enforcing regulations for all dischargers to the POTW;

  - Performing inspections, sampling, environmental response, data analysis, and permitting for IUs;
  - Conducting a domestic study once every five (5) years to determine wastewater allocations (see Chapter 3 of this manual);
  - Establishing and maintaining program components such as the Spill Control Prevention Program (SCPP), cross connection program, well permitting program, public education, and water sampling;
  - Being familiar with industrial processes where wastewater streams are generated;
  - Approving pretreatment equipment and processes;
  - Maintaining a proactive approach to emerging pretreatment technology.
  - Note: for a complete list of duties and responsibilities see the Job Descriptions for Environmental Specialist and Environmental Technician.
- **Support Staff**
  - WPCF Operations notifies the Environmental Staff of any issues with the POTW, including the plant and lift stations.
  - Collection System Staff notifies the Environmental Staff of any issues in the collection system.
  - Laboratory Staff is responsible for quality assurance and control (QA/QC) by utilizing EPA approved testing methods, and reporting testing results.

Local Limits

Local limits are reviewed upon new WDNR regulations.

Enforcement Response Plan

The Enforcement Response Plan (ERP) is reviewed annually. The citation fee schedule is reviewed annually through the City of Beloit's budget process. This section is covered in Chapter 7, Enforcement Response Plan.

List of SIUs

Currently there are over 800 IUs in the City of Beloit's Pretreatment Program. 11 of them are SIUs:

- Beloit Box Board
- Beloit Health System – Beloit Memorial Hospital
- City of Beloit – Krueger Pool
- Fairbanks Morse
- Frito-Lay
- Genencor- DuPont
- Hormel Foods Corp.
- IPMPC
- Kerry Ingredients
- Kettle Foods
- Tru Aseptics

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CHAPTER 3

Allocations

The City performs a domestic study at regular intervals in order to track domestic wastewater concentration and composition. This Chapter is a copy of that study from 2016.

City of Beloit Public Works – Water Resources Division

September, 2018

ALLOCATIONS

The City of Beloit began a program to track domestic strength wastes in 1992. The purpose of this tracking was to assist in developing a fair and proportionate Sewer Rate Methodology, to support review and revision of local discharge limits, and to identify pollutants of concern for plant capacity. Utilizing this initial sampling and analysis protocol, the domestic sampling program has also been used to determine allocations for conventional pollutants and as input in calculating the mass balance of the City of Beloit Water Pollution Control Facility (WPCF). Additionally, prior to launching each study, assessments were made about prior results and potential concerns. Below is a list of concerns that were addressed with the 2016 study:

- Domestic strength previously assessed by the Sewer Rate methodology may be higher than the 280 mg/L BOD, 500 mg/L Chemical Oxygen Demand (COD), 280 mg/L TSS and 23 mg/L Ammonia (NH_3) that is currently being used for minimum strength. The domestic studies undertaken in 2013 and 2016 indicated an upward trend in concentrations.
- Decreased flows and increased waste strengths may be partially attributable to domestic users as well as industrial customers.
- Waste strength and flows may be different in new homes as opposed to older, more established neighborhoods. Sampling sites need to be re-evaluated for relevance.

Future studies will:

- Assess analysis results to determine the proper Sewer Rate Methodology for minimum domestic strength waste charges for all users.
- Compare domestic strength and flows with those from SIUs. SIUs are billed for domestic minimums where minimums apply and pay a surcharge for pounds of pollutants above domestic minimums as established in the fee schedule.
- Determine current plant capacity for flow, COD, TSS, and NH_3. Domestic and commercial loadings are subtracted from current plant capacity to determine capacity available for use by the SIUs and future growth.

BACKGROUND

During the ongoing studies, different sites have been evaluated and adjustments made to further validate the basic assumptions about the average strength of domestic wastewater in the City of Beloit.

The original two sites used in 1992 were the intersection of Wood Drive and Virginia Street, and the interceptor of North Street pump station. Sampling and analysis for conventional pollutants was done for both sites. The final domestic strength was found to be: BOD 280 mg/L; TSS 280 mg/L; NH_3 23 mg/L. The City later converted the domestic BOD of 280 mg/L to 500 mg/L of COD based on the BOD: COD ratio.

In 1993 the program was expanded to an additional two sites, Fredrick Street between Burton Avenue and Staborn Street, and the intersection of Broad Street and Hancock Street.

In 1994, a basin review was completed to estimate population in each basin; this was the notorious "number of cars in the drive and toys in the yard" estimate.

In 1995, metals and phosphorus analyses were added.

In 1997, the original Wood/Virginia intersection was dropped and the end of Bee Lane was added as a replacement site. Due to high infiltration and inflow, the Broad and Hancock site changed to a site on Athletic Avenue. Between 1995 and 1997, the City of Beloit purchased new equipment for sampling, allowing flow measurement without the risk of confined space entry.

In 2000 the Athletic Avenue sampling site was removed due to low flow and poor location. It was replaced with a site on Emerson Street east of Milwaukee Avenue. The analysis ws completed for all four sites but a domestic study report was not done.

From 2000 until 2007 the sites did not change.

In 2008 the North Street sampling manhole moved from 72-01 to 72-19, allowing the installation of a flow measurement weir from street level. This eliminated the indirect method of using pump run times at the North Street lift station instead of a direct measurement.

In 2013 and additional site located at the intersection of Turnberry Drive and Shopiere Road was added in order to include homes that were of more recent construction.

In 2016 the site located on Emerson Avenue was removed from the list due to complications with installing new sampling gear, fouling from wipes discharged by users, and the poor state of the manhole and lines causing erroneous flow readings. This site may be included again in future studies after the sewer is rebuilt or lined during regular rehabilitation work.

Methods and Procedures

The City performs a domestic study at regular intervals in order to track domestic wastewater concentration and composition in the City of Beloit. Prior to collection and analysis, the City of Beloit Environmental Staff should request that the collections Crew clean the lines immediately upstream of the sampling sites. An ISCO 6712 sampler is used in each of the four manholes for at least three 24- hour days. These locations are specifically chosen to have little or no input of commercial or industrial sewage upstream of the sampling sites. In 2008, the Environmental Coordinator requested that the SIUs and at least one domestic sampling site be done on the same day.

The ISCO 6712 sampler with a 750 area velocity flow module installed is used in conjunction with a temporary spring ring to measure flow through the site. The sampler takes small volumes (approximately 100 mL) of sample each time a specified amount of flow passes through the site. This flow proportionate composite sample is collected after 24 hours and the flow amount and a grab pH are recorded on site. The sample is returned to the WPCF laboratory where it is analyzed for: BOD, COD (mercury free method); TSS, NH_3, and

Phosphorus. The sample is also properly split, and the split is sent to a contract laboratory to be analyzed for COD (mercury method), Fats/Oils/Grease, Arsenic, Cadmium, Chromium, Copper, Cyanide, Lead, Nickel, Silver, and Zinc.

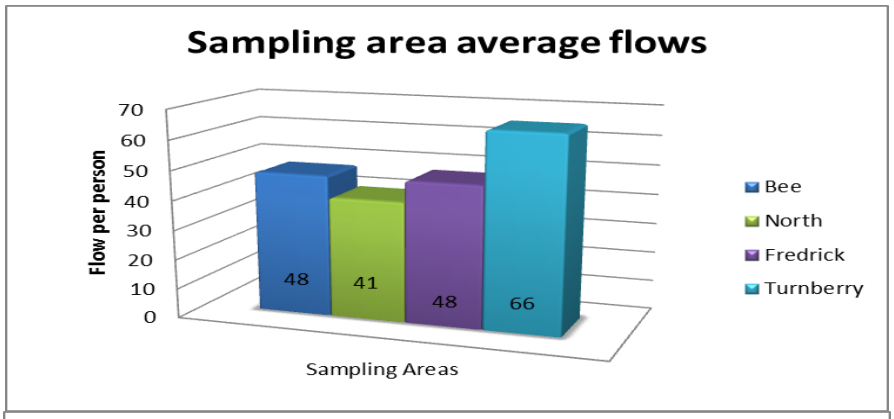
The four manhole sites include:

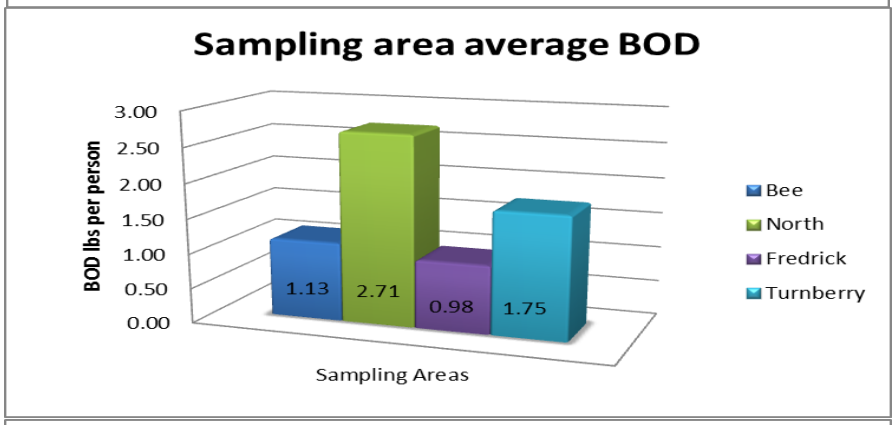
- Site #1 Bee Lane Manhole #36_28
- Site #2 North Street Manhole #72_19
- Site #3 Frederick Street Manhole #75_22
- Site #4 Turnberry Drive Manhole #35_50

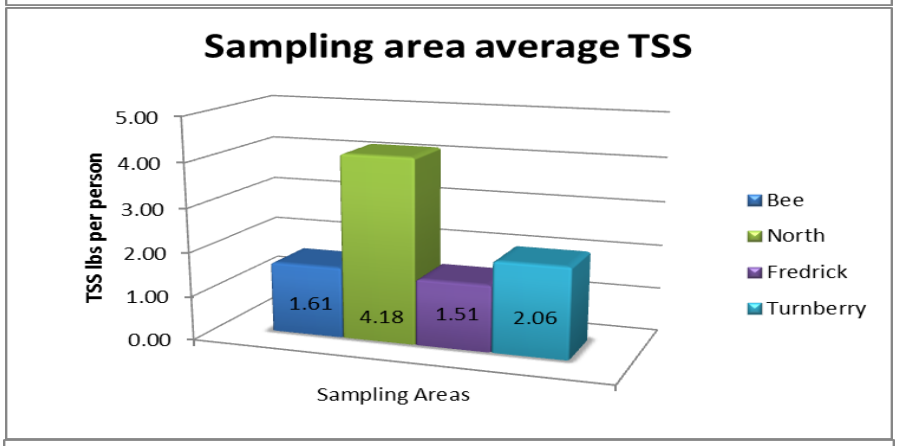
Domestic Results

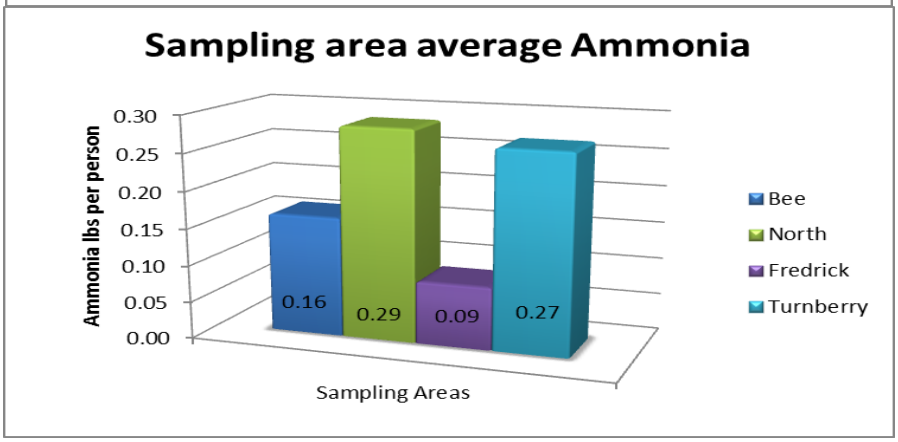
	2016														
	Flow	BOD	COD	TSS	NH3	P	FOG		BOD/	**BOD**	**COD**	**TSS**	**NH3**	**P**	**FOG**
Date	**gal**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**pH**	COD	lbs	lbs	lbs	lbs	lbs	lbs
BEE LANE															
08/24/2016	13116	249	676	332	47.4	5.7			0.37	27	74	36	5	1	0
08/25/2016	9343	379	1180	480	27.2	9.7			0.32	30	92	37	2	1	0
08/29/2016	13681	228	699	408	48.3	7.7		8	0.33	26	80	47	6	1	0
NORTH															
08/31/2016	7723	544	849	1150	31.9		64		0.64	35	55	74	2	0	4
09/01/2016	3752	379	526	260	41.5	5.9		7.3	0.72	12	16	8	1	0	0
09/06/2016	5775	228	810	364	47.8	7.2			0.28	11	39	18	2	0	0
FREDRICK															
09/20/2016	20549	585	111	1020	40.1	11.6		7.4		100	19	175	7	2	0
09/21/2016	14332	460	1091	760	38	11.5			0.42	55	130	91	5	1	0
09/26/2016	32315	333	843	340	41.5	6.9	54		0.40	90	227	92	11	2	15
TURNBERRY															
06/21/2016	13972	443	1229	652	52.3	11.4	61		0.36	52	143	76	6	1	7
06/22/2016	13972	334	763	332	56.6	7.7			0.44	39	89	39	7	1	0
06/23/2016	13972	344	911	332	62	7.8			0.38	40	106	39	7	1	0
Average	13542	376	807	536	45	8	60	8	0.42	43	89	61	5	1	2
	Industrial Results														
BMH															
07/28/2016	54858	189	442	107	12.3	1.4	19	8.6	0.43	86	202	49	6	1	9
DIAMOND															
07/27/2016	187400	790	1540	812	11.7	3.4	11	7.4	0.51	1235	2407	1269	18	5	17
DUPONT															
07/18/2016	286317	2562	4640	612	137	39	11	7.9	0.55	6118	11080	1461	327	93	26
FRITO LAY															
07/18/2016	439020	139	440	276	7.7	7.9	6.1	6.4	0.32	509	1611	1011	28	29	22
HORMEL															
07/20/2016	328800	983	1700	492	10.9	20	130		0.58	2696	4662	1349	30	55	356
IPM															
08/09/2016	18523	333	682	152	3.3	3.6	14		0.49	51	105	23	1	1	2
KERRY															
07/20/2016	27445	384	750	187	1.5	2.6	34	8.2	0.51	88	172	43	0	1	8
Total	1504865	9886	19882	9068	719	171	404			11299	21309	5936	471	195	467
SIU AVERAGE	191766	769	1456	377	26	11	32		0.48	567	1070	300	24	10	23
Industry totals	1342363	5380	10194	2638	184	78	225	39		10783	20239	5205	410	184	441

