

CITY OF PEWAUKEE
ANNUAL REPORT TO
THE DEPARTMENT OF NATURAL RESOURCES
IN ACCORDANCE WITH
NR216 PERMIT REQUIREMENTS

SUBMITTED MARCH 22, 2023

Illicit Discharge Detection and Elimination/Spills Response Program

Description of Program

The purpose of the Illicit Discharge Detection and Elimination program as well as the Spills Response program is to prevent harmful substances from entering the City's Municipal Separate Storm Sewer System (MS4) and being discharged to waters of the state. The Illicit Discharge Detection and Elimination program incorporates field screening procedures of 20 major outfalls for the purpose of detecting, investigating, and eliminating discharges to the MS4 system which are not entirely composed of storm water. The Spills Response program is a procedure for responding to, investigating and remediating material spills which could enter the City's MS4 system.

Measurable Goals

Perform field screening of the City's major outfalls to determine if illicit discharges are occurring, document the findings, trace any illicit discharges to the source and have the source removed. The measurable goal of the Spills Response program is to document and report on the spills reported to the City and to ensure the spills are mitigated.

Results Achieved

City staff performed biannual field screening of the 20 major outfalls identified in its plan. There were no illicit discharges detected during the field screening program.

The City of Pewaukee Fire Department (PFD) responded to 22 spills in the past reporting year; sixteen of these occurred either on Waukesha County Highway or Wisconsin State Highway property, three occurred in the Village of Pewaukee and three occurred in the City of Pewaukee. The three incidents occurring in the City of Pewaukee all involved leaked fluids from either parked vehicles or vehicles that were in an accident. All three of the spills were minor and required a total of 13 gallons of oil dry to clean up the spill.

City Staff responded to one illicit discharge during the reporting year. City Staff were notified of the discharge by the Wisconsin Department of Natural Resources (WDNR) on March 23, 2022, that a storage tank at N21W23560 Ridgeview Parkway had overflowed and discharged to a private storm water management pond through the sites storm water drainage system. Approximately 630 gallons of wastewater containing a mixture of cleaning agents and vegetable oil was discharged. Representatives of the business reported the spill to the WDNR and worked with a local contractor to contain the material in the pond and remove it.

Describe Any Planned Changes to the Program

In conjunction with the requirements stemming from the WDNR's audit of the MS4 program, the City entered into a contract with AECOM to prepare a city-wide comprehensive storm water management plan. The planning effort will include a re-evaluation of the IDDE dry weather screening outfalls and an updated MS4 map. The program re-evaluation will be consistent with the recommendations provided in the WDNR program guidance document 3800-2012-01. The planning effort is anticipated to be completed in late 2024. Attachment B includes maps identifying the outfall locations monitored since the program's inception.

Construction Site Pollutant Control

Description of Program

The City regulates land disturbing activity according to Chapters 14 and 19 of the Municipal code. Chapter 14 of the Municipal Code pertains to the design, construction, alteration, demolition and moving of buildings and structures within the City and associated land disturbing construction activities. The requirements of this chapter are regulated and enforced by the City's Building Inspection Department. Chapter 19 of the Municipal Code pertains to construction site erosion control, post construction site storm water management and illicit discharges. Regulation and enforcement of the requirements of this chapter are conducted by the City's Engineering Department. The construction site erosion control requirements of Chapter 19 of the Municipal Code are consistent with the provisions of NR 216 and the performance standards of NR 151 of the Administrative Code.

Measurable Goals

The Engineering Department and its consultants review proposed developments for conformance with the erosion control requirements of Chapter 19 of the Municipal Code and issues a Certificate of Permit Coverage for development plans meeting the requirements of the ordinance. The Department and its consultants also conduct weekly and post 0.5-inch rainfall event compliance inspections of permitted construction sites for the purpose of maintaining compliance with Chapter 19 of the Municipal Code. A report is generated for each inspection performed and provided to the owner/designated representatives of the permitted site. The compliance inspection reports detail any maintenance to be performed, deficiencies noted and/or additional BMP's required to maintain compliance. Sites which are out of compliance are subject to enforcement which can include issuing Notices of Noncompliance, Notices of Violations, issuing fines, posting stop work orders, requiring enforcement conferences and revoking permits.

The Building Inspection Department issues erosion control permits for land disturbing construction activities associated with buildings and structures. Inspections of the erosion control best management practices are performed on sites with disturbances less than 1 acre in area. Inspections are performed each time the Building Inspector is on a site having an erosion control permit.

