Department Note: As MS4 Permittees demonstrate compliance differently and MS4 Permittees may have different MS4 permit conditions, the following written program procedure is intended to provide ideas on various formats. Therefore, please note the provided example may not be appropriate, as is, for your community. Additionally, the following is a written program procedure that has been submitted to the Department by a MS4 Permittee. However, the MS4 Permittee name have been removed to keep them anonymous.

Department of Neighborhood Services — Engineering Division

Storm Water Management Program

Pollution Prevention

Section 9D - Leaf & Grass Clipping Management Practices

1. Introduction

This document provides an overview and further details the City's leaf and grass clipping management practices as they relate to the Wisconsin Department of Natural Resource (WI DNR) WPDES permitting requirements for the management of leaves and grass clippings.

2. Management Responsibilities

The Department of Neighborhood Services is the primary point of contact for the management of the City's yard waste and leaf and grass clipping programs. Collectively, the Engineering Division and the Department of Public Works (DPW) provide administrative oversight, run various programs related to the City's yard waste and leaf and grass collection efforts, and provide education and outreach efforts for our programs.

In addition, the City contracts with Johns Disposal Service who provide residents with 34 weeks of residential curb side collection of leaves, grass clippings and yard waste as part of our solid waste disposal program. As part of our contact with them, Johns Disposal Services also runs the City Drop-Off Center which allows residents to drop these items off throughout the year.

Residents are also encouraged to manage their own properties by mulching their leaves and grass clippings whenever possible and leave them on their lawn as an alternate to chemical fertilizers.

3. Garbage, Recycling, Yard Waste and Leaf and Grass Collection Program

Each year as part of our garbage and recycling contract with Johns Disposal Services, the City provides residents with 34 weeks (approximately April thru November) of residential curb side collection of leaves, grass clippings and yard waste. With the curbside program, grass clippings, leaves and garden debris must be placed in containers and labeled as Yard Waste. Residents can get free yard waste labels from City Hall and our DPW.

In addition to the curb side program, Johns Disposal Services also runs the City Drop-Off Center which allows residents to drop yard waste, leaf and grass clippings off throughout the year.

On average, Johns Disposal Services collects 1,771 tons of yard waste annually from the curb side program and Drop-Off Center. Materials collected by Johns Disposal Services as part of these programs are disposed of directly by Johns Disposal Services.

4. Fall Leaf Collection Program

The City assists residents in picking up leaves from early October into mid-November each year. The City has been divided into five (5) districts for leaf collection, and attempts to provide three collections in each of the five (5) districts. Residents are asked to have leaves raked out to the curb / road edge on the Monday of their designated pick-up week.

The City utilizes vacuum trucks to collect the leaves that are placed at the curb / road edge. During the peak of the fall leaf season, the City DPW contracts with Johns Disposal Services for the use of a push packer system that allows the City to collect leaves quicker and more efficiently. The leaf packer is typically used for around 10-14 days in the peak of the leaf season. Because the push packer system is not a vacuum, it can leave behind some minor leaf debris on curb and gutter streets, so the City follows leaf packer collection with our street sweeper to pick up leaves that may have been left behind.

Once collected, leaves are deposited and staged in our DPW west yard located at 11701 W Morgan Ave where they are used in the City leaf compost program described under paragraph 5.

To estimate the weight of material collected, the City uses a conversion from the volume of material collected (cubic yards) to tonnage. As material is emptied, DPW crews track material type and the volume deposited. At the end of the season, the volume of material collected is summarized and applied to the following conversion table / rates:

Yard Material	Unit	Estimated Weight (lbs.)
Leaves	Cubic yard	375
Un-compacted Mixed YW	Cubic yard	250
Compacted Mixed YW	Cubic yard	640

The source data in the table above was taken from the "2016 Volume-to-Weight Conversion Factors" published by the United States Environmental Protection Agency (USEPA). As the USEPA rate for leaves was a range form 250-500 lbs. per cubic yard, our table uses the median of the range given leaf moisture content can vary.

Prior to the use of this method, it is unclear how the weight of material collected had been computed.

Historically, we estimate that our DPW collects around 4,585 tons of leaves annually as part of our fall leaf collection program.

5. Leaf Compost Program

Once collected, leaves are deposited in our DPW west yard, staged and processed into leaf compost. This leaf compost is made available to our residents for free as part of a self-service pick-up from our DPW yard at 4551 S 52nd St. Leaf compost is also available for home delivery to City residents for a $50 delivery fee per truckload.