Accumulative Data Comparison of Sampling Areas

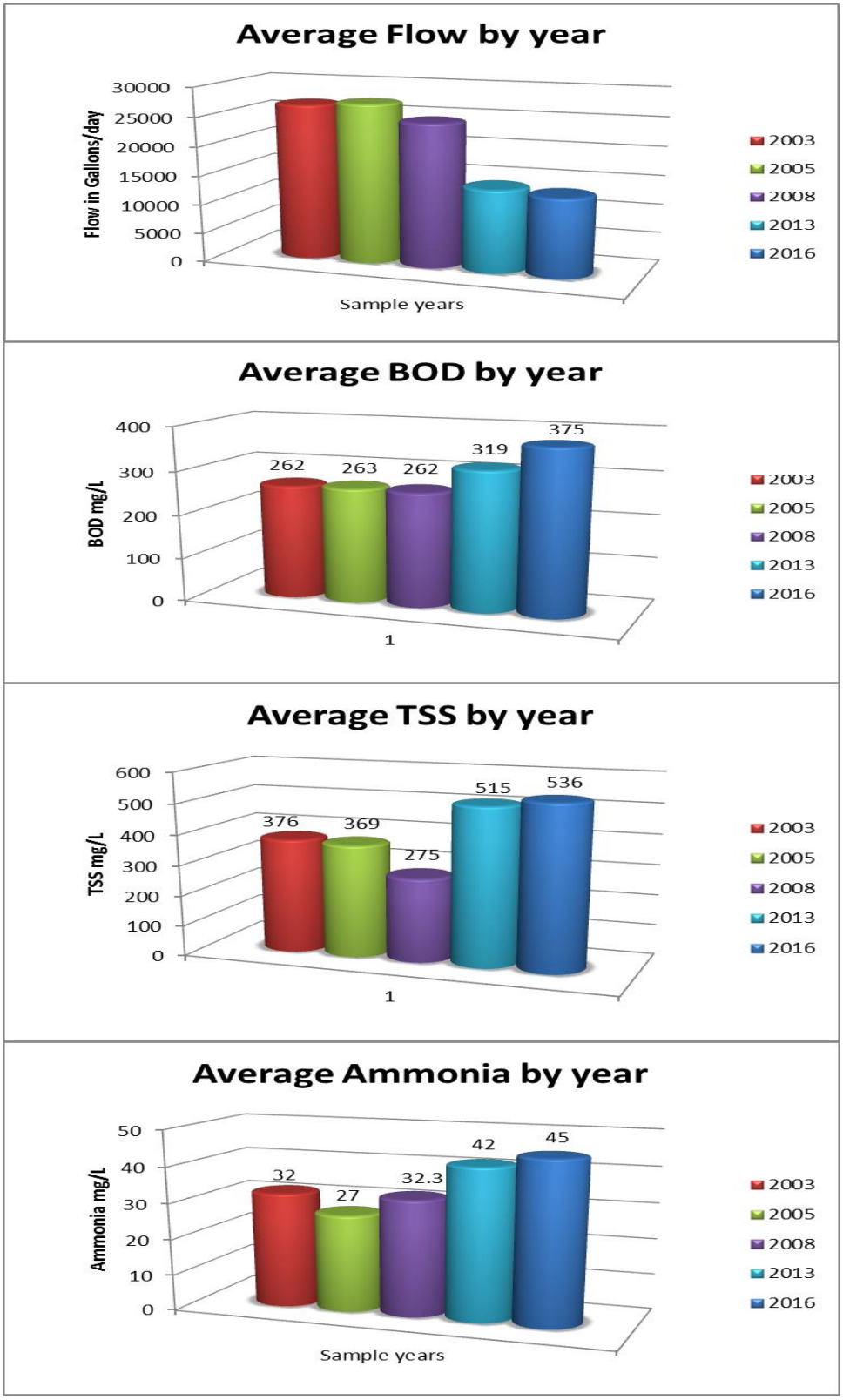




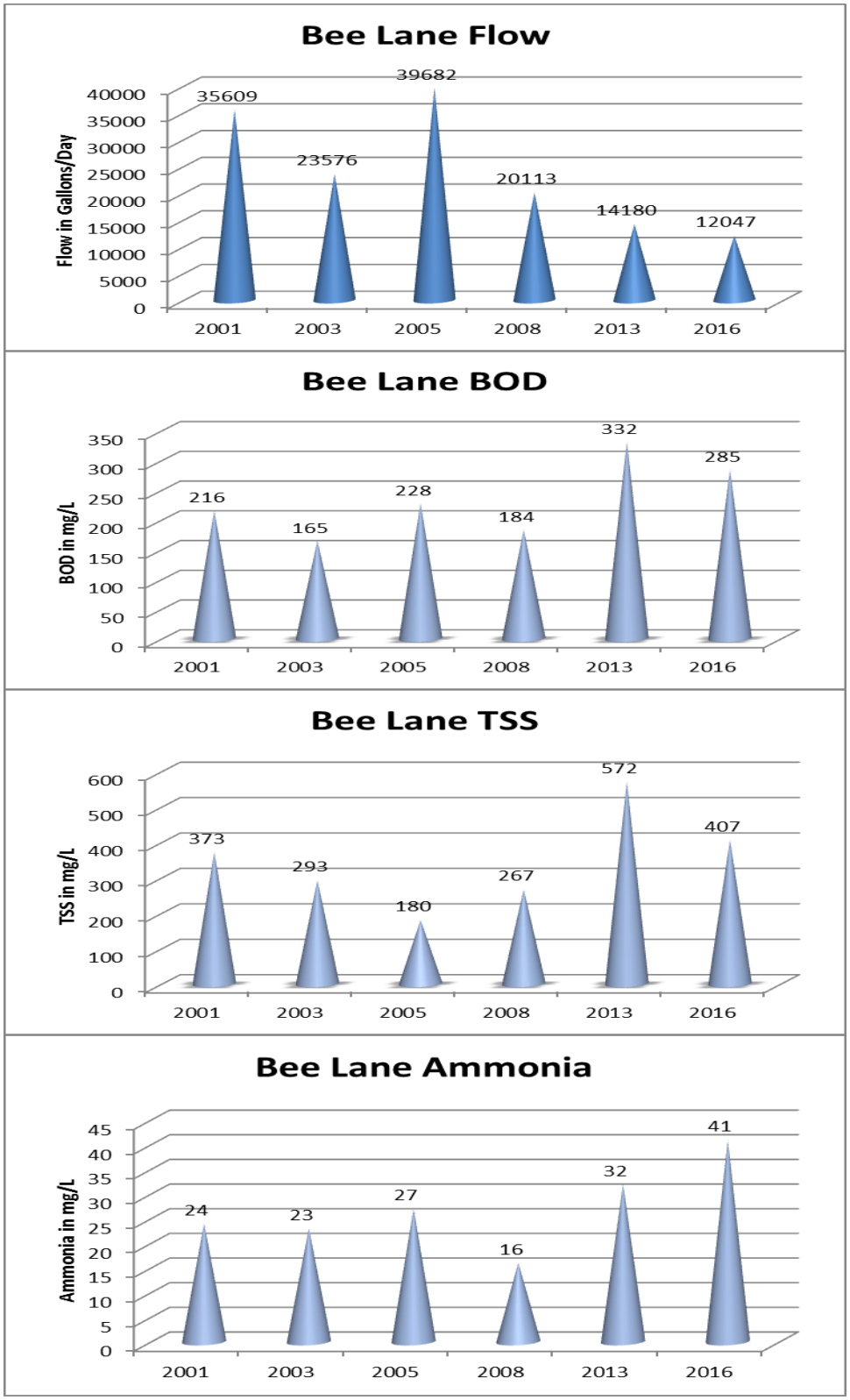




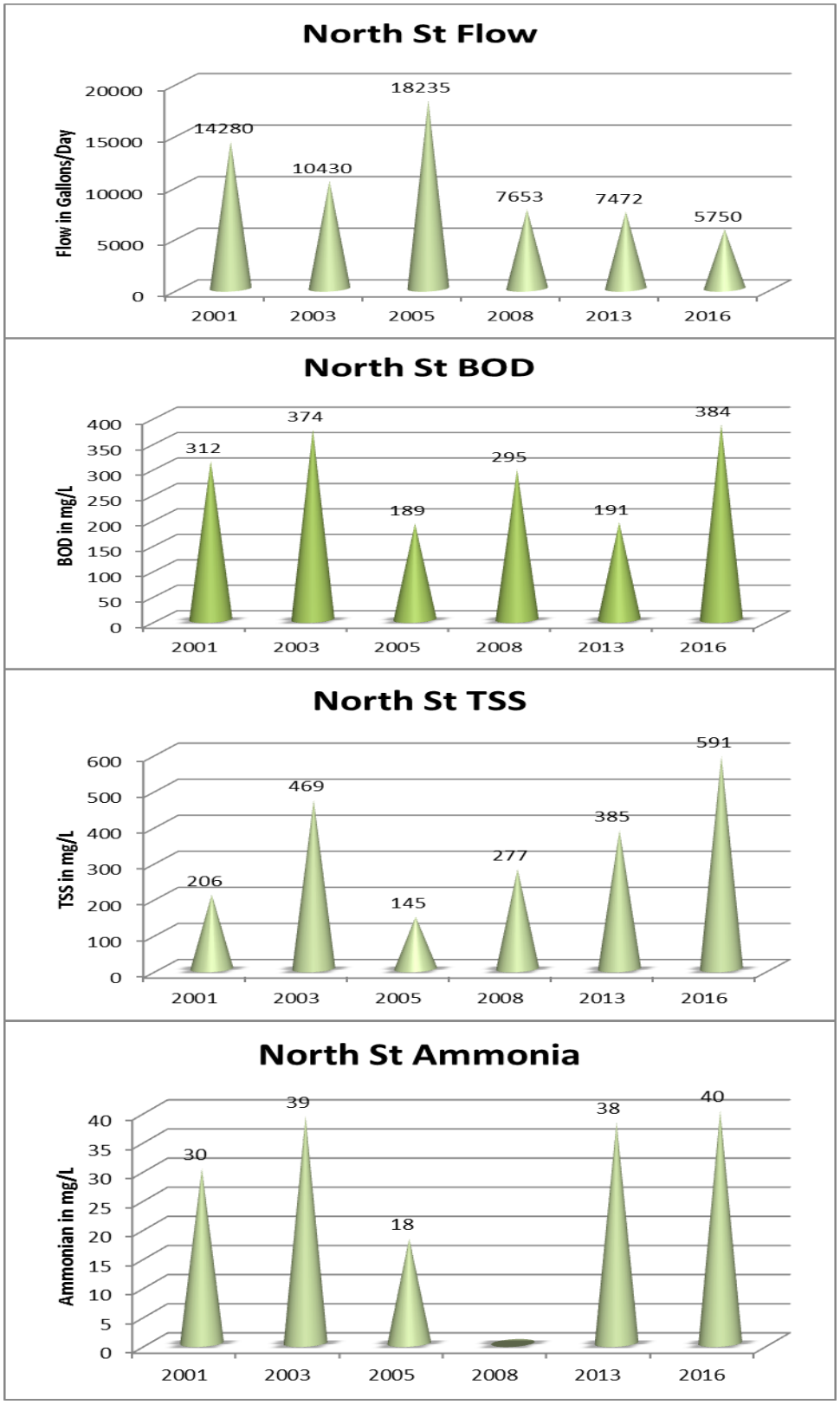
Comparison of Historical Averages



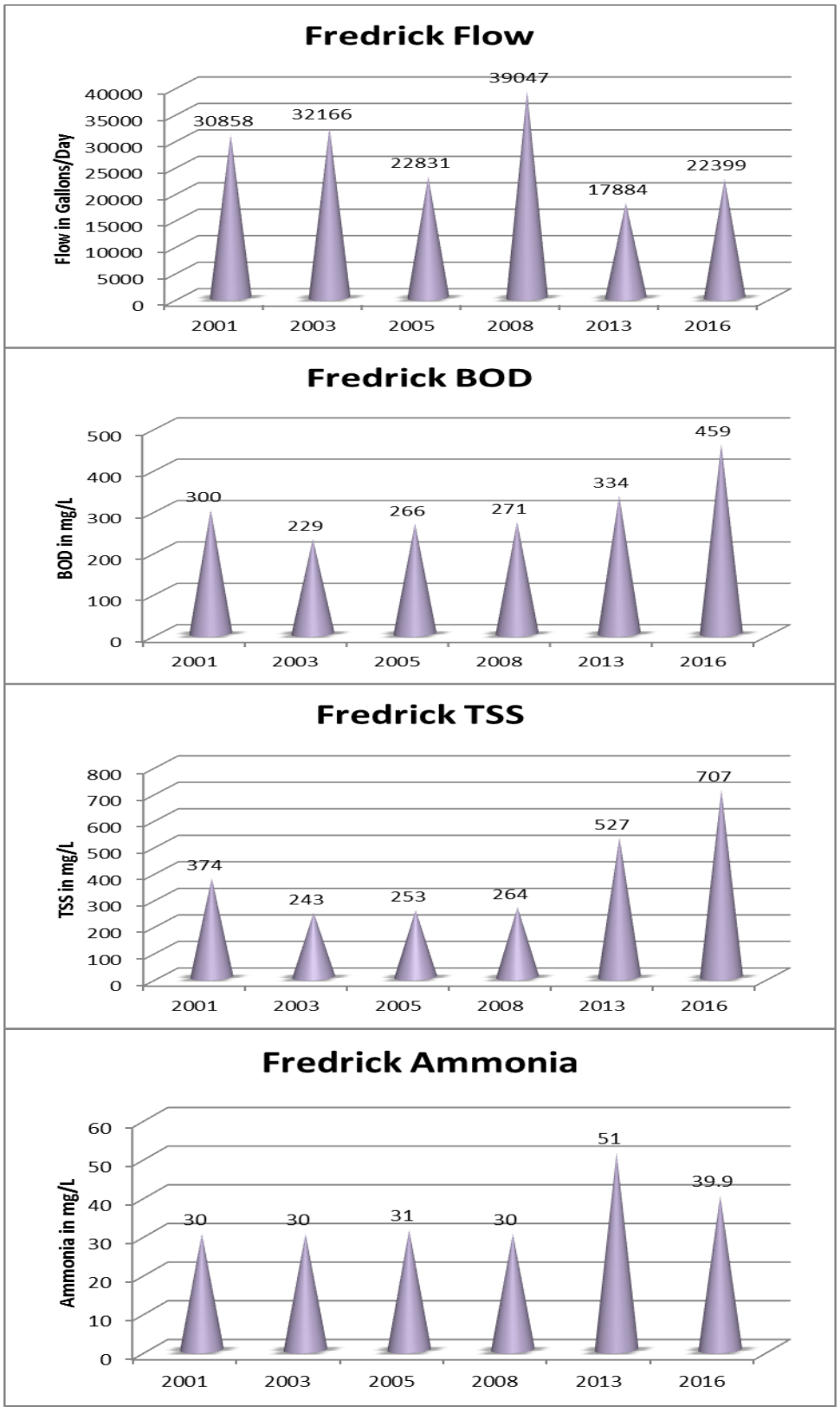
Bee Lane Annual Averages



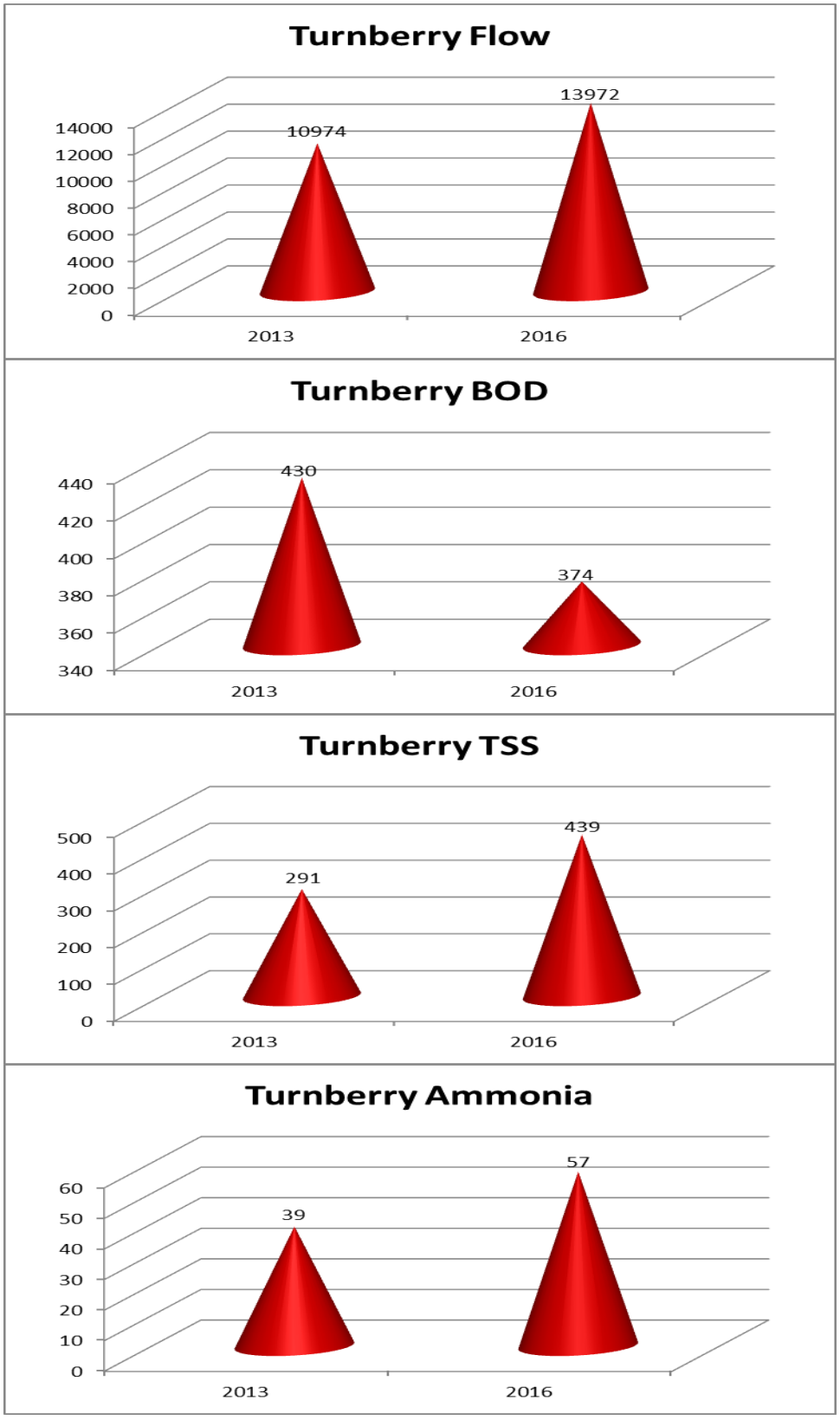
North Street Annual Averages



Fredrick Street Annual Averages



Turnberry Drive Annual Averages



2016 COD Allocation

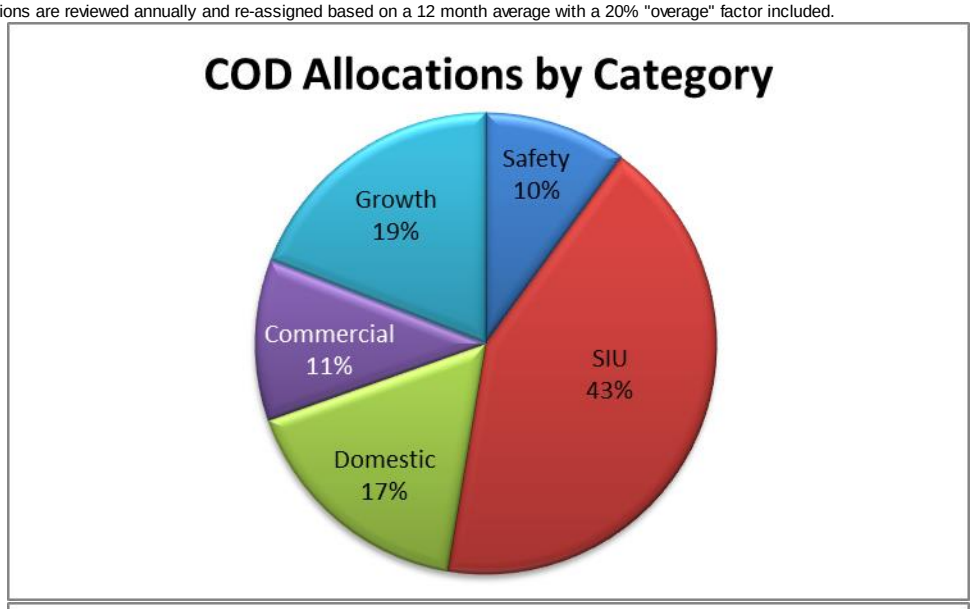
2012 US Census Bureau Population Estimate 36,842

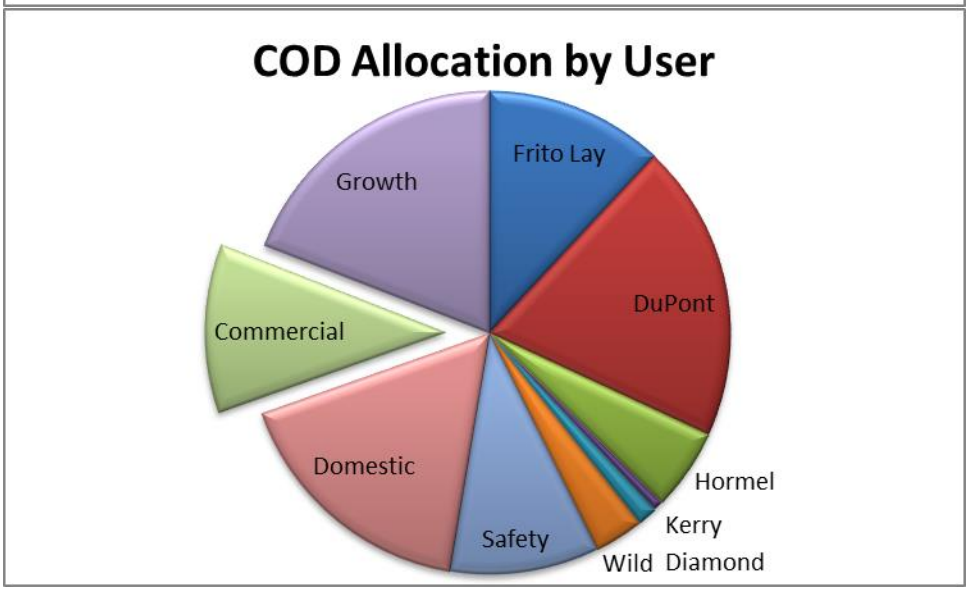
Plant Capacity Pounds	10% Safety Pounds	Pounds available	SIU Pounds	Pounds available	Domestic Pounds	Pounds Available	Commercial Pounds	Growth Pounds
75250	7525	67725	32100	35625	12753	22872	8504	14368

SIU	COD Pounds Allocated
Frito Lay	9000
DuPont	15000
Hormel	4100
Kerry	500
Diamond	1000
Wild	2500

NOTES:
The 10% safety factor is required by federal law.

Pounds allocated via permit to SIUs MUST be removed from availability even if waste of that strength is not discharged.
SIU allocations are reviewed annually and re-assigned based on a 12 month average with a 20% "overage" factor included.





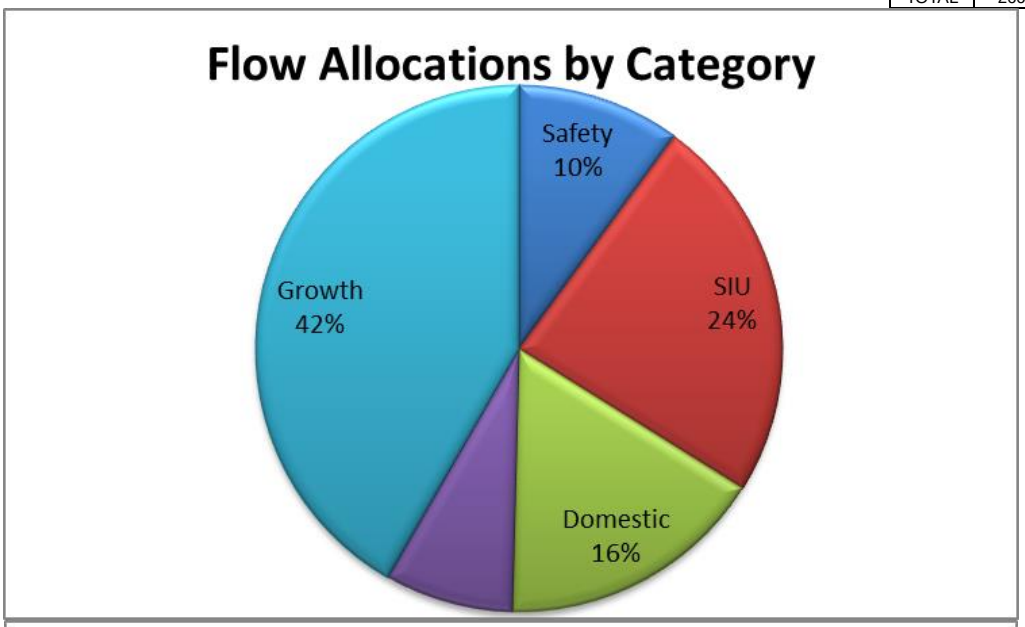
2016 Flow Allocations

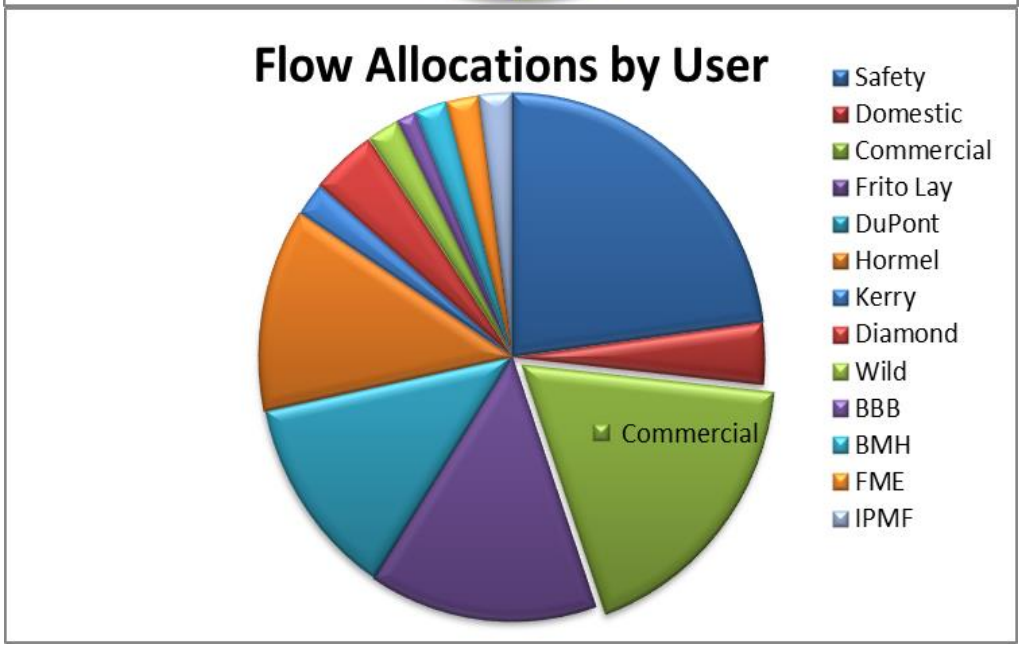
2012 US Census Bureau Population Estimate 36,842

Plant Capacity Gallons	10% Safety Gallons	Gallons available	SIU Gallons	Gallons available	Domestic Gallons	Gallons Available	Commercial Gallons	Growth Gallons
11000000	1100000	9900000	2660000	7240000	1810000	5430000	864000	4566000

NOTES:
The 10% safety factor is required by federal law.

SIU	Flow Gallons Allocated
Frito Lay	700000
DuPont	600000
Hormel	600000
Kerry	100000
Diamond	200000
Wild	100000
BBB	60000
BMH	100000
FME	100000
IPMF	100000
TOTAL	2660000





2016 TSS Allocation

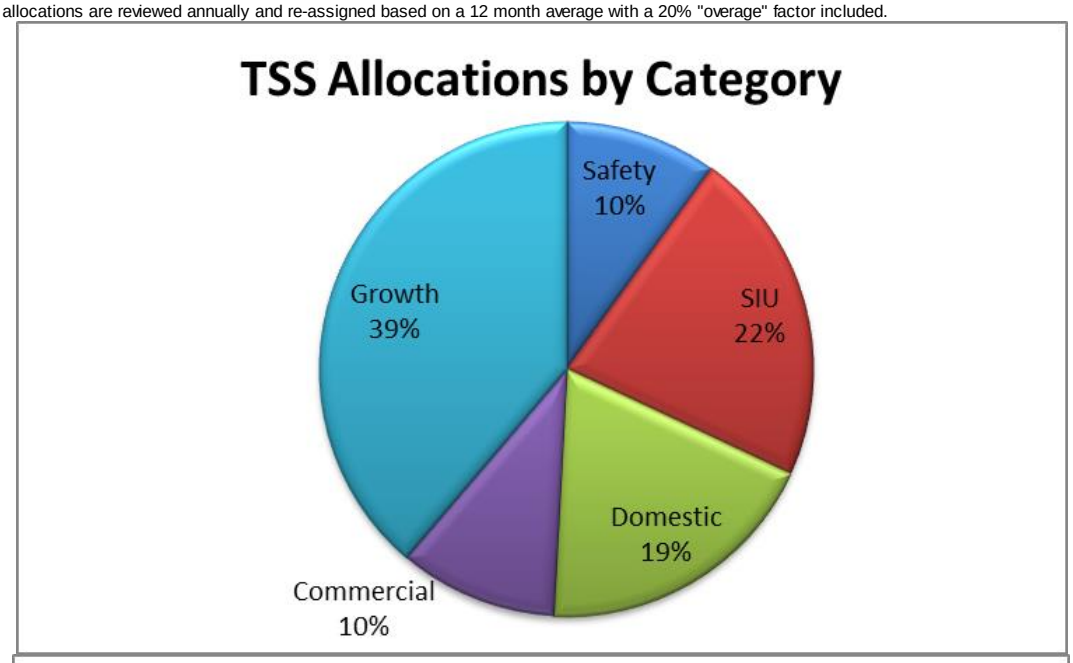
2012 US Census Bureau Population Estimate 36,842

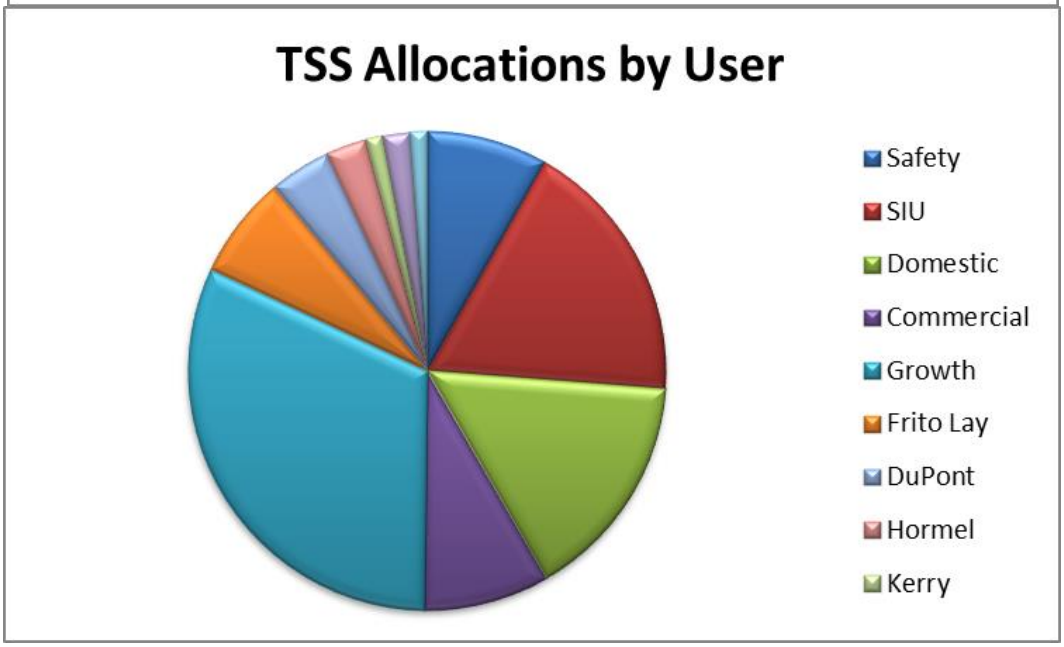
Plant Capacity Pounds	10% Safety Pounds	Pounds available	SIU Pounds	Pounds available	Domestic Pounds	Pounds Available	Commercial Pounds	Growth Pounds
35500	3550	31950	7800	24150	6703	17447	3681	13766

SIU	TSS Pounds Allocated
Frito Lay	3000
DuPont	1800
Hormel	1200
Kerry	500
Diamond	800
Wild	500
TOTAL	7800

NOTES:
The 10% safety factor is required by federal law.

Pounds allocated via permit to SIUs MUST be removed from availability even if waste of that strength is not discharged.
SIU allocations are reviewed annually and re-assigned based on a 12 month average with a 20% "overage" factor included.





Metals Contributions by Domestic Users

Bee

As mg/L	Cd mg/L	Cr mg/L	Cu mg/L	Pb mg/L	Ni mg/L	Ag mg/L	Zn mg/L
0.001	0.00026	0.0056	0.1	0.0018	0.0045	0.022	0.22

North

As mg/L	Cd mg/L	Cr mg/L	Cu mg/L	Pb mg/L	Ni mg/L	Ag mg/L	Zn mg/L
0.001	0.0059	0.022	0.22	0.0037	0.01	0.0027	0.48

Fredrick

As mg/L	Cd mg/L	Cr mg/L	Cu mg/L	Pb mg/L	Ni mg/L	Ag mg/L	Zn mg/L
0.001	0.00014	0.0029	0.071	0.0028	0.0039	0.00037	0.16

Turnberry

As mg/L	Cd mg/L	Cr mg/L	Cu mg/L	CN- mg/L	Pb mg/L	Ni mg/L	Ag mg/L	Zn mg/L
0.001	0.0029	0.0036	0.12	0.005	0.0015	0.0032	0.00037	0.22

Discussion of Results

Domestic Strength Changes

When looked at as a whole there are definite indications that domestic wastewater strength has increased over studies prior to 2013. Flow volume has decreased since the 2008 study for the North, Fredrick, and Bee locations. There is insufficient data from the Turnberry site to draw any definite conclusions, but it appears that flow and concentrations again reflect the changes in the other three sites from years prior to 2013. The increases in COD, TSS and Ammonia are statistically significant when compared to data collected in studies prior to 2013. The measurement and testing of COD was done using two different methods, to detect and reduce chloride interference.
Average flow rates per test area were significantly reduced as compared to studies before 2013. This further validates conclusions drawn in the 2013 study. The reduction in flow can be explained by the widespread installation of low flow plumbing fixtures and other water conservation measures by domestic users.

Directly correlating flow reductions with concentration increase was accomplished by converting concentration and flow to total pounds for each wastewater parameter, for all sampling areas. These amounts were then divided by the estimated total number of residents in the sampling areas, resulting in per person daily contributions in pounds. The total daily wastewater contribution per person in pounds has remained stable since 2008, with changes ranging from 1.4% to 0.6%.

COD analysis was done using two different methods. The USEPA Method 410.4 for COD analysis utilizes Mercuric sulfate, which eliminates interference from chloride ions. The City of Beloit Water Resources Lab uses Hach Method 8000 for process control testing of COD, and for preliminary concentration analysis for BOD analysis. The City of Beloit discontinued using Method 410.4 to eliminate mercury as a source of mercury loading in wastewater. The mercury free analysis was used in 2013, introducing an upward bias in the COD loadings reported for that study. A WDNR certified outside laboratory (Northern Lake Service, Inc.) ran the Method 410.4 analysis for COD. Both analytical methods were used for the 2016 study to discover the amount of bias introduced by using the mercury free method.

Commercial Contributions

There are currently 824 licensed commercial businesses in the City of Beloit. Approximately 10% of these can be classified as high strength commercial businesses, contributing an estimated 80-95% of all commercial loadings for flow, COD, TSS, and ammonia. These high strength commercial enterprises are billed at the same rate as domestic users, or low strength commercial users such as offices and retail locations. This may not be the most equitable way to share POTW operational costs using the current Sewer Rate Methodology.

Mass Balance of POTW

Domestic contributions to the mass balancing of the POTW were calculated using pounds per person for each day sampled in order to compensate for variable population densities in each domestic sampling area. Once these contributions were calculated, they were averaged, in order to normalize any variations. This amount was subtracted from the average daily loading at the Water Pollution Control Facility (WPCF) to provide a projected amount of loading.

The Significant Industrial Users (SIUs) were all required to sample and analyze for the studied parameters on the same day. This allowed a specific proportion of the total WPCF loadings on that day to be assigned to the SIUs alone.

The projected domestic loading and measured SIU loadings were subtracted from the total loading to give a projected Commercial loading amount. These loadings were compared to prior studies and published results from similar communities to verify their accuracy.

There was a significant imbalance noted in the projected ammonia contribution for commercial users. When the above technique was used to determine the commercial loading for ammonia, a negative number resulted for commercial contribution.

Ammonia loading from domestic sources was measured at levels that averaged below 0.1 pound per person daily. Significant variation could easily be introduced by small errors in sample collection, sample analysis, or unforeseen additional dumping of ammonia bearing cleaning products by users coincident with sampling. This in turn would be compounded by multiplication of the results by a factor of roughly 36,000.

Commercial wastewater does not remove ammonia from the waste stream, but it can be significantly lower than domestic concentration. The WPCF has only violated its discharge limit for Ammonia once since construction, and that violation was traced directly back to an overloading in the incoming waste. It was deemed acceptable to estimate commercial loading based on past results and data from similar commercial businesses in other communities to rectify the apparent imbalance in loadings.

Metals Analysis Results

All SIUs were sampled for metals and hazardous pollutants, as required in their discharge permits. Samples for the domestic sites were also analyzed for the same metals and pollutants, excluding cyanide (CN) and mercury (Hg). The mercury and arsenic samples were highly variable in concentration during the 2013 study, and further investigation of domestic sources is required before a single day grab can be considered a reliable representation for these pollutants.

The SIU results were as expected, with the only significant source of metals being the SIUs that are classified as Categorical Dischargers. These Categorical Dischargers still had wastewater that was well below their permitted discharge levels for all metals. All domestic sampling sites tested for metals had mercury levels that were significantly higher than expected.

Metals concentrations from the domestic sampling sites did not vary significantly from results found in prior years.

Conclusions

The 2016 Domestic Study indicates two areas where Sewer Rate Methodology may be called into question, mirroring results from the 2013 study. The increase in domestic wastewater concentration may require a revision in the domestic minimum rates at which the SIUs are billed. The SIUs are then surcharged for pounds of pollutants over the domestic minimums. It may also be in the best interest for equitable distribution of costs to investigate a separate billing classification for high strength commercial establishments such as restaurants and care facilities that engage in high volume food preparation.

Periodically, funding for a Sewer Rate Study is earmarked in the budget process. Currently, operating funds are sufficient to the needs of the POTW. Given that the overall per person pound contribution for domestic wastewater has not significantly changed, base sewer rates for domestic users may not need increasing. SIU billing is charged based on per pound contributions for each wastewater parameter (COD, TSS, and ammonia) above domestic concentrations. The charges billed monthly to the SIUs adjust automatically as their total number of pounds contributed varies. Because increased loading by the SIUs is compensated for by increased billing, the base rate for SIUs will most likely not need to increase.

The current standard in use for calculating contributions in domestic and low strength commercial wastewater is *500 mg/L of COD or 280 mg/L of BOD, 280 mg/L of TSS, 23 mg/L of ammonia and 8 mg/L of phosphorus.* The results of the 2013 domestic study indicated that these values may have needed to be increased to around *826 mg/L of COD, or 325 mg/L of BOD, 418 mg/L of TSS, and 40 mg/L of ammonia, with phosphorus staying at 8 mg/L.* The increases in COD concentrations seen in both 2013 and 2016 were partially a result of switching to the mercury free analysis method. The US EPA 410.4 results for the domestic sites were statistically near the 500 mg/L domestic waste strength. This strength was determined using the 410.4 method originally, so the increase could be from chloride interference from water softening, and not an increase in COD loadings. Results from the 2016 study do indicate that domestic waste strengths have either remained steady or slightly increased since the 2013 study. Further investigation is warranted before increasing the domestic minimum concentrations.

If further study indicates a new standard is necessary to maintain equitable billing, this new standard should be applied to determine which users need to be redefined as high strength commercial users. In addition, a high strength commercial surcharge may be recommended in order to equalize user fees between domestic, low strength, and high strength commercial wastewater users. The City of Madison and the Madison Metropolitan Sewer District have had success using a percentage surcharge for high strength commercial users. That program and others may lend insight to this issue.

Given the mixed zoning currently used in the City of Beloit, it is difficult to find discrete drainage areas for commercial, high strength commercial and purely domestic wastewater. This comingling of wastes makes analyzing the exact contributions of these very different waste streams impossible in most cases. In the interest of fairness, some additional study should be undertaken to determine more exact values for these three different classifications of wastewater.

The City of Beloit WPCF has experienced high spikes of mercury (Hg) in the past. Common practice in the wastewater industry is to look to dentists who remove mercury amalgam from fillings and use mercury amalgam to install new fillings. Extensive public education about mercury reduction has been undertaken in the past with dentists practicing in the City of Beloit, and these same dentists have taken steps to eliminate, reduce, or capture mercury in their day to day work.

Another common source of Hg in wastewater is from broken or mishandled instrumentation in hospitals and schools. This source of Hg was eliminated in the City of Beloit when Beloit College rebuilt their sciences building, as the hospital and high school had long since removed their mercury containing instruments.

A final expected source is automotive switches. Extensive education and inspection campaigns have been carried out by the Industrial Pretreatment Program staff to make garages and service stations in Beloit aware of the problem. Mercury switch and thermometer drop offs have been accepted from the general public in Beloit for approximately 5 years.

Due to irregular sample results in the 2013 study, Hg was not tested for in the domestic samples collected in 2016. The Hg found in domestic wastewater can arise from a variety of sources, including but not limited to medications, off gassing from existing fillings, seafood, chlorine, and certain types of fabric softener. With many highly varied and unexpected sources, complete elimination of the domestic input of mercury would be unlikely. This indicates a need for public education and minimization efforts aimed at the domestic users in the City of Beloit, in addition to existing mercury reduction and education programs. In order to determine if the domestic input of Hg into the wastewater system is significant, a comprehensive sampling and testing program would need to be launched. If non-industry sources of Hg spikes continue, the City may want to investigate launching such a program.

An additional item of note was the incidence of “rags” being caught by sampling equipment during the domestic sampling events. These items resembled baby wipes or adult “flushable” hygiene wipes in size and material. Wipes of this type have been specifically noted by POTW maintenance personnel as causing “ragging” of the North Street Lift Station pumps necessitating weekly cleaning of the pumps. These wipes are now thought to be originating with domestic users. The incidence of sampling equipment being fouled by these “rags” greatly increased during the 2016 study, with some locations having large amounts of fouling every 24 hours. This evidence suggests that at very least, the domestic user in Beloit must be targeted for additional educational materials about the hazards of these wipes being disposed of through the sanitary sewer.