6. Fall Leaf Collection Best Management Practices (BMPs)

The City believes that we are already following the necessary BMPs as part of our leaf collection program in order to reduce nutrient loading to the maximum extent practical. These practices include:

a) Direct residents to rake leaves to street shortly before they are collected. This eliminates having leaves stored in ditches or near curb and gutter for too long where they have a higher chance of being transferred into a storm sewer conveyance system.
b) Provide residents with a scheduled fall leaf collection program that provides properties with multiple collection periods.
c) Provide higher efficient vacuum collection when possible to limit the amount of leaves being left behind in swales or curb and gutter during collection efforts.

d) Transition to push packer collection (non-vacuum) during heavy, peak leaf drop periods to allow for quicker collection and ensure that the majority of leaves from the peak drop are getting collected quickly.
e) For curb and gutter areas where we use non-vacuum collection practices, supplement collection with street sweeping and/or vacuum collection as needed shortly after push pack process in order to pick up residual leaves that may get left behind.
f) Collect, transport and deposit leaves in an efficient manner.
g) Promote the reuse of leaves by processing leaves into leaf compost for use by our residents.

7. Leaf and Grass Clipping Management Minimum Control Practices

- On an annual basis, track and record the tonnage of material collected.
- Provide our residents with curb side and drop off service for disposal of yard waste, leaves and grass clippings during the annual growing season.
- Follow current fall leaf collection BMPs identified in paragraph 6.

Department of Neighborhood Services — Engineering Division

Storm Water Management Program

Pollution Prevention

Section 9C - Street Sweeping and Catch Basin

1. Introduction

This document provides an overview and further details the City's street sweeping and catch basin cleaning practices as they relates to Wisconsin Department of Natural Resource (WI DNR) WPDES permitting requirements for street sweeping and catch basin cleaning.

2. Management Responsibilities

The Department of Public Works (DPW) is responsible for street sweeping and catch basin cleaning and for the disposal of the material collected from those efforts.

The Engineering Division aids the DPW in their effort by utilizing the City's GIS mapping system to develop specific plans for DPW to follow for these activities to help maximize our efficiency and to target specific needs. The Engineering Division is also responsible for the regulatory reporting of these activities, which is done in conjunction with quantities and other cleaning data collected by the DPW during their efforts.

3. Applicability

If street sweeping or catch basin cleaning is utilized to meet a water quality requirement under the WPDES permit, sweeping and catch basin cleaning shall continue at the frequency specified in the City storm water management plan analysis. The City's last storm water management plan analysis (Dec. 2018) included street sweeping, but did not include catch basin cleaning for water quality reduction calculations.

4. Street Sweeping

Street sweeping has proven to be a beneficial means of removing sediment and debris from City streets

resulting in improved water quality for the region.

The street sweeping frequency used in our last storm water management plan analysis and modeling used a sweeping rate of around 4.5 passes per year, or one pass every eight (8) weeks on all City curb and gutter streets. That same storm water management plan analysis indicated that an increase in the cleaning cycle frequency in TMDL areas to closer to one pass every two (2) weeks would result in increased removal rates and improved water quality.

Therefore, in an effort to start to transition towards achieving higher water quality standards in our TMDL watersheds, the City utilized our GIS system to develop a new street sweeping program where we make two (2) sweeping passes in our TMDL areas to every one (1) sweeping pass in our MS4 areas. Appendix A contains a map that was prepared to illustrate the different program areas and for our DPW crews use to assist in their sweeping and tracking efforts. Although we are following this new 2 to 1 sweeping format and are tracking our sweeping data by TMDL / MS4 areas, we have yet to perform any updated modeling analysis to determine its impact on the overall efficiency which we intend to do as part of our next storm water management modeling analysis. As part of that analysis, the City may model different street sweeping and catch basin cleaning scenarios to determine if there could be better

and more efficient ways combine these efforts given cleaning one can affect the need and timing for cleaning the other.

Although there may be some overlap, it should be noted that street sweeping during the fall leaf collection period is not part of the routine street sweeping practices listed above. Fall leaf collection efforts are tracked as a separate process under our leaf and grass clipping collection program.

5. Catch Basin Cleaning

While catch basin cleaning can be a beneficial means of removing sediment and debris from the City storm sewer system resulting in improved water quality for the region, historically the City has not been able to conduct a consistent catch basin cleaning program with the number of catch basins cleaned per year fluctuating. Therefore, catch basin cleaning was not included in our last storm water management plan analysis and modeling.

Recognizing the need to have a routine catch basin cleaning program and the water quality benefits it can provide, in 2018 the City implemented a catch basin cleaning program with a goal of cleaning approximately 500 City catch basins per year. Appendix B illustrates the City's current catch basin cleaning program and defines the areas to be cleaned each year to assist our DPW crews in their cleaning and tracking efforts. While we have been following this catch basin cleaning map / program, we have yet to perform any updated modeling analysis to determine its impact on the overall efficiency which we intend to do as part of our next storm water management modeling analysis. As part of that analysis, the City may model different street sweeping and catch basin cleaning scenarios to determine if there could be better and more efficient ways combine these efforts given cleaning one can affect the need and timing for cleaning the other.