APPENDIX 1

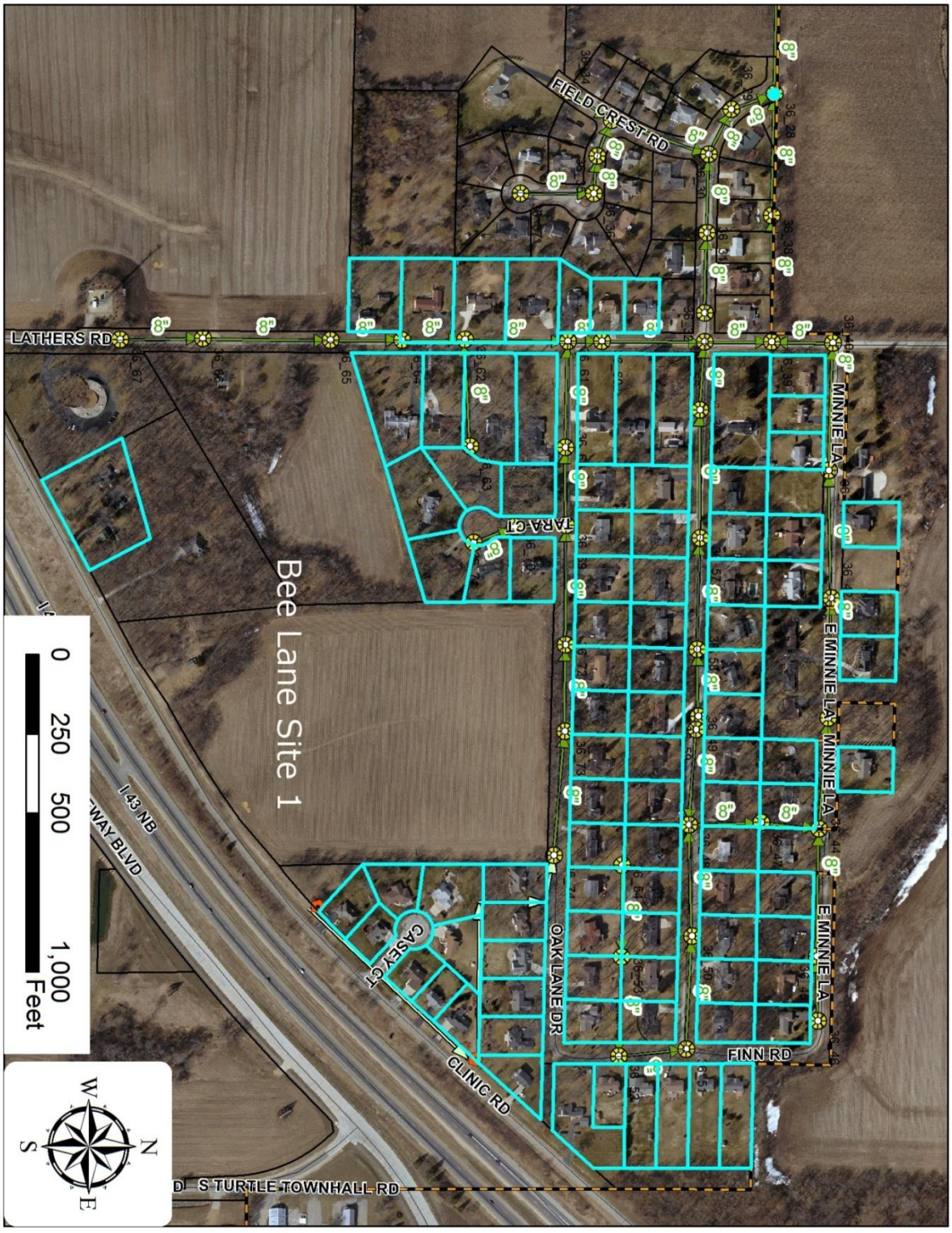
SITE #1

Domestic Study Raw Data

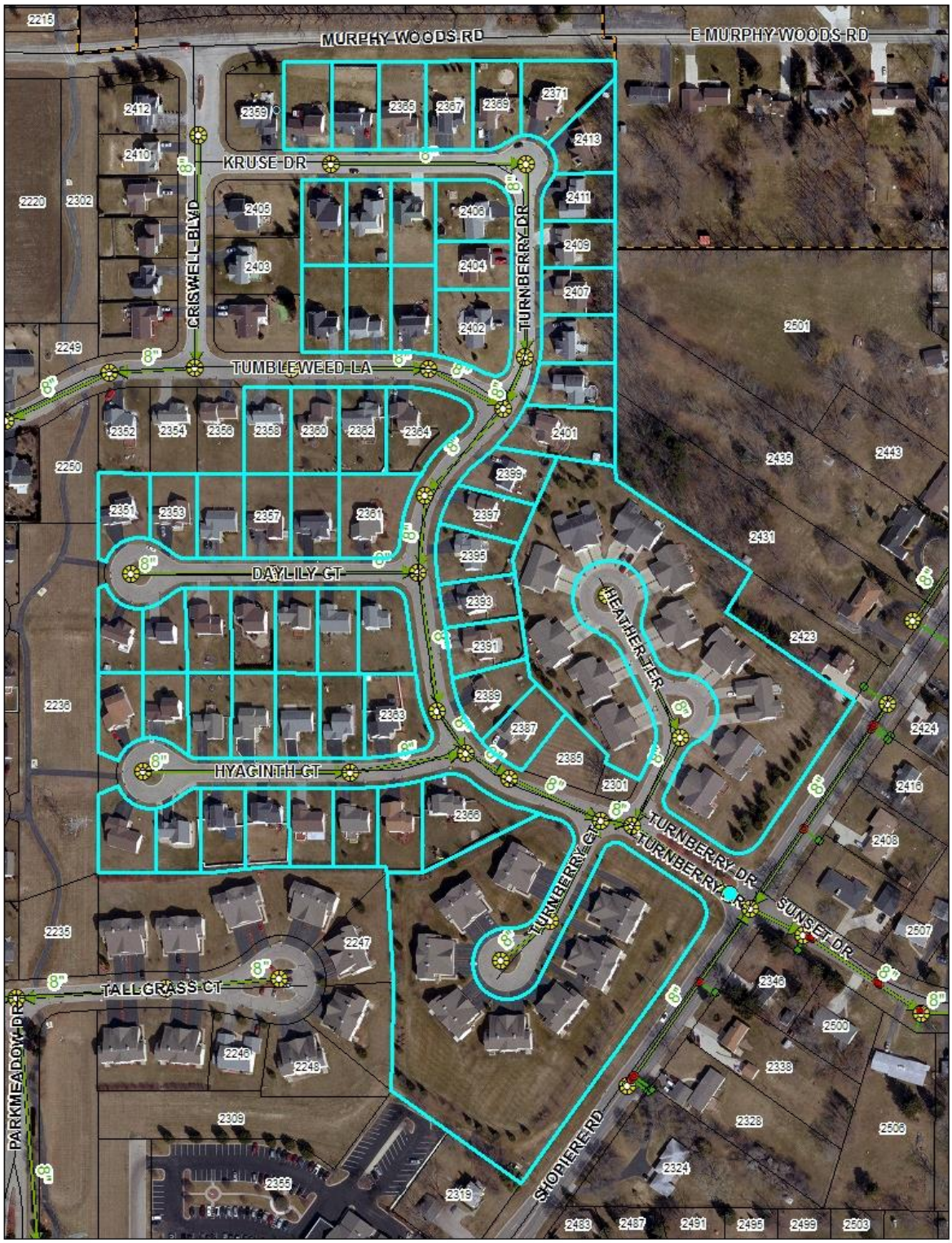
BEE LANE

Date	Flow/gals.	BOD/mgl	COD/mgl	TSS/mgl	NH3/mgl	pH	Phos/mgl	FOG/mgl
09/18/2008	24097		584	642	15	8.0		
09/17/2008	13623	152	400	282	15	8.2		
09/16/2008	22618	216	1432	196	18	8.0	3.0	16
Average	**20113**	**184**	**805**	**373**	**16**	**8**	**3**	**16**
07/21/2005	37102	139	372	268	14	7.9		
07/20/2005	41623	291	654	370	33	8.1	17.6	
07/19/2005	40320	255	617	240	35	8.3		31
Average	**39682**	**228**	**548**	**293**	**27**	**8**	**18**	**31**
06/26/2003	23283	158	393	195	26			
06/25/2003	25261	125	384	156	25	7.8	4.2	17
06/24/2003	22184	211	364	190	19	8.4		
Average	**23576**	**165**	**380**	**180**	**23**	**8**	**4**	**17**
07/02/2001		388	1027	544	23	7.4		
07/01/2001		221	427	80	21	7.3		
06/28/2001		229	470	280	19	7.7		
06/27/2001		214	479	490	29			
06/25/2001	68827	189	441	208	22	7.8		
06/24/2001		204	468	204		8.1		
06/23/2001		144	270	88	24	7.9		
06/22/2001	54069		90	312	28	8.3		
06/21/2001	12562	146	230	132	27	7.9		
06/20/2001		245	810	406	27	8.1		
06/19/2001	6978	183	408	188	18	7.8		
Average	**35609**	**216**	**465**	**267**	**24**	**8**		
1997	20143	444		592	22			
1997	17325	169		186	25.8			
1997	20100	201		390	26.5			
Total	569094.3	5317.3	12518.79	7751.879	504.6667	167.2667	49.6	128
Average	**28455**	**213**	**522**	**287**	**23**	**8.0**	**8.3**	**21**
Min	6978	125	90	80	14	7.3	3.0	16
Max	68827	444	1432	642	35	8.4	17.6	31
STD DEV	14994	73	277	147	6	0.3	7.2	8

MANHOLE 36-28
AGE OF SEWERS 1964
OF LATERALS CONTRIBUTING 108
DISCRIPTION: DEAD END OF BEE IN FIELD (NEXT TO CITY BOUNDRY LINE)


FIELD CREST RD
LATHERS RD
MINNIE LA
E MINNIE LA
TARA CT
Bee Lane Site 1
OAK LANE DR
CASEY CT
CLINIC RD
FINN RD
I 43 NB
WAY BLVD
S TURTLE TOWNHALL RD
0
250
500
1,000
Feet
W
N
S
E

Turnberry Court Sample Site 2



SITE #3

Domestic Study Raw Data

NORTH

Date	Flow/gals.	BOD/mgl	COD/mgl	TSS/mgl	NH3/mgl	pH	Phos/mgl	FOG/mgl
09/24/2008	9311	237	642	288		7.3		
09/23/2008	5994	353	886	266				
Average	**7653**	**295**	**764**	**277**		**7**		
05/04/2005	18690	149	344	58	17	8.0	4.3	
05/03/2005	18270	187	447	124	19	7.9	4.7	
05/02/2005	17745	232	401	254	19	7.2	3.4	
Average	**18235**	**189**	**397**	**145**	**18**	**8**	**4**	
07/02/2003	10500	312	746	532		7.3		
07/01/2003	10710	387	830	306	39	7.4		
06/30/2003	10080	423	1210	568		7.7	7.8	
Average	**10430**	**374**	**929**	**469**	**39**	**7**	**8**	
05/29/2001	11655	245	497	192	31	7.8		
05/28/2001	14385	283	554	156	36	7.7		
05/27/2001	12600	435	478	146	37	8.2		
05/26/2001	12600	265	507	184	27	7.8		
05/25/2001	10290	424	784	202	22	7.5		42
05/24/2001	24150			242				
05/23/2001		253	553	390	28			
05/22/2001		277	552	138	29			
Average	**14280**	**312**	**561**	**206**	**30**	**8**		**42**

Total	237578	5632	12082	5143	391	122	32	84
Average	**13199**	**296**	**636**	**257**	**28**	**7.6**	**5.4**	**42**
Min	5994	149	344	58	17	7.2	3.4	42
Max	24150	435	1210	568	39	8.2	7.8	42
STD DEV	4631	84	222	138	8	0.3	1.9	

MANHOLE 72-01
AGE OF SEWERS 1930s
OF LATERALS CONTRIBUTING 140
DISCRIPTION: On North Street middle of block between Division and Bittel


0 125 250 500
Feet
N
W
E
S
North Site 3
FREDERICK ST
BITTEL ST
ORTH ST
1400
2333

SITE #4

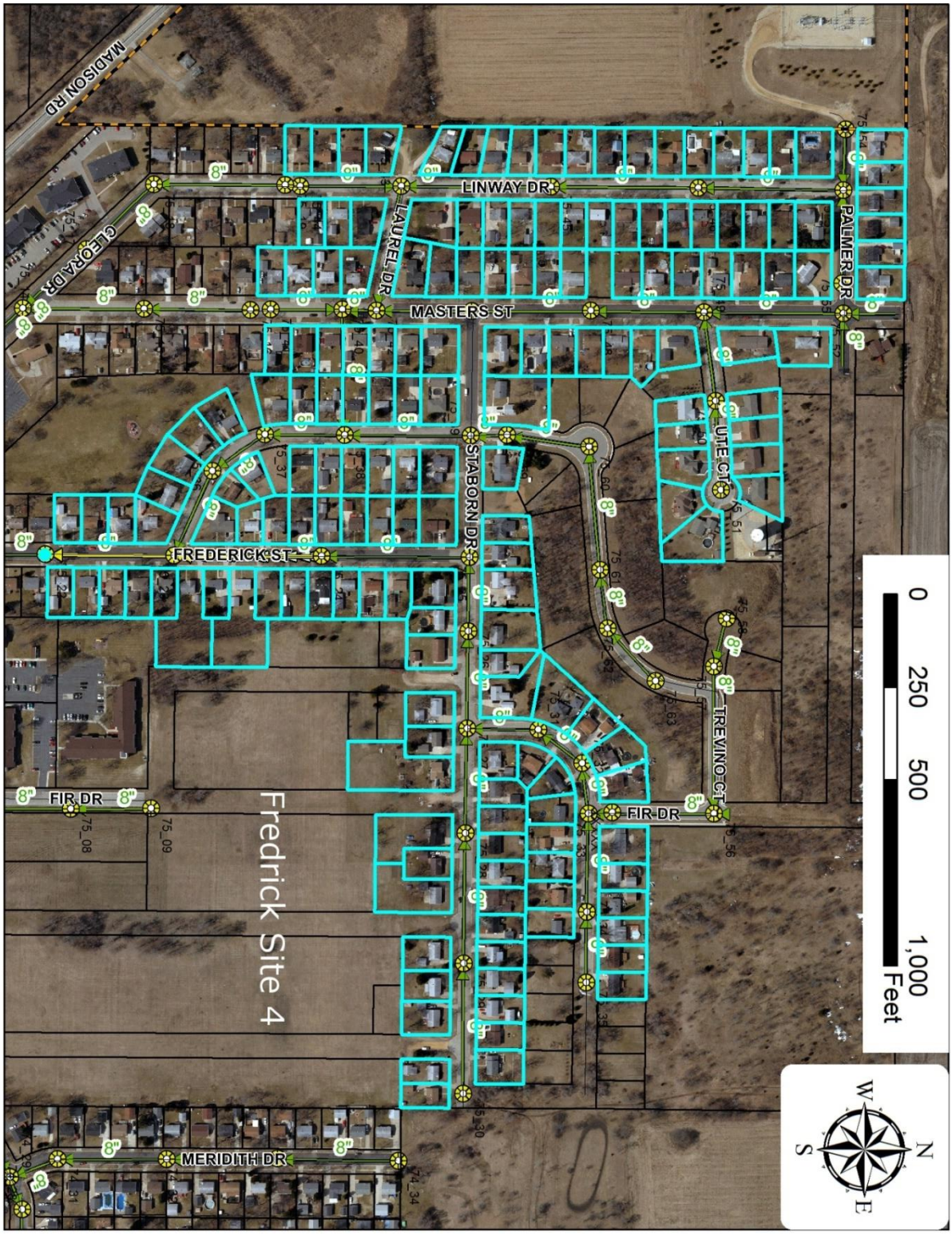
Domestic Study Raw Data

FREDRICK

Date	Flow/gals.	BOD/mgl	COD/mgl	TSS/mgl	NH3/mgl	pH	Phos/mgl	FOG/mgl
06/05/2008	52227	227	488	296	25	7.8	5.2	
06/04/2008	32666	247	571	286	38	7.5	6.4	
06/03/2008	32249	340	714	210	26	7.9	8.2	150
Average	**39047**	**271**	**591**	**264**	**30**	**8**	**7**	**150**
07/28/2005	20854	249	379	148	35	8.1		
07/27/2005	23965	278	492	318	31	8.0		
07/26/2005	23674	270	554	292	27	7.8	5.8	30
Average	**22831**	**266**	**475**	**253**	**31**	**8**	**6**	**30**
07/16/2003	29773	172	387	140	31	8.2		
07/15/2003	33606	265	486	318	31	7.6	6.3	
07/14/2003	33120	249	635	270	27	8.1		
Average	**32166**	**229**	**503**	**243**	**30**	**8**	**6**	
05/29/2001	38536	243	497	120	23	8.2		
05/28/2001	32816	311	558	252	28	8.0		
05/27/2001	35624	268	744	462	39	7.9		
05/26/2001	40248	267	651	388	26	8.2		
05/25/2001	30858	248	437	518	33	7.9		24
05/24/2001		366	628		26			
05/23/2001		287	493	230	31			
Average	**30858**	**300**	**519**	**374**	**30**	**8**		**24**

Total	585118.7	5353	10802	5381.333	597.3333	142.7667	50.6	408
Average	**32507**	**268**	**540**	**283**	**30**	**7.9**	**6.3**	**68**
Min	20854	172	379	120	23	7.5	5.2	24
Max	52227	366	744	518	39	8.2	8.2	150
STD DEV	7408	42	98	102	4	0.2	0.9	64

MANHOLE 75-22
AGE OF SEWERS 1959
OF LATERALS CONNECTED 185
DISCRIPTION: IN FRONT OF 1920 FREDRICK (FIRST MANHOLE OFF BURTON)


MADISON RD
GLEORA DR
LINWAY DR
LAUREL DR
PALMER DR
MASTERS ST
STABORN DR
UTE CT
FREDERICK ST
TREVINO CT
FIR DR
FIR DR
MERIDITH DR
Fredrick Site 4
0
250
500
1,000
Feet
N
E
S
W

CITY OF Beloit WISCONSIN

CHAPTER 4

Control Mechanisms

40 CFR 403.8 (f)(1)(iii) Control through Permit, order, or similar means, the contribution to the POTW by each Industrial User to ensure compliance with applicable Pretreatment Standards and Requirements. In the case of Industrial Users identified as significant under § 403.3(v), this control shall be achieved through individual permits or equivalent individual control mechanisms issued to each such User.

City of Beloit Public Works – Water Resources Division

September, 2018

Control Mechanisms

In NR 211.235, the WDNR references how the pretreatment program is to be administered. They require the City to have a "control mechanism" for each significant industrial user that is specific to their discharge. The control mechanism the City uses for this and Industrial Wastewater Discharge Permits for SIUs.

An industrial user (IU) is defined as a user engaged in the business of purchasing or selling goods or rendering services to the public. A Significant Industrial User (SIU) is determined by the amount and types of waste they discharge, all other industrial users are deemed to be commercial users. Commercial users are issued a General Business Permit. Each IU shall fill out a permit application as prescribed by the City. Once the application is completed, Environmental staff will review and determine if the user is a SIU or commercial business. If they are deemed to be a SIU, a classification will be determined. From the permit application, Environmental staff will determine if the user may need to submit a Spill Control Prevention Plan (SCPP). Permits will not be issued if the property or business owner owes any money to the City. The City reserves the right to refuse a permit to anyone for just cause.

SIU Permit Administration

The General Pretreatment Regulations require that all IUs discharging to a POTW with an approved pretreatment program be controlled through permit order, or similar means to ensure compliance with applicable pretreatment standards and requirements. The regulation at 40 CFR 403.8(f)(1)(iii)(A and B) clarified this requirement to specify that all SIUs must be issued an individual permit or equivalent individual control mechanism. Control mechanisms must be enforceable and contain, at a minimum, the following conditions:

- A statement of duration(not to exceed 5 years);
- A statement of non-transferability (unless outlined provisions are met);
- Effluent limits, including Best Management Practices (BMPs), that are based on applicable standards;
- Self-monitoring, sampling, reporting, notification, and record-keeping requirements;
- An identification of the pollutants to be monitored;
- The process for seeking a waiver for a pollutant neither present nor expected to be present in the discharge or a specific waived pollutant in the case of an individual control mechanism;
- Sampling location, sampling frequency, and sample type;
- A statement of applicable municipal, civil, and criminal penalties;
- A schedule of compliance (where appropriate);
- A requirement to control slug discharges, if determined by the POTW to be necessary;
- A statement of confidentiality

SIU permits are site specific and tailored to the unique circumstances of the SIU.

SIU New Source Discharges

Users requiring a discharge permit are identified in several ways including the following:

- **Plan Review Process** – When building a new facility, modifying an existing facility or acquiring a new sign, permit applications are submitted. Water Resources staff are included in the City of Beloit's plan review process.
- **Business Community Familiarity** – Users are identified by checking local newspapers, communication with the Downtown Beloit Association, and various social media avenues.
- **Business Owner Update E-Mail Group** – The City of Beloit has a Business Owner Update group on their e-mail server. When a member of the group has information on a new business, the group is e-mailed for follow-up. Environmental staff are members of this group.
- **Employee/Citizen Complaints** – The Environmental staff investigate complaints from citizens, neighbors, and employees reporting instances of improper discharges, chemical handling or disposal, and other nuisance situations. Responding to complaints helps find users.

Upon discovering a new IU that discharges to the WPCF, Environmental staff will send permit applications to the IU within 30 days. The new user will be required to submit the Permit Application within 30 days after notification/receiving the permit application. Based on the Permit Application responses, expected loadings, industrial processes, and chemicals used may lead to them being categorized as a SIU. After reviewing their flow numbers based on water usage, they may be determined to be a non-categorical SIU. Requirements for a new user moving into an existing or new facility or for an existing user proposing to build a new facility or significantly changing their process are:

- The user shall submit an application as prescribed by environmental staff. After review, environmental staff will determine if a user is a SIU, a commercial user, or a residential user.
- The City shall require the user to comply with any promulgated standard or local limits, whichever is more stringent.
- Environmental staff shall send by first class mail, or personally deliver to the permitted address, a letter explaining their duty to comply if the user has not responded to the original notification.
- The City will not allow a user to be permitted for discharge until an interim or final permit is issued.
- Only applicants who comply with Code of General Ordinances - Chapter 14 and owe no money to the City may be issued a permit.

SIU Classification

Once the SIUs are identified, environmental staff must classify them to determine whether pretreatment standards and requirements apply (40 CFR 403.3(v)(1). Users are required to provide pretreatment of wastes to comply with the most stringent Federal, State, or local pretreatment requirements applicable to their discharge. A permit is required prior to discharging wastes to the treatment system. Information needed for permit issuance includes the constituents and characteristics of the proposed wastewater as determined by a Wisconsin certified analytical laboratory. All sampling and analysis must be performed in accordance with NR 218 and NR 219. Industrial waste will be tested for pollutants of concern (COD, TSS, NH_3, P, and FOG); metals present; and if warranted, a toxic screen will be done.

Information regarding average daily and peak flow rates, including provisions for any seasonal variation, are required in the permit application. Environmental staff shall use the permit application as the user baseline monitoring report for all classifications. Permit staff shall work closely with the user to apply the appropriate combined stream formulas for SIUs whose processes involve more than one categorical standard or process type.

Users can be required to construct and maintain waste monitoring facilities including flow measurement and sampling. Environmental staff inspects the facilities of users to determine compliance with pretreatment and discharge limits. Within 14 days of review of the permit application or permit re-application, environmental staff will determine those standards which apply and classify the SIU into one of the following categories:

- Non-Significant Categorical Industrial User (NSCIU) under streamlining rule
- Middle Tier Categorical Industrial User (MTCIU)
- Non Categorical User

NSCIU is a CIU designated by the Control Authority as "non-significant" (as allowed by 40 CFR 403 and NR 211). To qualify as a NSCIU, the CIU must not discharge more than 100 gallons per day (gpd) of total categorical wastewater (excluding sanitary, noncontact cooling water, boiler blow down, or similar wastewater). The CIU must also:

- Have consistently complied with applicable pretreatment standards;
- Annually submit certification statement 40 CFR 403.12(q); and
- Never discharge any untreated concentrated wastewater.

MTCIU classification shall be designated if its discharge of categorical wastewater does not exceed the following:

- 0.01 percent of the design dry weather hydraulic capacity of the POTW or 5,000 gpd, whichever is less;
- 0.01 percent of the design dry weather organic treatment capacity of the POTW;
- 0.01 percent of the maximum allowable headworks loading (MAHL) for any pollutants for which approved local limits were developed by the POTW.

Non Categorical User classification shall be designated if the industrial user:

- Discharges an average 25,000 gpd or more of process wastewater; or
- Has the potential to discharge toxic pollutants or conventional pollutants in amounts that significantly violate this chapter or the user's permit; or
- Has significant impact, either alone or in combination with other contributing industries, on the wastewater treatment system efficiency, the quality of sludge, the system's effluent quality or air emission generated by the system; or
- Is not subject to categorical pretreatment standards; or
- Discharges a process waste stream which makes up 5% or more of the average dry weather hydraulic or organic capacity of the POTW; or
- Any other reason the POTW decides that a permit is warranted.

SIU Permit Contents

Permits must contain certain minimum criteria. These criteria are:

- General Information
  - Name of industry;
  - Contact personnel information;
  - Address of the SIU;
  - General provisions unique to the industry;
  - Signatory requirements by an authorized person.
- Signature page;
- Specific SIU Limits;
- Monitoring requirements;
- Sampling requirements, testing, and chain of custody forms;
- Monitoring facilities;
- General conditions including but not limited to;
  - SCPP, slug loads, and illegal/unpermitted discharges, duty to halt/mitigate;
  - Right to inspect;
  - Proper operation and maintenance of pretreatment equipment;
  - Discharge and bypass prohibitions;
  - Reporting and notification requirements;
  - Written sample procedures;
  - Pretreatment equipment , new and significant change approval;
  - Reporting significant changes to equipment or chemical use, new chemicals, and recordkeeping;
  - Reporting significant changes to processes other than flow by 20% or more;
  - No transferability;
  - Cost recovery;
  - Penalties, permit suspension, or revocation.
- All SIUs shall submit a Spill Control Prevention Plan (SCPP) unless the requirement is waived by the City. Environmental staff will require that once a SCPP has been approved, it is to be updated with each permit re-application or if significant changes have been made to the facility or processes. See Chapter 9 – Spill Control Prevention Plans.

SIU Permit Issuance

The City shall issue permits:

- Within 60 days after the classification is determined;
- Based on the classification as determined by the permit application, Federal regulations, compliance status, inspections, and historical data;
- To any NSCIU who has the potential to discharge toxic, flammable, or potentially dangerous pollutants to the POTW, endanger public health/safety or the environment;
- As long as the business owner and property owner are in good standing with the City.

SIU Permit Modification

Permit modifications may be made by the POTW as required to ensure compliance with regulations. Environmental staff will notify the SIUs in writing regarding any changes at least 30 days prior to the change taking effect.

Requests by SIUs to modify a permit, must be submitted in writing 30 days prior to the anticipated date of change. Modifications to permits can be requested for sampling waivers and/or when there will be significant changes in processes, operations, equipment, loadings, or other circumstances that would cause an alteration in the character of their wastewater discharge of greater than twenty percent (20%).

A 90 day notice must be given prior to any significant change made to the pretreatment facility. This change must also be submitted to the WDNR for approval. No pretreatment equipment changes shall proceed until written approval for the changes has been granted by both the State and City;

All data demonstrating a need for permit modification including supporting documentation, engineering drawings, production projections, loading calculations, etc. must be submitted with the permit modification request.

The City will review the request within 30 days of receipt. If the modification is granted, the City will amend the permit with the required language or limit changes. The new permit will be delivered to the SIU and a copy will be forwarded to the WDNR for their records.

SIU Annual Permit Review

At a minimum, the City shall review permit conditions and limits annually as part of the City's inspection and monitoring. This information will also be used to determine conventional pollutant pound limits for existing SIUs. The City will review 12-18 months of average discharge per SIU to determine the actual usage. A 20% safety factor will be added when determining each SIU's pollutant pound limit. New permits will be issued, if necessary, to reduce pounds of conventional pollutants not discharged by the SIU.

SIUs seeking increased limits must provide an engineering or process report to support why the increase is needed based on increased production, adding new processes, etc. The City reserves the right to deny increasing limits based on allocations. Environmental staff may require the SIU to install pretreatment equipment in order to meet permit conditions.

SIU Permit Renewal

Sixty (60) days prior to the expiration of an existing permit, the SIU is required to file a new completed permit application. Environmental staff will review the application, and request additional information if needed. Once a determination to renew the permit is made, a Treasurer's Check Sheet will be submitted to the City Treasurer. If the SIU is in good standing, a new permit will be issued. Permits will have a term of no less than two years, and no more than five years. A permit will remain in effect until a new permit is issued, or until the application for renewal is denied.

SIU Permit Transfer

The permit is non-transferable.

Commercial Permit Administration

All commercial users identified by the Water Resources Division shall be required to obtain a *business permit*. The definition of commercial user is as follows:

- A commercial or industrial entity that discharges wastewater to the City's sewerage system or that occupies property connected to the City's sewerage system, but that is not a Significant Industrial User.

The City is not required to issue a permit to residential properties or code compliant businesses operated out of a residential dwelling (i.e. home office). The City shall issue fixed cycle discharge permits to commercial users as defined in the General Code of Ordinances, Chapter 29. All applicants must be in good standing with the City.

New Commercial Source Discharges

Requirements for a new user moving into an existing or new facility or for an existing user proposing to build a new facility or significantly changing their process are:

- The user shall submit an application as prescribed by Environmental staff. After review, environmental staff will determine if the applicant is a General Business, Food/Beverage Service Business, or SCPP Business.
- The City shall require the user to comply with any promulgated standard or local limits, whichever is more stringent.
- Environmental staff shall send by first class mail, or personally deliver to the permitted address, a letter explaining their duty to comply if the user has not responded to the original notification.
- Only applicants who comply with Chapter 14 and owe no money to the City may be issued a permit.

Commercial Classification

New or existing commercial users will be classified as follows:

- Environmental staff will receive information from other City departments such as Code Enforcement, Fire, Community Development, City Assessor, and the City

Clerk's Office by means of building permits, transferring of property, community development projects, and new water utility accounts;
- The City Assessor's tax roll will be used to cross reference the current commercial users list;
- Environmental staff conducts rounds on an on-going basis.
- The City shall require users to complete an application form and return it within a specified timeframe. Failure to complete an application and obtain a permit are violations of the Code of General Ordinances, Chapter 29;
- The permit application shall serve as the commercial users' initial monitoring report for all classifications.
- There are no sub-classifications for commercial users at this time. The City reserves the right to place commercial users into sub-classifications in the future determined by activity, discharge volume, and wastewater characterization;
- A commercial user inventory shall be performed by Environmental staff semi-annually for permitting purposes.

Commercial Permit Contents

Permits contain information for the following criteria:
- Applicability
- Monitoring and Reporting Requirements
- General Conditions include but are not limited to:
  - Local limit and general discharge prohibitions;
  - Permit renewal requirements;
  - SCPP and special conditions, if required;
  - Enforcement or revocation for non-compliance.
- Certain commercial users may be required to submit a SCPP as part of the application process or per permit requirements.

Commercial Permit Issuance

Environmental staff will issue permits:
- Based on the classification as determined using the permit application, Federal and State regulations, compliance status, inspections, and historical data;
- To applicants in good standing with the City (owes no money to the City under Chapter 14);
- Within 60 days after receiving the completed and signed application.

Commercial Permit Modification

Permit modifications may be made at any time by environmental staff due to changes in regulations. General Business Permits cannot be modified at the request of the commercial user. If there is a change in process, discharge, violations, or potential hazard releases the user is required to reapply for a permit and may be reclassified as an SIU.

Commercial Permit Suspension and Revocation

Users who have any past due accounts with the City, or have a history of ordinance or permit violations are subject to enforcement including utility service disconnection and suspension of permit. Once the compliance issues are corrected, the user may request reinstatement of their permit in writing from the Environmental Coordinator. There shall be no business activity during the suspension period.

Users who have repeated violations of permit conditions or ordinances are subject to termination or nonrenewal of a permit. The City reserves the right to refuse to issue or to reissue a permit to any business or property owner who:

- Violates their permit or any City ordinances;
- Has any delinquent City accounts;
- Displays noncooperation with compliance of the pretreatment program.

Delinquent City accounts shall not subject a user to a Show Cause Hearing. All disputes for money owed to the City shall be reviewed by the City Treasurer and/or the Director of Water Resources for resolution. Revocation or nonrenewal may be appealed per the Code of General Ordinances, Chapter 29.

Commercial Permit Renewal

Sixty (60) days prior to the expiration of an existing permit, the commercial user is required to file a new completed permit application. Reclamation hauler permits and individual treatment agreements must be renewed on an annual basis. Environmental staff will review the application, and request additional information if needed. Once a determination to renew the permit is made, a Treasurer's Check Sheet will be submitted to the City Treasurer. If the commercial user is in good standing, a new permit will be issued. Permits will have a term of no less than two years, and no more than five years. A permit will remain in effect until a new permit is issued, or until the application for renewal is denied.

Commercial Permit Transfer

The permit is non-transferable.

Hauled Waste

The City will ensure that hauled industrial waste is adequately regulated and should take measures to ensure that haulers of septic tank or holding tank waste are not introducing industrial waste to the POTW. Hauled waste is accepted from City of Beloit residents or permitted IUs. Hauled waste from other POTWs may be accepted with pre-authorization. The following will be adhered to:

- All septage or reclamation haulers will be individually permitted by the City and are required to be certified by the WDNR. The permit is renewable each year and is nontransferable.
- The permit will comply with Federal, State, and local laws.

- The permit will include any billing information.
- A load ticket must accompany every load unless otherwise specified by the City. Information shall include: the type of waste, the origin of the waste, date collected, and pH before disposal.
- Commercial waste must have a waste profile sampling completed before initial acceptance. Thereafter, periodic analysis will be completed by the City's lab for conventional pollutants. The City may require, at the user's expense, to have outside laboratory tests done. Each commercial load will require an authorized signature from the waste originator prior to disposal.
- Haulers whose invoices are more than 30 days delinquent shall not be allowed to discharge waste until the invoice(s) are paid in full. Haulers more than 120 days late or not paid in full by December 31 each year will not be issued a permit for the coming year unless special approval is granted by the Environmental Coordinator and/or Director of Water Resources. Special approval will require a deposit by the driver or hauler from which payments will be drawn. Once the deposit is depleted, the hauler may not discharge until a new deposit has been made.
- Any falsification of data, discrepancy in documentation with other agencies, or other illegal action will cause the account to be locked and the hauler may have their permit revoked.
- Any waste hauled out of state requires preapproval under current guidelines.

Remediation

All remediation wastewater will require an agreement with the City prior to disposal. Laboratory analyses shall be completed and reviewed to determine the character of the waste. This will occur a minimum of once per year. At the user's expense, the lab analysis will require that all pollutants are checked against local limits and other pollutants of concern by an outside laboratory. At the user's expense, the City's laboratory will check conventional pollutants. Environmental staff may require more frequent analyses. All risks and constraints for disposal will be reviewed and placed in the agreement. The agreement will:

- Include dates, time, location, amounts to be discharged, charges, and any restrictions in which the disposal will take place;
- Be in compliance with all Federal, State, and local regulations and prohibitions;
- Include proper signatures;
- Contain language to terminate the agreement at any time.

Variances

Through NR 211.30(7)(c) the City if allowed to grant variances to specific discharge regulations. Variances will be granted by the Environmental Coordinator or their designee. Variances may impose conditions, exceptions, time limitations, durations, and/or limitations as authorized herein or by any applicable Federal, State, or local regulations.

Environmental staff will evaluate variances each permit cycle. The City retains the right to remove variances for any reason.

Variances may be revoked by the Environmental Coordinator or their designee for creating an adverse effect on the POTW or causing permit or ordinance violations. The grantee shall be notified by telephone or in person, and shall receive written notification within 5 days of the initial notice. The written notice may be served personally or by certified or registered mail.

Variances may also be terminated by the Environmental Coordinator or their designee if one or more of the conditions in the variance are not met.

Inter-Jurisdictional Agreement

Other communities connected to the City of Beloit sanitary sewer system must have a signed agreement for service. The agreement must include but is not limited to:

- Adoption in whole or duplication of the City of Beloit's Industrial Pretreatment Program and the Code of General Ordinances, Chapter 29;
- Permitting or allowing the City to permit all nonresidential users on the system;
- Granting legal authority to the City of Beloit Environmental staff to enforce all aspects of the Industrial Pretreatment Program and the Code of General Ordinances, Chapter 29;
- Requiring residents to keep all sewer accounts current and all fees paid;
- Having WDNR and EPA approval for an agreement signed by the appropriate legal authorities.

Permit Fees

Permit fees are reviewed every year as part of the City's budget process. Current fees are as follows:

CATEGORY	NONREFUNDABLE FEE	DESCRIPTION
Commercial	$100.00	General Business Permit
Commercial with SCPP	$200.00	General Business Permit – SCPP approval each permit issuance
SIU -Non-significant Non-significant Categorical Industrial User (NSCIU)	$1,050.00	No conventional waste allocations assigned or no calculated categorical limits
SIU – General Middle Tier Categorical Industrial User (MTCIU)	$2,100.00	No conventional waste allocation assigned or calculated categorical limits
SIU – Major Non-categorical User	$3,600.00	Specifically assigned limits with conventional waste allocations
SIU - SCPP	$210.00	All SIUs with each permit cycle

CITY OF Beloit WISCONSIN

CHAPTER 5

Monitoring, Sampling, & Reporting

NR211.22(6) Carry out all inspection, surveillance, and monitoring procedures necessary to determine, independent of information supplied by industrial users, whether industrial users are complying with applicable pretreatment standards and requirements.

City of Beloit Public Works – Water Resources Division

September, 2018

Monitoring, Sampling, & Reporting

The purpose of sampling, monitoring, and reporting is to verify the concentration of pollutants and flow volume contributed by the user. This information is used for billing, allocation, and compliance purposes.

Monitoring

The City shall monitor SIUs as specified in their permits. The City reserves the right to monitor or require the user to monitor and/or sample more frequently.

Monitoring Facility

Plans and specifications for monitoring facilities must be reviewed and approved by Environmental staff and the WDNR prior to construction. IUs will pay for construction and maintenance of all monitoring facilities and equipment.

Wastewater monitoring and flow measurement facilities shall be properly operated, kept clean, and maintained in good working order at all times. Failure to keep a monitoring facility in good working order does not alleviate an IU from the consequences of sample results outside of compliance. All flow measuring devices must be calibrated annually by June 1 with the calibration report included in the semi-annual report.

Self-Monitoring

SIUs are required by permit and in accordance with Federal, State, and local regulations to submit:

- Baseline monitoring reports;
- Monthly compliance reports;
- Semi-annual compliance reports;
- Accidental discharge reports.

Environmental staff may require SIUs to submit monitoring more frequently to verify compliance.

All results from reportable monitoring shall be included in self-monitoring reports.

City Monitoring

Environmental staff shall conduct regular sampling of industrial discharges. NR 211 requires the City to conduct at least one inspection and sampling visit annually of all SIUs. Samples taken by Environmental staff during these visits will be analyzed for all permit required pollutants including but not limited to phosphorus, ammonia, TSS, and COD. The City shall monitor each SIU for parameters as outlined in their permits. If testing indicates that specific metals not expected to be present are absent, the parameters will be exempt from City monitoring for the duration of the permit. The City reserves the right to conduct more frequent monitoring if deemed necessary.

Grease interceptors and catch basins will be installed as per Wisconsin Administrative Code SPS 382.34. These interceptors must have State of Wisconsin approval prior to installation as per SPS 382.20. IUs with a grease interceptor or catch basin shall maintain the trap as specified by the manufacturer. Grease interceptors and catch basins must be cleaned by the IU or pumped by a licensed septic hauler to ensure compliance with maintenance and discharge regulations (not more than 25% of the capacity of the interceptor). All solids from interceptors or catch basins shall be disposed of in a trash container or sanitary landfill. Improper disposal of waste from interceptors or catch basins will result in enforcement action. All users operating interceptors or catch basins are required to provide documentation of cleaning, including method (self or contractor), and disposal process for the waste. This documentation shall be kept at the facility and be readily available for inspection and verification. The cleaning shall include the removal of all materials in the interceptor. IUs operating grease interceptors will be inspected annually. Locations operating catch basins will be inspected at least once every 3 calendar years.

Violations of ordinances and permits, and/or failure to grant access or unreasonable delays in allowing Environmental staff access to the user's premises for inspection will lead to enforcement as stated in Chapter 7 - Enforcement Response Plan (ERP) of this manual.

Sampling Requirements

The type of samples being collected depends on the purpose of the sampling and the nature of the waste stream. The permit will specify the sampling method and/or type of sample(s). Samples may be collected as composite samples or as grab samples.

- **Grab Sample:** a singular discreet sample collected without any regard to the waste stream flow and over a time period not to exceed fifteen (15) minutes.
- **Composite Samples:** A sample composed of many small grab samples taken over a pre-determined time period. Wastewater samples are typically composited over a 24-hour period (± 1 hr.). Samples may be obtained as either time-proportional or flow- proportional.
    - **Time-proportional** composite samples are generally collected under conditions of constant or slightly fluctuating effluent flows. A timed composite shall be collected continuously with a constant sample volume and time interval between samples (i.e. 100 mL every 15 minutes);
    - **Flow-proportional** composite samples are collected when effluent flow, pollutant concentrations, or loading exhibit irregular changes. A flow proportionate composite shall be collected continuously at fixed flow intervals (i.e. 100 mL every 1000 gallons);
- **Split Samples** are proportioned into two or more containers from a single sample container. Adequate mixing is essential to assure "split samples" are nearly identical. Split samples are usually used so that two identical samples can be analyzed separately.
- **Duplicate Samples** are collected simultaneously from the same source under identical conditions into separate containers, usually as a quality control measure.

Except as indicated in a permit, a user must collect wastewater samples using the 24-hour flow-proportional composite sampling techniques. Time-proportional composite sampling or grab sampling may be authorized by Environmental staff for specific tests or special circumstances. SIUs are required to submit sampling protocols to Environmental staff for approval. Once approved, subsequent changes require approval by Environmental staff before implementation. Environmental staff reserves the right to verify sampling techniques with the individual(s) involved in the sampling and monitoring. Environmental staff shall determine sampling frequency and parameters for the SIUs based on the type of facility, discharge strength, flow, and type of pollutants. Environmental staff will determine the pollutants of concern (POC) for all users. Sampling shall never be less than required by Federal or State regulations. Environmental staff will conduct sampling of SIUs a minimum of once per year. The City reserves the right to not test for POCs that are not suspected to be present based on prior analysis.

Sample Locations

Sample locations are determined by Environmental staff. They are typically at the point nearest where the SIU discharges to the City's collection system and is safely and readily accessible. Sampling is performed by using permanent or portable samplers. Sampling and pretreatment facilities shall be built and maintained at the SIU's expense.

Sample Collection and Analysis

Accurate sample collection and analysis are essential to determine compliance status with applicable pretreatment regulations. All samples must be properly collected and preserved. It is important to use the correct container for sample collection and storage. Large samples should be divided for appropriate preservation as soon as possible. Proper sample preservation guidelines and sample holding times must be followed. Samples intended to satisfy reporting requirements must be collected during the period covered by the report. Each sample must be composited or grabbed during normal work intervals. Users may be required to collect samples in excess of permit requirements.

All reportable analyses must be performed at a State of Wisconsin certified laboratory under the provisions of NR 149, Laboratory Certification and Registration. All samples must be collected in compliance with NR 218 Method and Manner of Sampling and analyzed in compliance with NR 219 Analytical Test Methods and Procedures. Environmental staff must verify that all individual laboratory analyses for industrial self-monitoring samples, and samples collected by Environmental staff are performed according to State requirements.

Any violation of permit limits found due to sampling results must be reported to Environmental staff. Reporting must be done as soon as possible after discovery of the violation as per the Reporting Non-compliance section in this chapter for specific details. SIUs with less than monthly sampling intervals must re-sample and analyze within 30 days of a violation or a missed or invalid sample.

Sample Recordkeeping

Proper recordkeeping is essential to maintain the integrity of analytical results. Samples collected by Environmental staff for SIU analysis are recorded on the Industrial Sampling log sheet. The following information is recorded:

- Sample site name
- Signature of the sampler
- Type of sample (grab or composite)
- Date and time the sampling was started and when the sample was collected
- Flow meter reading when the sampling was started and when the sample was collected
- Flow rate when the sampling was started and when the sample was collected
- pH reading when the sampling was started and when the sample was collected
- Sampler temperature when the sampling was started and when the sample was collected
- Final sample volume when the sample was collected

If a sample is split with a SIU, it should be noted in their records and on the Industrial Sampling log sheet.

Chain of Custody

Chain of custody records provide a method to trace a sample from collection to analysis. It is essential these forms be properly completed to maintain defensible sampling results.

Sample custody is defined as possession of a sample. Samples may have several individuals whom are responsible for sample custody. A chain of custody record must contain the following:

- Name of the person collecting the sample;
- Date, time, and location where the sample was collected;
- Type of sample and preservation methods used;
- Date, time, and signature of the next person who takes control of the sample.

Reporting

Each permitted SIU must submit reports as required by permit, orders, or by request of Environmental staff. Any report submitted more than thirty (30) days late is defined as significant non-compliance and public notice will be published as required by the General Code of Ordinances Chapter 29.

Certification Statement

All reports submitted shall include the following certification statement as per NR 211.15 (10)(a):

> *I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.*

All reports and certification statements shall include a "wet ink" signature of an authorized representative as defined in NR 211.15(10)(b):

- A president, secretary, treasurer, vice-president in charge of a principal business function or any other person who performs similar policy or decision making functions for the corporation;
- The manager of one or more manufacturing facilities provided the manager is authorized to make decisions which govern the operation of the facility, make major capital investment recommendations, initiate and direct comprehensive measures to assure long-term compliance with environmental laws, can ensure the necessary systems are established to gather complete and accurate information for the report and where authority to sign documents has been delegated to the manager according to the corporation's procedures;
- A representative of a person described in the above bullet points if the representative has been authorized according to:
    - The person to whom authority is delegated is an individual or occupies a position with responsibility for:
        - The overall operation of the facility from which the discharge occurs, such as a plant manager; or
        - The overall environmental matters for the company, such as a corporate environmental officer; and
    - A written authorization is submitted to the control authority. If circumstances change so that an authorization is no longer accurate, the industrial user shall submit a new authorization before or along with the submission of any report signed by a new representative.