Although there may be some overlap, it should be noted that catch basin cleaning during the fall leaf collection period is not part of the routine catch basin cleaning practices listed above. Fall leaf collection efforts are tracked as a separate process under our leaf and grass clipping collection program.

5. Equipment

Sweeping and cleaning efforts are performed by the City using a Vactor 2100 combination sewer and catch basin cleaner and an Elgin Whirlwind air vacuum street sweeper.

6. Material Disposal

Materials collected from street sweeping and catch basin cleaning are emptied into a covered "De – Watering" station. Once dried, the remaining solids are removed by our solid waste disposal contractor. Material tonnage is tracked and reports are generated monthly, annually, or as needed.

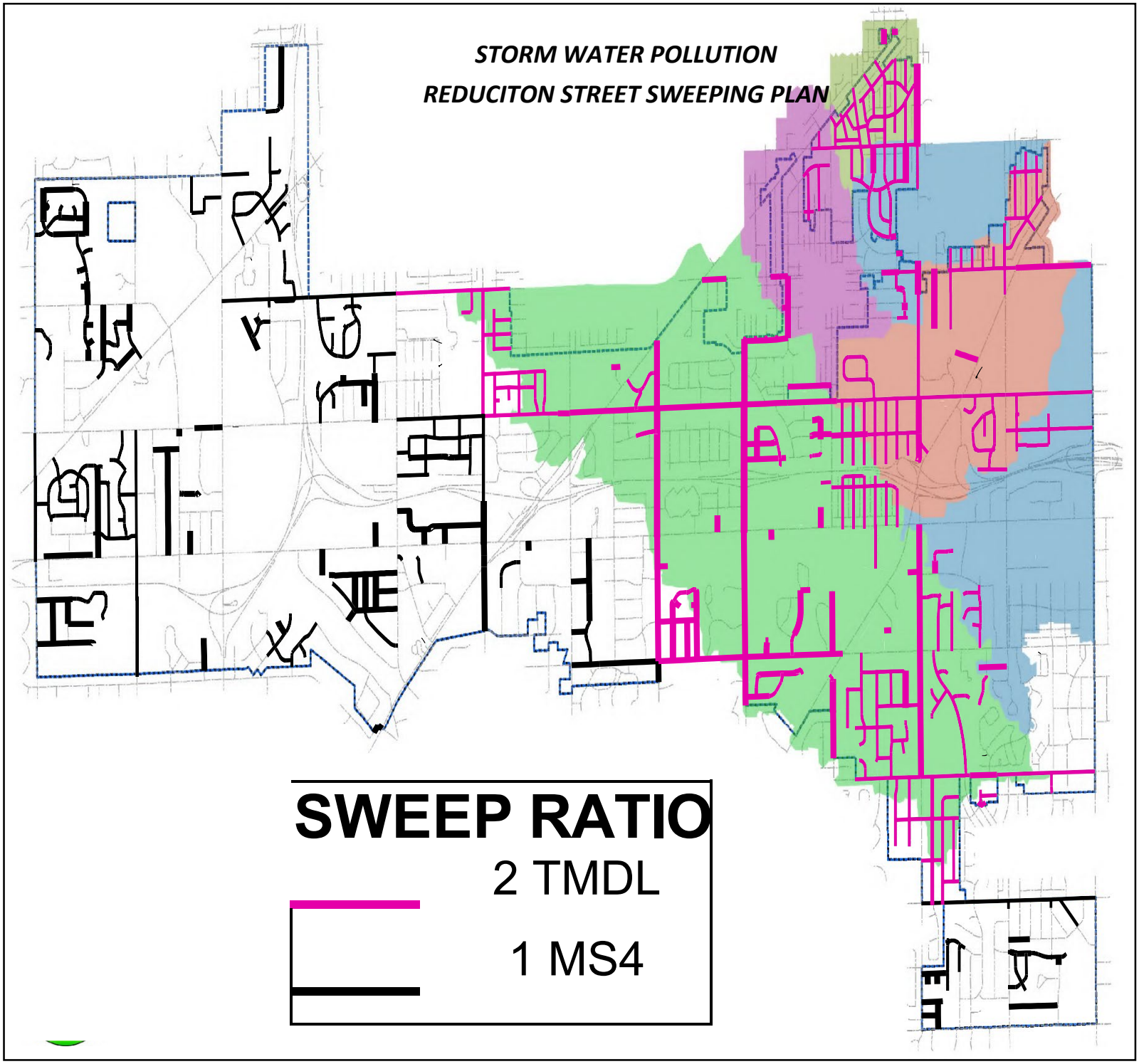
7. Street Sweeping and Catch Basin Cleaning Minimum Control Measures

- On an annual basis, meet or exceed the equivalent of 4.5 street sweeping passes on City curb and gutter streets.
- On an annual basis, meet or exceed cleaning 500 City storm sewer catch basin sumps.
- On an annual basis, follow proper material disposal practices and document tonnage removed.