Monthly Self-Monitoring Reports

The high strength food SIUs are required to provide Environmental staff with monitoring reports on a monthly basis or as otherwise required by permit. Each SIU with pretreatment equipment shall provide data on the pollutants and flow as required by their permit. Monthly monitoring data required by permit is due by the 15th of the following month. If the 15th falls on a weekend or holiday, the monthly reports are due on the next business day.
The report shall include the following:

- A cover sheet with a "wet ink signature" and certification statement. The wet ink signature refers to the original copy that contains the actual signature (not a copy or scanned copy sent electronically);
- A monthly compliance and billing sheet. Categorical industries do not need to include this unless they discharged waste during the reporting period;
- State of Wisconsin certified outside lab reports with the QA/QC and Chain of Custody documents;
- Monthly sample collection log sheet;
- Monthly pH probe calibration log;
- Monthly pretreatment equipment efficiencies;
- Major changes in pretreatment facility operation;
- Major changes in process, production, schedules, chemicals;
- Statement of non-compliance and any corrective action taken.

Semi-Annual Reports

Semi-Annual reports are required as per NR 211.15(4)(a). Semi-Annual reports are due on July 31st (covers January through June) and January 31st (covers July through December). If the 31st of either month is on a weekend or holiday, the reports are due on the next business day. Semi-annual reports must contain the following:

- Cover sheet with wet signature, certification statement, significant activities, & parameters most difficult to control;
- A summary of pretreatment operating efficiencies;
- Flow meter calibration;
- A list with all other environmental permits held;
- A monthly summary of effluent analysis conducted including averages for flow and contaminant parameters;
- System upsets, if applicable;
- Pretreatment system bypasses/diverting, if applicable;
- Description and amount of hazardous or categorical material hauled offsite;
- A statement of all violations, periods of non-compliance, and any corrective action taken;
- SCPP log sheet for 6 months;
- Training records for SCPP, sampling, pretreatment process, and other pretreatment trainings;
- Categorical industrial users also need to include the following with their annual report:
  - TTO certification statements;
  - Categorical limits, if applicable.

Reporting Changes in Operation

The SIU must notify Environmental staff prior to significant changes in operations, discharge, or pretreatment activities at least 30 days prior to significant changes. New pretreatment equipment or changes in existing pretreatment equipment must be preapproved by Environmental staff and the WDNR in accordance with NR 108 at least 90 days prior to starting construction.

Reporting Illicit Spills or Slug Loads

All users must immediately report the discovery of any illicit, accidental, non-permitted, or slug load discharge to the POTW, waters of the state, or public or private property as specified in Chapter 9 Spill Control. Reporting will be done via telephone to Environmental staff at 608-364-2888. Unless waived by Environmental staff, this notice must be followed by a written statement within five (5) days. This report shall include:

- An explanation of circumstances surrounding the event;
- What steps were taken to remedy the situation;
- What steps are taken to prevent future occurrences.

Reporting Noncompliance

All permit violations must be reported within 24 hours of the user becoming aware of the violation. Within 5 days, a written report of the violation and the corrective action taken must be submitted. These violations can include but are not limited to:

- Pollutant limits violations (COD, TSS, NH_3, FOG, pH, etc.);
- Missed samples;
- Late reports.

Pretreatment Review and Follow Up

Environmental staff shall review all reports in a timely manner. Environmental staff shall notify the SIU as required by Chapter 7 – Enforcement Response Plan in cases of late or incorrect reports.

CITY OF Beloit WISCONSIN

CHAPTER 6

Inspections

NR211.235(3) Inspect and sample the effluent from each significant industrial user at least once per year.

City of Beloit Public Works – Water Resources Division

September, 2018

INSPECTIONS

All permitted users are subject to inspections. IUs utilizing grease interceptors and SIUs will be inspected at least once per year. Environmental staff have the right to perform inspections at any time. Types of inspections include:

- Routine scheduled inspections
- Investigative inspections prompted by accidental spills, slug loads, citizen complaints, referrals from other City departments, POTW issues, or noncompliance.

An inspection includes the investigation of production areas, raw material and waste storage areas, chemical storage facilities, and any area where wastewaters are generated. The inspections will also include a review of the SCPP and/or chemical hygiene plans.

INSPECTORS

Inspectors shall be trained and knowledgeable of regulations, ordinances, industrial processes, pretreatment technologies, waste stream sampling techniques, sampling protocol, hazmat, and industrial safety. The primary role of the inspector is to determine compliance with regulations. Inspectors must have the appropriate attire and equipment (PPE) to meet all OSHA and FDA regulations. This may include but is not limited to:

- Hardhats
- Safety glasses
- Ear protection
- Safety shoes
- Hairnets
- Other requirements as directed by the SIU (no jeans, no buttons, no jewelry, etc.)

Inspectors determine whether the facility is properly operated, maintained and capable of removing toxic pollutants in concentrations above permitted amounts prior to entering the sanitary sewer system. Inspectors have the authority to inspect and issue citations and orders to ensure compliance with applicable regulations. As a representative of the POTW, inspectors should maintain good communication between the City and SIUs. Inspectors have a legal and ethical duty to preserve the confidentiality of the SIUs proprietary information.

TYPES OF INSPECTIONS

Inspections are required to determine if SIUs are compliant with applicable pretreatment standards. They provide independent verification of the information that SIUs are required to provide in self-monitoring reports. All permitted users are subject to facility inspections.

Routine inspections are scheduled in advance. These inspections are typically performed on an annual basis. The main purpose for SIU annual inspections is to verify and expand upon information provided by the SIU contacts. Routine inspections of commercial users are

typically done to ensure that pretreatment equipment is being maintained and operated properly.

Non-routine inspections are carried out because an event has occurred that requires additional investigation. These inspections are usually triggered by a violation, accidental spill, or a complaint from an outside source. A non-routine inspection may be performed by appointment. An accidental spill, ordinance violation, or sanitary sewer blockage may trigger an immediate inspection of a facility. Any ordinance or permit violations found during an inspection can result in enforcement actions.

Inspection Preparation

Prior to conducting an inspection, environmental staff will:

- Review past inspection reports on the facility;
- Acquire appropriate attire and proper PPE to meet all OSHA and FDA regulations for the facility;
- Review the facility permit application and permit;
- Review monitoring records;
- Review waste stream schematics;
- Review any current correspondence;
- Review SCPP and any spills or releases from the past two years;
- Review sampling and analysis procedures.

Inspection Requirements

Inspectors may schedule inspections. During the inspection inspectors may:

- Become familiar with plant processes that generate waste and any pretreatment facilities that are present;
- Collect information to evaluate compliance;
- Identify changes in processes or operations that affect the character of industrial discharges;
- Maintain a cooperative, as well as a regulatory, presence with the industrial users;
- Discuss problems and/or concerns about the pretreatment program by either environmental staff or the SIU;
- Update the pretreatment programs information on regulated users;
- Verify submitted processes or equipment information.

SIU Inspections

Inspections include:

- Documenting the date and time the inspection is conducted;
- Reviewing the inspection checklist with the SIU contact person during the inspection;
- Completing all information on the Industrial Inspection Report form;

- Verifying the facility name, site address, and mailing address;
- Confirming general background information such as shifts, number of employees, and days of operation;
- Reviewing schematics of water flow through the facility, the locations of all wastewater discharge lines and significant plant features;
- Reviewing a description and process flow diagram for each major product line and process within the plant, specifically processes that are subject to federal categorical pretreatment standards;
- Reviewing the list of pollutants of interest. The list should be divided into two (2) categories:
    - Pollutants that are discharged;
    - Pollutants that are not discharged, but have a potential to enter wastewater;
- Identifying sampling locations;
- Verifying sampler operation and refrigerator temperature(s);
- Reviewing the training records of staff who perform sampling and preservation tasks;
- Surveying the proximity of chemical storage to floor drains and reviewing the routing of drains;
- Reviewing the SCPP;
- Reviewing and surveying waste handling, storage, and disposal;
- Discussing any proposed or recent changes to the facility that affect wastewater characteristics;
- Reviewing operational records and procedures for pretreatment equipment;
- Reviewing pollution prevention activities.

Inspectors will complete a thorough report and submit it to the SIU for review.

Commercial Inspections

Commercial users that utilize pretreatment equipment (grease interceptors, catch basins, oil/sand interceptors, etc.) or are required to have SCPPs shall be subject to routine inspections. Commercial users will also be subject to investigative inspections prompted by accidental spills, slug loads, citizen complaints, referrals from other City departments, POTW issues, or non-compliance with ordinances or permits.

Inspectors shall use the approved form for use during commercial inspections. A copy of this form will be provided to the commercial user's contact person once an inspection is complete. Inspectors will evaluate the commercial user based on the applicable sections of the inspection form. Findings and evidence of non-compliance will be thoroughly documented on the inspection form. All findings and results will be discussed with the commercial user's representative.

CITY OF Beloit WISCONSIN

CHAPTER 7

Enforcement Response Plan

This Plan provides guidance in selecting initial and follow-up enforcement action, indicates the staff responsible for these actions, and specifies timeframes in which to make them. The program reflects the City's primary responsibility to enforce all applicable pretreatment requirements and standards as detailed in 40 CFR 403.8(f)(1) and (f)(2).

City of Beloit Public Works – Water Resources Division

September, 2018

Enforcement Response Plan

This Plan is based on EPA's Guidance for Developing Control Authority Enforcement Response Plan, modified to meet the City of Beloit's needs. This plan is an enforcement response plan for responding to violations of Federal, State, and local pretreatment regulations. This plan outlines procedures to be followed by the City's Environmental staff to identify, document, and respond to violations as required in 40 CFR 403.8.

Purpose

A comprehensive and effective enforcement response plan:

- Reflects the Environmental staff's responsibility and authority to enforce applicable pretreatment standards consistent with its WPDES permit and the Code of General Ordinances - Chapter 29 (herein referred to as Chapter 29);
- Describes how Environmental staff will investigate noncompliance;
- Describes initial and escalated enforcement actions that are taken in response to violations and the timeframes to initiate and follow up on these actions;
- Provides for inspections of Significant Industrial Users and Commercial Users;
- Provides for the reporting of compliance data and investigations allowing the information to be used effectively as evidence in administrative and judicial enforcement actions;
- Describes a system for tracking compliance status, due dates, and pending enforcement action;
- Establishes procedures for the enforcement responses required for violations of the Code of General Ordinances and user permits.

Benefits

This Enforcement Response Plan (ERP) assists the City in enforcing its pretreatment program. This ERP strengthens coordination among City staff by clearly establishing the enforcement responsibility of each person. This ERP helps individuals clearly understand their role. This ERP enhances the City's reputation as a responsible public agent. This ERP is designed to eliminate capricious and arbitrary enforcement. This ERP provides standard procedures, ensuring enforcement will be consistent. This will significantly reduce the possibility that enforcement could be perceived as subjective.

Elements

There are five basic elements of this enforcement response plan:

- Identifying competent personnel to carry out the ERP;
- Reviewing the commercial and industrial user inventory;
- Maintaining compliance monitoring procedures;
- Creating procedures to monitor and evaluate compliance data;
- Assessing Chapter 29 for consistency with the ERP.

City Personnel to Carry Out the ERP

This ERP establishes City staff responsibilities for taking enforcement actions. The Environmental Coordinator is responsible for the developmental aspects of the ERP and ensuring the ERP is followed. Environmental staff are qualified and experienced personnel familiar with local water pollution enforcement policies and will work together to carry out the program. This ERP provides, however that some decisions, such as whether to pursue civil litigation or to terminate service, must involve City Management.

This ERP requires the issuance of NOV's, Municipal Citations, and Administrative Orders for all permit and/or code violations. Environmental staff, the Director of Water Resources or the Public Works Director may issue enforcement action as provided in this ERP.

If enforcement action is taken that differs from the Enforcement Response Plan, Environmental staff must complete a "Deviation from Approved Enforcement" form which requires the signatures of two (2) City employees:

- An employee of the Environmental staff; and
- The Public Works Director. In the absence of the Public Works Director, the Director of Water Resources or the City Manager may sign.

A copy of this document must be kept on file for periodic audits conducted by the WDNR and the EPA.

Review of Commercial and Industrial Inventory

The City's Water Resources Division will conduct annual commercial and industrial waste surveys to identify non-residential users with activities, processes, or chemical uses that could have adverse effects on the POTW.

One or more of the following techniques will be used to keep the user inventory up to date:

- Periodic review of local newspapers and internet searches;
- Building and plumbing permits;
- Community development plans;
- Notice from the City Clerk-Treasurer or Utility Billing Office of changes of ownership of commercial or industrial properties (Business Owner Update e-mail group);
- Cross reference with City' Assessor's office;
- Cross reference with Fire Department Inspections;
- Other methods as necessary.

Permits will be issued as required in accordance with Chapter 4 – Control Mechanisms of this Pretreatment Manual. Permits for commercial and industrial users are valid for five (5) years.

Compliance Monitoring Procedures

Environmental staff will follow the compliance monitoring activities as outlined in Chapter 5 – Monitoring, Sampling & Reporting and Chapter 6 – Inspections of this Pretreatment

Manual. The City's compliance monitoring activities must be in compliance with 40 CFR 136. Compliance data is collected in two ways:

- Self-monitoring by the user with reported findings submitted to Environmental staff within thirty (30) days of receiving the results or reports; and
- Inspection and direct sampling by Environmental staff.

Basic procedures to be followed after receiving compliance data are to:

- Screen data within five working days;
- Enter data for tracking and analysis;
- Compare data to local, categorical, and special discharge limits;
- Alert Environmental Coordinator for proper enforcement measures;
- Initiate enforcement actions if necessary.

Enforcement Authority Under the Code of General Ordinances – Chapter 29

The City's ability to take enforcement action is granted by the State of Wisconsin through statute NR211. This legal authority allows the City satisfy pretreatment program standards established by the WDNR and the US EPA.

The City's Pretreatment Program is supported by the Code of General Ordinances – Chapter 29 (herein referred to as Chapter 29). Chapter 29 establishes both specific and comprehensive legal authorities.

The City enforces Chapter 29 on a strict liability basis. Strict liability requires every instance of noncompliance (regardless of fault, negligence, or intent) to be treated as a violation of Chapter 29. Each violation is assigned an asset forfeiture penalty in the Code of General Ordinances – Chapter 25 (herein referred to as Chapter 25).

Chapter 29 does not include obstacles that limit the use of enforcement responses. The authority to issue an asset forfeiture penalty is assigned via ordinance in the Code of General Ordinances - Chapter 25.04(4)(d). Civil or criminal litigation is pursued at the discretion of the City Attorney or the Rock County District Attorney.

The Public Works Director has overall control of the Pretreatment Program. The Director of Water Resources and the Environmental Coordinator have been designated by the Public Works Director to act in the absence of the Public Works Director, and in critical emergency situations to suspend wastewater services to protect life, community, and property.

Reporting Significant Noncompliance (SNC)

Any violation of pretreatment requirements is an instance of noncompliance. Major violations include exceeding limits frequently and/or by specific amounts; impeding the determination of compliance status; or having caused or having the potential to cause adverse environmental effects, endangering public safety, or interfering with the POTW. Frequent violations will place a user in "Significant Noncompliance". The US EPA has set

standards to evaluate users for significant non-compliance in 40 CFR 403.8(f)(2)(viii) as follows.

> *Comply with the public participation requirements of 40 CFR part 25 in the enforcement of National Pretreatment Standards. These procedures shall include provision for at least annual public notification in a newspaper(s) of general circulation that provides meaningful public notice within the jurisdiction(s) served by the POTW of Industrial Users which, at any time during the previous 12 months, were in significant noncompliance with applicable Pretreatment requirements. For the purposes of this provision, a Significant Industrial User (or any Industrial User which violates paragraphs (f)(2)(viii)(C), (D), or (H) of this section) is in significant noncompliance if its violation meets one or more of the following criteria:*
>
> ***(A)** Chronic violations of wastewater Discharge limits, defined here as those in which 66 percent or more of all of the measurements taken for the same pollutant parameter during a 6-month period exceed (by any magnitude) a numeric Pretreatment Standard or Requirement, including instantaneous limits, as defined by 40 CFR 403.3(l);*
>
> ***(B)** Technical Review Criteria (TRC) violations, defined here as those in which 33 percent or more of all of the measurements taken for the same pollutant parameter during a 6-month period equal or exceed the product of the numeric Pretreatment Standard or Requirement including instantaneous limits, as defined by 40 CFR 403.3(l) multiplied by the applicable TRC (TRC = 1.4 for BOD, TSS, fats, oil, and grease, and 1.2 for all other pollutants except pH);*
>
> ***(C)** Any other violation of a Pretreatment Standard or Requirement as defined by 40 CFR 403.3(l) (daily maximum, long-term average, instantaneous limit, or narrative Standard) that the POTW determines has caused, alone or in combination with other Discharges, Interference or Pass Through (including endangering the health of POTW personnel or the general public);*
>
> ***(D)** Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or to the environment or has resulted in the POTW's exercise of its emergency authority under paragraph (f)(1)(vi)(B) of this section to halt or prevent such a discharge;*
>
> ***(E)** Failure to meet, within 90 days after the schedule date, a compliance schedule milestone contained in a local control mechanism or enforcement order for starting construction, completing construction, or attaining final compliance;*
>
> ***(F)** Failure to provide, within 45 days after the due date, required reports such as baseline monitoring reports, 90-day compliance reports, periodic self-monitoring reports, and reports on compliance with compliance schedules;*
>
> ***(G)** Failure to accurately report noncompliance;*
>
> ***(H)** Any other violation or group of violations, which may include a violation of Best Management Practices, which the POTW determines will adversely affect the operation or implementation of the local Pretreatment program.*

Enforcement Responses

When a user has violated Chapter 29 or their permit, Environmental staff will use this chapter to determine the appropriate enforcement response. The response will be proportionate to

the violation's severity, promote compliance in a timely manner, and be authorized under State law and the City's ordinances.

State law and City ordinances provide six different types of enforcement responses. The six types of enforcement are:

- Notice of Violation (NOV)
- Citations with Forfeitures
- Administrative Orders
- Civil Litigation
- Criminal Prosecution
- Termination or Suspension of Service

All enforcement shall be sent via USPS letter mail or delivered to the user. If the commercial business has a corporate office in another state, enforcement will be mailed to the registered agent in Wisconsin. For local business owners, enforcement may be hand delivered to the premises.

Documentation on enforcement actions will be kept by the Environmental staff. Environmental staff will include all correspondence or other documentation relating to violations and enforcement in its reports to the WDNR and EPA.

Notice of Violations

A Notice of Violation (NOV) is a communication between the City and a user that notifies the user of a violation. A NOV may be issued informally by a phone call, email, or in-person for an isolated, non-significant violation causing no harm. In all other incidents a written NOV will be issued. A NOV may be issued either with or without a citation.

The City may issue a NOV without a citation where the City is trying to resolve a user's noncompliance without penalty. NOVs, without citations, may be appropriate for minor or infrequent violations.

If a violation is not resolved, or if circumstances require a more stringent approach, the City may issue a NOV with a citation.

A NOV may require corrective actions including, but not limited to an explanation of why the violation occurred and proposed corrective action. The user must acknowledge all violations in all reports that include the time period in which the violation occurred.

Citations with Forfeitures

The City may be required to issue a citation with forfeitures if a user violates their permit, Chapter 29, or an order issued in accordance with Chapter 29. The City will issue citations with forfeitures if a violation is not resolved after the issuance of a NOV, or the violation is severe enough to require it. The Enforcement Guidance Chart set out later in this chapter provides guidance on enforcement responses and the escalation of enforcement.

Chapter 25 authorizes the Environmental Coordinator, Environmental Specialist, Environmental Technician, Director of Water Resources, and Public Works Director to issue

citations with forfeitures. Citations will be issued in the form of Uniform Municipal Citations. Forfeiture amounts are approved by the City Council and stated in Chapter 25. Subsequent violations for the same offense require escalated enforcement as laid out in this ERP and Chapter 25.

Each citation must include a date, time, and place for a court appearance. A user may plead guilty and pay the forfeiture or may challenge the citation in court as provided by State law.

Administrative Orders

Administrative Orders (AO) are enforcement documents that direct the user to undertake or to cease specific activities. The City will issue an AO if a user fails or refuses to resolve violations, or if compliance requires construction, repairs, or process changes.

AOs may or may not be negotiated with the user. AOs may incorporate compliance schedules, administrative penalties, and termination of service orders. Common elements of the AO include:

- Title and type of order being issued;
- Legal authority including ordinance or state law;
- Findings of noncompliance. All violations should be carefully described, including dates, specific permit or ordinance provision violated or any damages attributable to the violation;
- Ordered activity. All orders shall clearly set out all ordered activity including installation of treatment technology, additional monitoring, appearance at a Show Cause hearing, etc.;
- Milestone dates for corrective action. All progress or "milestone" dates must be clearly established, including due dates for any required written reports;
- Standard clauses. Clauses provide that:
    - Compliance with the terms and conditions of the AO will not be construed to relieve the user of its obligation to comply with Federal, State, or local law;
    - Violation of the AO may subject the user to all penalties available under Chapter 29;
    - No provision of the order will be construed to limit the City's authority to issue supplementary or additional orders or take other action deemed necessary to implement its pretreatment program;
    - The provisions of the order shall be binding upon the user, its officers, directors, agents, and employees.

An example of the contents that may be included in an AO is included in the Chapter 7 Appendices . A user may appeal the issuance of an administrative order as provided by City ordinance and State law.

There are four common types of administrative orders. They are:

- Compliance Orders;
- Consent Orders;
- Cease and Desist Orders;

- Show Cause Orders.

Compliance Orders

A Compliance Order is an order issued by Environmental staff, directing a user to cease violating, and to comply with the order by a specified date. A Compliance Order must identify and describe the violation, and the action required to correct the violation. Compliance Orders are issued unilaterally by the City and the terms need not be discussed with the user in advance.

Consent Orders

A Consent Order is an administrative order issued by Environmental staff and can be issued if a user agrees to correct noncompliance. A Consent Order is neither an admission of guilt, nor an acceptance of liability. Environmental staff must make sure a Consent Order prohibits future violations and provides for corrective action on the part of the user.

A Consent Order incorporates a Compliance Agreement and contains the following additional elements:

- A Compliance Schedule;
- Stipulated fines, if any;
- A plan for remediating the violation;
- Signatures of the City and a representative of the user.

Failure on the part of the user to fully comply with the conditions of a Consent Order will result in escalated enforcement which may include a Show Cause Hearing or judicial enforcement.

Cease and Desist Orders

The City may issue a Cease and Desist Order when a user has violated, or continues to violate, Chapter 29, any order issued under Chapter 29, or their permit, or if their discharge causes pass through or interference with the POTW. A Cease and Desist Order directs a non-compliant user to cease all violations; to immediately comply with all applicable requirements; and to take the appropriate remedial or preventative action to address a continuing or threatened violation.

Failure on the part of the user to fully comply with the conditions of a Cease and Desist Order will result in escalated enforcement which may include a Show Cause Hearing or judicial enforcement.

In an emergency situation, the City can suspend or terminate sewer service to a user as allowed by Chapter 29.

Show Cause Orders

The City may issue a Show Cause Order to any user who violates or continues to violate their permit, Chapter 29, or an order issued under Chapter 29. A Show Cause Order

directs the user to appear before the City, explain their non-compliance, and show cause why sewer service should not be discontinued. A Show Cause Order is typically only issued after NOVs, citations, and Compliance Orders have failed to resolve non-compliance.

A Show Cause Order must describe the user's non-compliance, the proposed enforcement action, and the time and place for the user to file a written response. If the user does not dispute the Show Cause Order and submits a written response addressing each violation alleged in the Show Cause Order and the steps the user intends to take to address the violations, the City may accept the response and document by issuing a Consent Order.

If a hearing before the City Council is requested or required, the Council may conduct the hearing; it may designate any of its members as an officer; or may appoint an employee of the City as a Hearing Officer to conduct the hearing. The officer conducting the hearing must carefully document all evidence, and submit a report of testimony and evidence with recommendations to the City Council for action.

After reviewing the evidence the City Council may issue an order to discontinue sewer service to the user unless adequate treatment facilities or equipment is installed or existing equipment is properly operated. The City Council may issue other orders and directives as necessary and appropriate. The City may terminate service or take judicial action to enforce any City Council order.

Civil Litigation

Both Wisconsin law and Chapter 29 authorize the City to engage in judicial action against any user who discharges wastewater into the City's POTW in violation of any Federal, State, or local law, regulation, or order. In emergency situations, or when administrative enforcement is not effective or sufficient, the City may pursue judicial action.

When discharges threaten human health, endanger the environment, or interfere with POTW operations, the City can use judicial enforcement and/or injunctive relief to protect the public, the environment, or the POTW. Injunctions direct parties to do something, or refrain from doing something. In emergency situations, the City can initiate civil litigation and request the court grant preliminary injunctive relief to prevent irreparable harm.

Civil litigation provides a remedy when efforts to restore compliance using administrative tools have failed. The City may obtain a court order requiring compliance and rely upon the court's power to enforce its own orders. The court can additionally order a user to enter agreements with the City as part of a final decision.

Civil litigation can be used to recover civil penalties and losses incurred due to noncompliance.

The City will seek to recover the costs incurred related to violations. The City will seek to recover the costs of cleaning, repairing, or replacing damage resulting from violations. The City will also recover the administrative costs of enforcement actions.

Criminal Prosecution

If any person willfully or negligently violates any pretreatment standard or requirement; knowingly makes a false statement, representation or certification; or knowingly falsifies, tampers with, or renders inaccurate any monitoring device or analytical method, then that person may be subject to prosecution under the criminal laws of the State of Wisconsin or the United States, in addition to actions for civil remedies.

The City Attorney will referred alleged criminal violations to the Rock County District Attorney, the Wisconsin Department of Natural Resources, the Wisconsin Attorney General, the U.S. EPA, U.S. Attorney or other party having jurisdiction over the alleged criminal violation.

Suspension or Termination of Service

The City may suspend or terminate a user's wastewater service or permit following a Show Cause Order and Hearing. A user may appeal the City's determination to suspend or terminate a user's wastewater service or permit following a Show Cause Hearing as provided by City ordinance and State law. If the user fails to comply with the City's suspension or termination order, the City shall take all steps as deemed necessary to halt the discharge including blocking or severing the sewer connection.

The City may immediately suspend a user's wastewater treatment service or a user's permit without first holding a Show Cause Hearing if such suspension is necessary to stop actual or threatened discharges which:

- Presents an imminent or substantial danger to the health, safety, or welfare of persons or the environment;
- Causes or may cause interference with the POTW; or
- Causes or may cause the City to violate any condition of its WPDES Permit.

Any user notified of an immediate suspension of its utility service or its permit shall immediately stop discharging wastewater into the POTW. If the user fails to comply with the suspension order, the City may immediately sever or block the user's sewer connection so as to prevent or minimize damage to the POTW or injury to persons or the environment. The City will only reinstate the permit and the wastewater treatment service upon proof that the user has eliminated the noncomplying discharge and after the user pays any costs for disconnection and reconnection of sewer service.

Party Responsible & Timetable for Enforcement

The first position listed in the Responsible for Enforcement column has the primary responsibility to initiate the enforcement. If that person is unavailable, the second person listed will have the primary responsibility and so on.

Enforcement Response	City Timetable for Enforcement	Responsible for Enforcement
Notice of Deficiency	15 Days	ES/ET, EC

Notice of Violation (NOV)	15 Days	ES/ET, EC
Citation with Forfeiture	15 Days	ES/ET, EC, DWR
Compliance Order	30 Days	ES/ET, EC
Compliance Agreement	30 days	ES, EC
Consent Order	30 Days	ES, EC, DWR, CA
Cease and Desist Order	30 Days	EC, ES, DWR, CA
Show Cause Order	30 Days	DWR, EC, ES, CA
Documentation of City Council Action revoking Permit/Suspending Service Following Show Cause Hearing	60 Days	EC, DWR, CA
Suspend Service (Emergency Situation)	Immediately	EC, DWR, ES, PWD, CA
Judicial Action	60 Days	CA
Consent Decree	60 days	CA
Criminal Action	90 Days	CA
EC = Environmental Coordinator; PWD = Public Works Director; ES = Environmental Specialist; ET = Environmental Technician; CA = City Attorney; DWR-Director of Water Resources		

Enforcement Guidance Chart

The following Enforcement Guidance Chart provides City staff with guidance in evaluating enforcement options for a variety of violations within the Pretreatment Program. Not all violations or circumstances may be listed. If a violation is not listed, the City will choose an enforcement option. The enforcement option selected shall fit the type and severity of the violation. This chart does not prohibit the City from selecting an enforcement activity different from that shown on the chart.

Violation Guide	Enforcement Action
1. Unpermitted discharge	
Unaware of requirement, First offense, No harm	NOV, Citation
After notification , continued violation, no harm , potential environment, health/safety	NOV, Citation, AO
Harm or potential harm to /health/safety, no corrective action required	NOV, Citation, AO
Harm or potential harm to environment/health/safety, corrective action required	Citation, AO, SCO, Termination
2. Discharge Limit Violation-Federal, State, Local	
Isolated, not significant	NOV, Citation
Isolated, significant, no harm	NOV, Citation, AO

Isolated, harm	NOV, Citation, AO, Civil Action
Recurring, no harm	AO with Citation
Recurring, significant, harm, after order	Citation, AO, SCO, Termination
3. Reporting Violations	
Report improperly signed or certified	NOV
Report improperly signed or certified after notice	Citation, AO, SCO
Report late <30 days	NOV, Citation,
Report late > 30 days	Citation, AO, SCO,
Failure to report spill or changed discharge-no harm	NOV, Citation
Failure to report noncompliance within 24 hours	NOV, Citation
Failure to report spill or changed discharge- harm	NOV, Citation, AO, Civil Action
Repeat failure to report spills or change in discharge	Citation, AO, Criminal, Termination
Falsification	Citation, SCO, Criminal, Termination
4. Monitoring	
Failure to monitor all pollutants as required, resample 30 days	NOV, Citation, AO
Improper sampling location or sample type /analyses	NOV, Citation, AO
Failure to install monitoring equipment <30 days	NOV, Citation
Failure to install monitoring equipment >30 days	NOV, Citation, AO
5. Compliance schedules or Orders	
Missed milestone <30 days	NOV, Citation
Missed milestone by >30 days-good reason for delay	Citation, AO
Missed milestone by >30 days- no-good reason for delay	Citation, SCO, Termination
Failure to follow special orders	Citation, SCO, Termination
6. Wastestream diluted in lieu of treatment	NOV, citation, AO
7. Failure to mitigate noncompliance or halt production	
Failure to mitigate noncompliance or halt production- no harm	NOV, Citation, AO
Failure to mitigate noncompliance or halt production- harm	NOV, Citation, AO, SC, Criminal
8. Failure to properly operate and maintain pretreatment facility/equipment	NOV, Citation, AO,
9. Deny entry	NOV, Citation, Warrant, Termination

10. Illegal discharge, permit or SUO violations (other than specific limits)	
No harm to POTW, no impact on environment/health/safety	NOV, Citation
No harm to POTW , potential impact on environment/health/safety	NOV, Citation, AO
Disrupts POTW operations, prevents entry to sewer, creates hazard	Citation, AO, Civil
Recurring, violates AO	Criminal, Termination
11. Inadequate recordkeeping	
First offense, incomplete	NOV, Citation
Recurring	Citation, AO, SCO
Failure to submit additional reporting requirements	Citation, AO, SCO
12. Failure to apply for a permit	
Failure to submit application, pay fee- initial	NOV
Failure to submit application, pay fee after notice > 30 days	NOV, Citation
Failure to submit application, pay fee after notice > 60 days	NOV, Citation, Termination
See Attachment 7-C for citation amounts	

For purposes of this chart:

- The term “days” or “day” refers to the “due date” and is a calendar day. If the “due date” falls on a weekend or legal holiday, the next business day becomes the legal “due date”.
- The term “report” is defined as any required submission as specified by a user’s permit or Chapter 29.

CITY OF Beloit WISCONSIN

CHAPTER 8

Safety

OSHA 101.055(3)(a) The department shall adopt, by administrative rule, standards to protect the safety and health of public employees.

City of Beloit Public Works – Water Resources Division

September, 2018

SAFETY

The City of Beloit Department of Public Works is committed to the safety and health of its employees. This is not all inclusive, revisions will be made as the need presents itself and there will be instances that require protective gear and/or safety oriented thinking that is not mentioned herein.

The primary responsibility for safety training of environmental staff is to ensure they have the knowledge, skills, and equipment to perform their duties in a safe manner. Since job safety training is probably the most effective means for the exchange of information related to safe work habits, both workers and supervisors are encouraged to hold one-on-one discussions on safety topics.

Environmental staff must:

- wear appropriate personal protective equipment (PPE) (e.g., steel or composite-toed shoes, hard hat, and safety glasses);
- maintain safety equipment in good working order;
- use safety equipment in accordance with any manufacturer specifications or label procedures.

In addition, environmental staff will follow all City safety policies the safety procedures established by the industrial user that is being inspected. The expectation for environmental staff is that since the industrial user inspection universe contains such a mix of varied industries they should review any hazard communication documents related to the industrial user, such as SDSs, prior to arriving onsite to assure that during inspections staff is prepared for the hazards that they may encounter.

SAFETY EQUIPMENT AND SUPPLIES

Environmental staff who routinely inspect permitted facilities or who could be called out on hazardous spills shall be supplied with the appropriate Personal Protective Equipment (PPE). All personal protective clothing and equipment will be of safe design and construction for the work to be performed and will be maintained in a sanitary and reliable condition. Employees must inspect each piece of equipment to make sure it is free of cracks, broken components or damaged components before and after each use. Standards require that PPE be used by employees whenever workplace hazards are discovered that could damage any part of the body. Adequate protection against the highest level of each of the hazards will be recommended for purchase. Only those items of protective clothing and equipment that meet NIOSH (National Institute for Occupational Safety and Health) or ANSI (American National Standards Institute) standards will be procured or accepted for use. It is the responsibility of an employee to use PPE in accordance with training and to report any defect immediately. PPE is not to be used for purposes other than its intended use. PPE cannot and will not be used as a substitute for safe work practices, machine guards, or other controls designed by equipment manufacturers or other engineering sources. PPE and safety equipment shall be stored in safe locations so that they will not be damaged when they are

not in use. PPE and safety equipment will be used properly, maintained properly, stored properly, and taken out of service when its useful life has expired.

Traffic Safety

Environmental staff shall follow the City of Beloit Fleet Safety Policy. The trucks are equipped with traffic cones and flashers. Work zones will be set up according to the State of Wisconsin's Manual on Uniform Traffic Control Devices (MUTCD). All staff will attend Work Zone Safety Training.

Confined Space

The City of Beloit's Confined Space Policy will be followed. Proper air monitoring equipment, ventilator, harness, lifeline, retrieval system, and other equipment will be used, especially when entering manholes or other confined spaces greater than 5 feet. No confined entry will occur until an entry permit is reviewed and signed by the Entry Supervisor. Each staff member will attend Confined Space Training.

Toxic Gases and Emergency Response

Environmental staff will use the four-gas meter and PID meter for air monitoring and investigation purposes. Pretreatment staff is trained in the use of all gas meters in the Water Resources Division. Each staff member is provided a respirator and filters and is trained and fit tested in Respiratory Protection. In addition, each staff member will obtain a minimum of 24 Hour Hazardous Materials Training.

Laboratory Safety

Environmental staff must follow the safety policies as established in the Laboratory Manual when working in the laboratory. Prudent practices for laboratory safety will be followed at all times. Laboratory jackets are provided for protection. Employees who work in the laboratory must attend Laboratory Safety Training.

Training and Documentation

The Water Resources Division will designate one or two people to identify training needs and document training activities to ensure that each employee receives adequate training for their position. All OSHA requirements will be met and updated as needed.

CITY OF Beloit WISCONSIN

CHAPTER 9

Spill Control Program

NR211.235(4)(a) Evaluate whether each significant industrial user needs a plan or other action to control slug discharges.

City of Beloit Public Works – Water Resources Division

September, 2018

Spill Control Program

Hazardous substances are used every day for many different uses. When a discharge or spill of a hazardous substance occurs, there is potential danger to the public and the environment. The Spill Control Program established by the Environmental Work Group consists of five (5) basic elements:

- A requirement to comply with environmental regulations;
- A process for establishing procedures to ensure compliance;
- Defining roles, responsibilities, and resources for establishing, implementing, and maintaining spill control and pollution prevention procedures;
- A plan for implementing procedures for emergency response and corrective action when hazardous spills occur;
- Documentation and record keeping of spill control and pollutions prevention activities.

This program and response efforts by Water Resources Division staff using available equipment and staff expertise have greatly reduced the number of incidents that occur within the City of Beloit. By forecasting, monitoring, preventing, limiting, and reducing negative impacts on the environment, program efforts translate into monetary savings for the City and its citizens by reducing cleanup costs, insurance premiums, and the potential for property contamination.

Not all discharges covered by this program are chemical in nature. The Water Resources Division's Spill Control Program covers any non-permitted discharge of material that may be considered a health hazard, that may create a public nuisance or safety hazard, or that may harm the environment. Emergency discharges that one may encounter include, but are not limited to:

- Railroad or vehicle accidents;
- Fixed facilities involving toxic, flammable, explosive, or corrosive material.

Regardless of the type or cause of an accident, a hazardous liquid can reach the collection system or storm drain and create an emergency for the community, the collection system, the treatment plant, wellhead protection areas, and the environment. Water Resources staff may encounter life-threatening situations and could be required to work with other agencies.

The City uses three different tools to protect its workers, its treatment facility, public health, and the environment from unpermitted discharges and hazardous substance releases. These tools are:

- Spill Control Prevention Plan template prepared by SIUs and qualifying commercial businesses;
- The City's Emergency Spill Response Plan;
- Environmental staff's development of Local Limits and Identification of Pollutants of Concern (POC) based on Water Quality Standards in the State of Wisconsin NR 140 – Groundwater Quality

Spill Control Prevention Plans (SCPP)

All SIUs and commercial businesses are required to file a permit application with the Water Resources Division. Environmental staff use the permit application to determine which businesses need to develop and maintain a Spill Control Prevention Plan (SCPP).

The purpose of the SCPP is two-fold. One purpose is to prevent untreated or unpermitted discharges, such as but not limited to sewage, chemicals, process wastewater, etc., from entering the POTW and adversely affecting the POTW or its employees. The second purpose is to prevent the unpermitted release of hazardous substances to the environment that may cause, significantly contribute to, or pose a substantial hazard to human health, safety, the drinking water supply, or the environment. A "release" means, but is not limited to: spilling, leaking, pumping, pouring, emitting, emptying, or dumping. The permitting process and the cooperation provided by Beloit's businesses make this a successful program for promoting environmental awareness in the community.

Each SIU is required to prepare and comply with a SCPP. In addition a commercial/industrial user that poses a medium to high risk must also submit a SCPP. A medium to high risk commercial user:

- Stores bulk chemicals;
- Uses potentially dangerous materials on the facility site;
- Discharges concentrations of conventional pollutants that may have an adverse effect on or has any other characteristic that the Environmental Coordinator determines has the potential to adversely affect the POTW, public health or safety, or endangers the environment.

Contents of the SCPP

If a SCPP is required, the plan should contain, at a minimum, the following elements:

- Facility layout and flow diagram;
- Materials inventory;
- Description of discharge practices including non-routine batch discharges to the POTW;
- Spill prevention procedures, such as procedures for inspecting and maintaining storage areas, handling and transferring materials, controlling loading and unloading operations; controlling facility site run-off, and preventing releases of hazardous substances to the environment;
- Spill prevention equipment, including containment and pretreatment equipment;
- Measures and equipment for emergency response;
- Procedures for notifying the City in the event of an unpermitted discharge to the sewer system or an unpermitted release of hazardous substances to the environment;
- Procedures for training workers a minimum of every two years and documenting that training.

Facility Layout and Flow Diagram

The layout and diagram shall at a minimum include:

- General layout of the facility, including boundaries, and connections to the City's sanitary and storm sewers;
- Areas occupied by manufacturing or commercial activities;
- Material process and storage areas, waste handling, storage and treatment areas;
- Floor drains, pipes and channels that may lead away from potential leaks or spills;
- Flow diagrams showing chemical and wastewater flows including piping and instrumentation, flow rates, tanks and capacities, treatment systems, and final destination of flow.

Material Inventory

A SCPP should include data on all materials of concern used and stored at the facility. Materials of concern include, but are not limited to, those materials listed in Tables A-D found at the end of this chapter.

Information should include:

- A list of hazardous materials stored, used, or produced on site;
- Safety Data Sheets (SDS);
- The quantity of the different hazardous materials on site (average and maximum amounts)
- The location of the materials;
- The type of container the materials are in, including tank sizes if applicable;
- The frequency the material locations and containers are inspected.

Spill Prevention Practices and Procedures

A SCPP should include practices and procedures to prevent unpermitted discharges to the sewer system and unpermitted releases of hazardous substances to the environment. Appropriate procedures should take into account the type of material, site-specific conditions, and the potential for different release events.

Procedures for preventing releases of hazardous substances during storage, loading and unloading of materials, processing of materials, treatment of materials, and other times that materials are handled should be included.

Good housekeeping practices, such as sealing floor drains where possible or covering them, proper chemical storage and labeling, secondary containment and pH neutralization, should be incorporated into the plan.

Spill Prevention Equipment

The SCPP should identify all equipment and/or systems that the user has in place or plans to obtain to prevent or control unpermitted releases or spills. Examples of prevention and containment equipment are listed below:

- **Chemical storage and process tanks.** Holding tanks, pumping equipment, underground seepage protection, cathodic protection for underground tanks, liquid level sensing, overflow, temperature, pressure alarms, heating coils, collision protection support structures, secondary containment, and diversionary structures.
- **Drums.** Drum construction, storage areas, secondary containment, diversionary structures, collision protection, drum handling equipment, and drip pans.
- **Pipes, valves, fittings, pumps, electrical, and mechanical.** Seals, valve stem packing, gaskets, cathodic protection, and vehicular traffic warning signs.
- **Loading/unloading stations.** Fill safe guards, curbs and drains, warning signs, and secondary containment.
- **Alarm systems.** To detect unauthorized discharge flows, pH excursions, etc.
- **Equipment to contain spills.** Booms, barriers, sweeps, surface collection agents, absorbent materials, skimmers, oil/water separators, sumps, and sewer plugs.

Emergency Response Equipment and Procedures

Each SCPP should contain a detailed description of procedures to be followed in responding to a hazardous spill at the facility. The procedures should be designed to eliminate danger to human health and to facilitate containment and cleanup of a spill. A description of the procedures should contain the following items: notification of responsible personnel; chain of command; evacuation procedures; notification of response agencies; and spill assessment and response procedures.