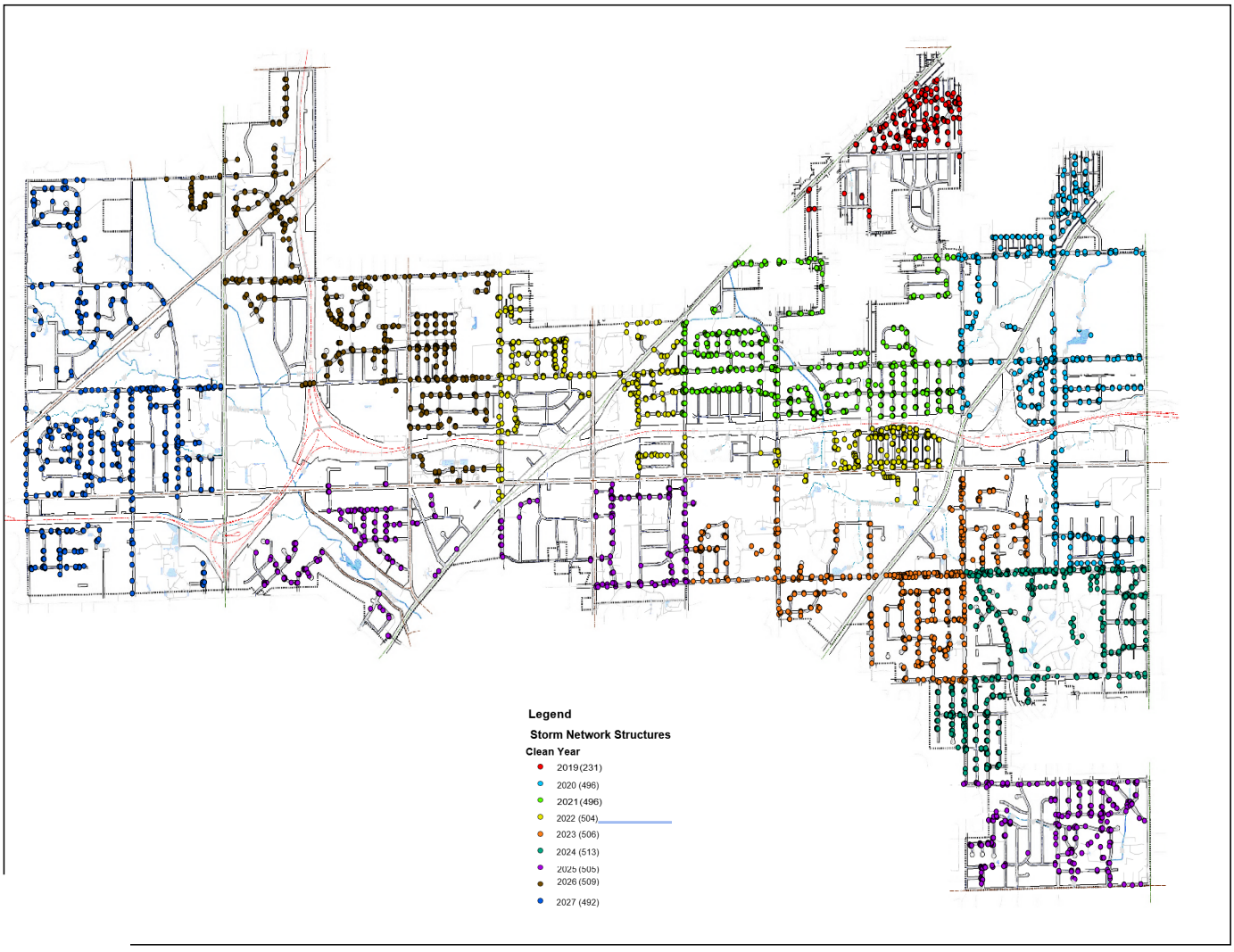
Appendix A

STORM WATER POLLUTION

REDUCITON STREET SWEEPING PLAN



APPENDIX B


Legend
Storm Network Structures
Clean Year
2019 (231)
2020 (496)
2021 (496)
2022 (504)
2023 (506)
2024 (513)
2025 (505)
2026 (509)
2027 (492)