The SCPP should also include an inventory of available emergency response equipment and the physical description of each piece of equipment. The equipment location should be shown on the facility layout diagram.

A summary of the emergency response material that should appear follows:

- Communication equipment and alarms;
- Spill containment and control equipment and tools;
- Spilled material storage containers;
- Protective clothing and respirators;
- First aid kits;
- Ventilation equipment;
- Decontamination equipment;
- Fire extinguishers.

The SCPP should include sufficient technical information about the equipment and procedures to allow the City to evaluate the adequacy of the equipment and procedures.

Diking is the most effective form of secondary containment for accidental releases from bulk chemical storage. Dikes may be constructed from concrete, cinder blocks, oil dry, or earth.

Diversion of flow of potentially spilled material away from its naturally expected path can also be an effective means of emergency secondary containment.

Notification Protocols

The SCPP must include procedures for immediately notifying the City and the WDNR, if applicable, in the event of an unpermitted discharge to the POTW or an unpermitted release of a hazardous substance to the environment.

The Director of Water Resources has assigned the Environmental Staff as the unpermitted discharge designee. Environmental Staff must be notified immediately of slugs or unpermitted discharges to the POTW, including any discharge that constitute a violation of 40 CFR 403.5(b). Environmental Staff must also be immediately notified of a hazardous substance release to the environment.

Training

A SCPP is only effective if it is implemented by the employees. The SCPP should contain an outline of the training protocol given to employees. Periodic training sessions are essential and should be conducted at appropriate intervals to assure complete understanding of the plan, goals, and objectives. New employees should be trained immediately upon employment. The SCPP must provide for employee training a minimum of every two years, and documentation of that training. Training records shall remain on file for a minimum of three years.

Environmental Staff Review of SCPP

A user's SCPP is evaluated at the time of permit issuance. In addition, Environmental staff will review a user's SCPP when they conduct a facility inspection. Facility inspections of SIUs are typically done annually. Environmental staff will use a form entitled "City Review: Spill Control/Emergency Response Form" as seen in the Chapter 9 Appendix.

Before conducting an inspection, the inspector should be familiar with the SCPP on file for the user. The inspector should ensure that the SCPP is current. It is extremely important to verify information every three (3) years, especially if the facility has made physical changes to the building, processes, chemical use, etc.

The inspector will verify compliance with requirements including risk classification and training requirements.

Plans will be reviewed after every incident to ensure the program was followed and the proper corrective action was taken.

Environmental staff review all SCPPs prepared by users using the checklist in the Chapter 9 Appendix.

SCPP Compliance as a Permit Condition

The SCPP and all subsequent updates are required under the user's permit. Failure to comply with any portion of the approved SCPP and/or updates shall be considered a violation of the user's permit.

A user has a duty to take all reasonable steps to minimize or prevent any unpermitted discharge of a hazardous substance that has a likelihood of adversely affecting the POTW, public health or safety, or endangering the environment.

Reporting Requirements

A discharge or release of material that is not approved by either a permit or ordinance must be reported if it:

- Enters the sanitary sewer system;
- Is discharged to surface waters:
- Is discharged to private or public ground and contains pollutants that may create a hazard, a public nuisance, or damage to the environment.

Spills that are reported to the WDNR, including but not limited to those noted in NR292 and NR700 should also be reported to the City.

Permittee Spill Reporting Procedure

If there is an unpermitted discharge to the POTW or an unpermitted hazardous release to the environment the discharge must be reported to the Environmental staff.

Initial Notification

Environmental staff must be notified immediately at (608) 364-2888. Spills of flammable or explosive materials should also be called in to emergency services by calling 9-1-1.

Written Report

As per Chapter 29.18, a written report must be submitted by the permittee to the Environmental Coordinator (designated by the Director of Water Resources) within five (5) days of:

- A spill or slug discharge of conventional pollutants that reaches the sewer;
- An unpermitted hazardous substance that reaches the waters of the state through the City's storm sewer;
- The release of a hazardous substance with the potential for a fire/explosion;
- An unpermitted hazardous substance release to the environment, including a release to private or public ground.

The written report shall contain the following elements:

- Date and time of discharge or release;
- Location of discharge or release;
- Concentration, volume, waste type, chemical name and harmful characteristics or effects of the material (e.g. explosive, flammable);
- Cause of the incident;
- Specific details of the incident;
- Name of agencies or contractors contacted;
- Response measures taken;

- Preventive mechanism to avoid reoccurrence of similar incidents;
- Effectiveness of the SCPP.

The written report requirement may be waived by the City.

Log Sheet Requirements

If a release is small enough to be handled using personnel and equipment routinely located in the immediate area of the release, the event is treated as an incidental release, rather than an emergency. These incidences are placed on a reporting log sheet (see sample in the Chapter 9 Appendix).

The log sheet must contain the following information as applicable:

- Date and time of incident;
- Date and time material is removed from spill containment area;
- Identity of material (an analysis is required if the spill is of unknown origin to determine the type of treatment or remediation required for proper disposal);
- Quantity (volume);
- Cause of spill;
- Corrective action implemented to prevent spills from reoccurring;
- Whether or not the SCPP was followed and found to be effective.

The following items do not need to be entered onto the log sheet:

- **Minor** releases of a hazardous substance that do not impose any threat to the environmental or public safety, that stay on an impervious surface, and that are immediately and properly cleaned up;
- 100 gallons or less of impounded materials removed from spill containment areas;
- Releases of less than 5 gallons of flammable material or other petroleum based products that immediately evaporates or is immediately cleaned up by trained facility staff.

Each user required to implement a SCPP must keep a log sheet that is available to Environmental staff upon request and during inspections. Each SIU required to have a SCPP must also submit the log sheet as part of its monthly report.

Water Resources Spill Reporting Procedure

The City's follow-up report should include the investigator's evaluation of the adequacy of the user's response procedures. In particular the investigator's reports should address the following questions:

- Was the safety of industrial personnel and surrounding community ensured throughout the incident?
- Were personnel working close to the incident provided adequate access to breathing apparatus and appropriate PPE?
- Was the spill confined quickly?
- Did secondary containment remain intact throughout the spill response?

- Were appropriate POTW, fire department, WDNR, or other officials immediately notified of the incident?

The investigator should fill out the City Review: Spill Control/Emergency Response form to evaluate the plan as written and whether or not it was followed by the user. The report should note any deficiencies that need to be corrected in the plan, equipment, reporting, or training needs.

Definitions

For the purposes of Chapters 9 and 10, the following definitions apply:

Hazardous Substance

Any substance, or combination thereof, which because of its quantity, concentration, or physical, chemical, or infectious characteristics may cause, significantly contribute to, or pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, disposed of, spilled, or otherwise managed.

Hazardous Substance Release

The unpermitted spilling, leaking, pumping, pouring, emitting, emptying, dumping, leaching or release of a Hazardous Substance.

Interference

Any discharge which, either alone or together with a discharge from any other source:

- Disrupts or obstructs any process or operation of the POTW; or
- Causes the POTW to violate any requirement of its WPDES permit; or
- Prevents sewage sludge use or disposal; or
- Causes the POTW to lose sewage treatment efficiency.

Pass Through

A discharge which enters the POTW in such quantity/concentration or duration as to cause the POTW to violate its WPDES permit.

Slug Load

A discharge to the sewer of a non-routine, episodic nature, including but not limited to, any release or non-customary batch discharge, alone or in combination with the effluent discharges of others, which has a reasonable potential to cause interference, pass through, or affect the normal removal efficiencies of the POTW. Reportable discharges include those that do not enter the sewer but have the potential as identified by the POTW to cause public health issues, endangerment to worker's safety or a detriment to the environment.

CITY OF Beloit WISCONSIN

CHAPTER 10

City Response to Spills

NR291.001 The legislature finds that hazardous wastes, when mismanaged, pose a substantial danger to the environment and public health and safety. To ensure that hazardous wastes are properly managed within this state, the legislature declares that a state-administered regulatory program is needed which: (1) Relies upon private industry or local units of government to provide hazardous waste management services.

City of Beloit Public Works – Water Resources Division

September, 2018

City Response to Spills

The Water Resources staff responds to hazardous material spills in their designated areas. The team's mission is to protect Beloit's citizens, the environment, the treatment facility, the drinking water supply, and City employees from the effects of hazardous material releases or the threat of a hazardous materials release. The team will operate in a timely and efficient manner to minimize damage and cost associated with hazardous materials incidents whenever possible.

Training

Employees must have a minimum of 24 Hour Operational Hazmat Training. Those who enter the hot zone of an unknown hazardous material shall have 40 Hour Technician Training. The hazmat technicians shall have annual refresher training. New employees should be trained immediately upon employment. Periodic training sessions are essential and should be conducted at appropriate intervals to assure complete understanding of the plan, goals, and objectives. Training records shall remain on file for a minimum of seven years.

Emergency Spill Response Plan

The City maintains an Emergency Spill Response Plan to efficiently and effectively provide clean-up of non-hazardous and certain hazardous materials to protect the public health and the environment. The primary goal of the plan is to isolate, contain, confine, and stabilize the incident. Each City department lends it expertise and equipment to minimize and mitigate emergency situations within the scope of their abilities.

Water Resources Spills

Water Resources staff will only respond to spills within their facilities or that could enter the sanitary sewer system, storm sewer system, or present an immediate danger to the City's drinking water supply.

Initial Assessment

Any hazardous substance spill, release, or discovery will initiate the notification procedure. The first person on the scene will evaluate the situation as quickly as possible without endangering themselves. At this stage of the emergency, a responder will remain a safe distance from the incident.

In evaluating the situation, the following must be done:

- Determine the location of the problem and the affected area;
- Control public access to the spill area;
- Estimate of the volume and identity of the hazardous substance(s);
- Assess rescue needs: call 911 if necessary;
- Assess immediate remedial actions options (diking, damming, or diversion – drain covers, etc.);
- Assess the possible effect on the City's infrastructure. How does the release affect the wastewater treatment plant? Are collections systems, lift stations, wet wells, and the operations and maintenance people who maintain the collection system and the plant at risk as a result of the spill?

Identifying the Material

Hazardous substances are substances that fall within the categories as defined under Section 101(14) [42 U.S.C. 9601], the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA); any biological agent or other disease cause agent as defined under Section 101(33) of CERCLA; any hazardous material as listed by the DOT in 49 CFR 172.10; and any hazardous waste as defined by 40 CFR 261, the Resource Conservation and Recovery Act (RCRA).

City staff should take the following steps to identify the released material:

- Use proper PPE, set up safety zones, and check for a possible source;
- If the source is from a fixed facility, contact proper facility personnel for assistance. Check the SCPP and/or SDS on file in the Environmental office.
- Use air-monitoring equipment, pH, TPH test kit, hazmat test kit, etc. to help identify the product or determine if it exhibits any hazardous traits;
- Look for SDS or shipping papers, placards, labels, etc.;
- Use the WISER computer program or Emergency Response Guide Book (ERG) to narrow the class of material by color, odor, etc.;
- Try to collect a sample from a bottle on a rope if the material has entered the sewer;
- Use a pH pen or pH paper if a sample is collected. Is it neutral, acid, or base?;
- Use the sewer map to help identify the travel route in the storm or sanitary sewer;
- Use proper sampling techniques if the sample must go to a laboratory for identification.

Response

In responding to the situation, use this 8-step process:

1. Site management: establish command and control;
2. Identify the problem and material(s) involved;
3. Assess the hazard and risk using the Risk/Vulnerability Assessment Form B;
4. Determine Personal Protective Equipment (PPE) requirements;
5. Develop a plan of operation and coordinate resources utilizing Strike Team Form C;
6. Implement the response objective and evaluate progress using Safety Officer Checklist Form D;
7. Decontamination and clean-up: secure and label material for disposal;
8. Terminate, debrief, and critique.

Use of the Buddy system is required. The system demands workers or response personnel to be visible and easily accessible to another equally equipped member of the group, allowing quick response in case of an emergency.

Reporting

Use Hazmat Investigation Form A to document each incident and to fulfill reporting requirements to the DNR, if necessary.

DNR spill reporting requirements are found in NR 292.11 & NR 706. Spills may be reported by calling the 24-hour spill hotline at 1-800-943-0003.

Use the following guidelines in determining if the spill is reportable:

- There is an impact to human health (an evacuation is considered a threat to human health).
- There is an impact to the environment (waters of the state includes a threat or spill into a sanitary sewer, storm sewer, and/or surface water).
- There is a fire, explosion, or safety hazard (a slippery road condition is considered a safety hazard).
- You have not immediately cleaned up the spill (has it evaporated or been cleaned up in accordance with NR700-726).
- The spill was more than the reportable quantities as defined by NR706. Federal reportable quantities are defined in CERCLA RQ column of the Sara Title 3 list of lists.

Protection Of Sewer System From Releases

Containing spills at or as close to the source as possible provides protection for the sanitary and storm sewers.

Risk Assessment

A hazardous substance release that has the potential to infiltrate sewers can result in explosive and/or toxic liquids or gases in the sewer system.

In the event of a hazardous substance release with the potential to infiltrate the sewer system, the City must assess the following information:

- Can the collection system either minimize gas accumulation or enhance the opportunities for release of gases?
- Is the collection system free flowing or surcharged?
- Are there stagnant or dead spots in the collection system downstream from the infiltration point?
- Are there sections of the system that are aerobic or anaerobic?
- Are waters of the state affected by the incident?
- If the soil is contaminated, is remediation necessary?

Methods For Containing Spills

Absorbents, absorbent booms and/or drain mats may be used to prevent spills from entering the sewer. Contaminated flows can be diverted from critical areas or contained on site. Stoplogs, sandbags or sewer plugs can be installed to contain the flow for cleanup. Treatment plant wet wells or pump stations may be used as reservoirs to trap floating material so it can be removed. It may be advantageous to "back up" or "block off" a sewer so as to reduce headspace for volatile gases (toxic or explosive) to collect. Ventilating sewers using non-explosive equipment may also be an option.

Treatment Of Contained Flow

Caustic substances can be tested for pH. Once a pH is determined, the substance can be neutralized using caustic soda, soda ash, lime, citric acid, weak acidic acid or other appropriate neutralizing agents.

Detection Of Contaminants In The POTW

The City's wastewater treatment plant and lift stations have alarm systems that notify an on-call supervisor of problems within the system. A list of these alarms is found in Attachment E. These alarms include but are not limited to: high/low dissolved oxygen; high/low influent pH; wet well hazardous atmosphere; high/low wet levels; equipment failures; power failures; etc. These alarms are used to indicate a potential failure of a critical operation.

If there is a problem with the system, the alarm system calls the on-call phone and indicates the type and location of the alarm. The City responds to plant/lift station alarms by contacting either the Plant Operator or Maintenance staff. Collection system problems are given to the Collection Crew. Operational or prohibited discharge issues that may be caused by a user are given to the Environmental Staff for investigation.

Treatment Of Releases That Reach The WPCF

If the hazardous substance has the potential to reach the wastewater treatment plant, efforts must be made to limit damage to personnel, structures, equipment, and microorganisms.

The Operations & Maintenance Supervisor should be notified immediately. Operators need to take immediate action to divert or bypass the flow to minimize the impact to the plant.

Once the spill enters the treatment plant, operators may be able to make adjustments in the treatment process such as changing the solids wasting rate. Operators shall waste potentially hazardous materials to only one digester. Extended or adjusted aeration rates may lessen the impact of the toxin on microorganisms. Some organics and VOCs may be evaporated with extended aeration. When evaporating hazardous substances, extra air monitoring and effluent sampling should be conducted.

Emergency Manuals

The POTW has an Emergency Response Plan and an Environmental Hazmat Emergency Manual. These manuals cover emergencies that include: power failure; flooding; tornado; ice/snow storm; fire; hazardous materials; and terrorism. The Environmental Hazmat Emergency Manual covers areas of hazmat including identification of material, site control, hazard zone establishment, principles of toxicity, PPE, hazard assessment, risk analysis, and clean-up options.

POTW Review And Approval Of The Plan

Environmental Staff will review this plan annually. The *Spill Control Prevention/Emergency Plan Checklist for POTWs* (Appendix X) will be used to determine the adequacy and details of this plan.

CITY OF Beloit WISCONSIN

CHAPTER 11

Remediation Projects

The EPA defines “Remediation Waste” as all solid and hazardous wastes and all media (including ground water, surface water, soils, and sediments) and debris that are managed for implementing clean up.

City of Beloit Public Works – Water Resources Division

September, 2018

REMEDIATION PROJECTS

The Water Resources Environmental staff issues permits to discharge waste to the sanitary sewer system from remediation projects within the City. This allows the City to remain in compliance with State and Federal law when contaminated property is remediated. Using laboratory testing and adhering to regulations, Environmental staff determines which waste is acceptable. If the city does not issue a permit, the property owner must find other legal means of disposal.

The discharge prohibitions in 40 CFR 403.5 apply to all discharges including domestic and non-domestic hauled waste. Hauled waste has the potential to create a number of impacts at a treatment plant including pass through or interference, sludge contamination, and worker hazards.

REGULATIONS

The Resource Conservation and Recovery Act (RCRA) creates the framework for the proper management of hazardous and non-hazardous solid waste. The RCRA protects communities and resource conservation. EPA regulations regarding remediation can be found in 40 CFR, parts 239 through 282.

HAZARDOUS WASTE

Both State and Federal rules require the generator of a waste to determine whether that waste is a hazardous waste. This requirement applies to contaminated media and other waste generated during remediation activities, as well as process wastes. There are two major ways that contaminated environmental media can become a hazardous waste. The first is if the media contains a listed hazardous waste, and the second is if the media exhibits a hazardous characteristic. In either case, it is the waste generator's responsibility to determine if the media is a hazardous waste. This can be accomplished by either testing the material using the methods set out in NR 661, or by "applying knowledge". Test results are compared to lists of hazardous materials and used to decide if a waste is considered hazardous and will be accepted. Unfortunately, no specific guidance exists on the criteria to use when applying knowledge, especially for contaminated media and therefore, these decisions need to be made on a case-by-case basis.

LISTED WASTES

Chapter NR 661 Subchapter D includes a series of tables that identify certain waste streams that are, by definition, hazardous wastes. "F" listed wastes are hazardous wastes from non-specific sources. "K" listed wastes that are hazardous wastes from specific sources.

The rules also contain a list of commercial chemical products and manufacturing chemical intermediates such as benzene or trichloroethlene (TCE) that would be considered listed hazardous waste if a person discards or intends to discard these products or intermediates. These would be considered either "U" listed or "P" listed wastes depending on the compound. Further, wastes or media derived from the treatment of a listed hazardous waste would be considered listed hazardous waste. Finally, solid wastes or environmental media that are mixed with listed hazardous waste are also considered hazardous waste under the "mixture rule".

The "contained-in" policy states that contaminated environmental media is not itself a hazardous waste but requires management as a hazardous waste if it contains a listed waste or exhibits a hazardous characteristic. In remedial situations, it is often difficult to determine the source of contamination. EPA guidance indicates: "Where a facility owner/operator makes a good faith effort to determine if the

material is a listed hazardous waste but cannot make such a determination because documentation regarding the source of contamination, contaminant or waste is unavailable or inconclusive, one may assume the source, contaminant or waste is not a listed hazardous waste." The EPA guidance goes on to say: "Therefore, provided the material in question does not exhibit a characteristic of hazardous waste, RCRA requirements do not apply." Waste must always be tested for hazardous characteristics or contaminants prior to classification.

Characteristic Waste

Contaminated media can also be considered a hazardous waste if it exhibits the hazardous characteristic of ignitability, reactivity, corrosivity or toxicity. Chapter NR 661, Subchapter C, identifies the specific test methods that are to be used when determining if a material exhibits a hazardous characteristic. The characteristic most likely to apply to contaminated media is toxicity. Section NR 661.24 identifies the specific test method for determining toxicity, the Toxicity Characteristic Leaching Procedure (TCLP) test. The TCLP test is the current analytical procedure for determining if a waste or media is hazardous for toxicity. Regulatory limits have been established by rule in s. NR 661.24(2) – Table 2 for six pesticides, eight metals, and 26 organic compounds. Consideration should be given to performing total contaminant analysis prior to TCLP testing. If the contaminated media has total contaminant concentrations less than 20 times the TCLP regulatory limit it may be assumed the regulatory limit for that compound will not be exceeded.

Remediation Waste Review Process

It is the policy of the City to deny accepting remediation waste for discharge to the sewer or the POTW without analysis. If waste contains the action level or higher concentration of any listed contaminant in NR 140 or fails other criteria as listed in the Chapter 11 Appendix, the City will not accept the waste.

Remediation Waste Procedure

Before assessing the acceptability of remediation waste, Environmental Staff must review information on the waste characteristics and specifically the pollutant concentrations. Information on the source of the waste and the general type of waste can provide clues as to possible pollutants and potential problems.

- Permit application must be submitted with laboratory results for possible pollutants
- Environmental staff review permit application and test results against regulations in NR 140, 40 CFR 268.37, RCRA and the POTW's inhibition limits and local limits for acceptance of waste for treatment.
- Hazardous waste hauler information must be provided to Environmental staff
- Permit for discharge is issued or denied.

For a detailed description, see the Remediation Projects Standard Operating Procedure in the Chapter 11 Appendix.