Results Achieved

The Engineering Department issued four erosion control permits for new development and conducted approximately 788 compliance inspections in 2022. Fourteen Notices of Noncompliance and four Notices of Violation were issued during the reporting year. This resulted in recommendations for fines of approximately \$4000.00. City Staff (not including consultant time) spent approximately 238 hours conducting compliance inspections, reviewing erosion control plans and reports, and enforcing the City's erosion control ordinance.

The Building Inspection Department conducted approximately 44 erosion bond and 171 erosion control inspections in 2022.

Describe Any Planned Changes to the Program

None at this time.

Post-Construction Site Storm Water Management

Description of Program

The City regulates post-construction site storm water management according to Chapter 19 of the Municipal code. The post-construction storm water management requirements are compliant with the applicable provisions of NR 216 and the performance standards contained in NR 151 of the Administrative Code regarding infiltration and TSS reductions. However, the City's ordinance is more restrictive than the performance standards contained in NR 151 in terms of the pre- and post-developed discharge rates from the developed site. The City's ordinance requires the peak discharge from the 1, 2, 10 and 100-year storm events from the post developed site be at or below the peak discharge rates from the site under pre-settlement conditions. Post construction site storm water management practices are required to be maintained and the City requires a maintenance agreement be executed and recorded at Waukesha County Register of Deeds for the perpetual maintenance of the practices.

Measurable Goals

The City reviews proposed development plans for conformance with the post-construction site storm water management requirements of Chapter 19 of the Municipal Code and issues a Certificate of Permit Coverage for development plans meeting the requirements of the ordinance.

Results Achieved

The City issued four permits for post-construction site discharges from new development in 2022. City Staff and consultants have conducted reviews of submittals for nine proposed developments and five existing developments for compliance with the post-construction site storm water management requirements of the Municipal Code during the reporting year. Staff also conducted inspections of 8 City owned BMP's and 2 privately owned BMP's during the reporting year. This program accounted for approximately 140 hours of City Staff time during the reporting period.

Describe Any Planned Changes to the Program

The City has been in the process of documenting its storm water management program and formalizing procedures for inspection and tracking of existing storm water management facilities built to comply with Chapter 19 of the Municipal Code and NR 216 and NR 151 of the State Statutes. This work has been delayed by the review, permitting and enforcement of the City's construction site erosion control and post-construction site storm water management ordinance. To date the bulk of the program has been documented and forms have been created for the inspection of various storm water management practices. Remaining work items include documenting the procedures for the inspection of the existing storm water management facilities, and a program for the tracking of inspections, maintenance, and enforcement of the post-construction site BMP's. City Staff continue to locate and compile available data on the existing storm water management facilities that have been constructed over the years. This data will aid in the inspection of these facilities and determine what agreements are in place for the maintenance of these facilities.

Pollution Prevention

The City is required to implement a variety of programs under the Pollution Prevention criteria identified within its WPDES permit. These programs include:

1. Inspection, maintenance, and inventory of post-construction site storm water management facilities.
2. Catch basin cleaning program.
3. Street sweeping program.
4. Winter road management program.
5. Leaf management program.
6. SWPPP for municipal facilities.
7. Nutrient management plan for municipal properties with pervious surfaces over 5 acres.
8. Management procedures for unplanned water main discharges.
9. Other Reportable Results.

The following will provide a brief summary of each of the above programs, identify the measurable goals (if any), the results achieved and any planned program changes or improvements.

Inspection, Maintenance, and Inventory of Post-Construction Site Storm Water Management Facilities

Description of Program

The program consists of an inventory of the existing storm water management facilities and ensuring the facilities are properly maintained to function according to the performance standards used for the design of the facility. The City owns eight municipal facilities between Wagner Park, the City Hall Campus, and the Pewaukee Sports Complex. An additional five facilities were constructed in 2022. These include two wet detention facilities at the new highway garage on Green Road and 3 biofiltration facilities as a part of the Kathryn Court Drainage Improvements project and the Duplainville Road Reconstruction project.

Measurable Goals

In 2010 the City identified through aerial photographs approximately 192 facilities within the municipal boundaries that were potential storm water BMP's implemented to control post-developed discharges and/or provide for TSS reduction. A significant amount of information still needs to be collected from available City records in order to complete the inventory and conduct inspections of these facilities.

The inventory includes such items as the location, general condition, age, and ownership of each facility; whether a long-term maintenance agreement exists for the facility; the general design of the facility; results of any previous inspections; and completion of any previously recommended maintenance and repairs.

The City is required to inspect and maintain the BMP's on municipal property that are necessary to meet the storm water management requirements for discharge and/or water quality at the time of construction. These facilities are located in Wagner Park (2 wet ponds and a biofiltration device), the Pewaukee Sports Complex (2 wet ponds, an infiltration pond, and a dry pond), and City Hall Campus Site (a biofiltration device).

Results Achieved

As indicated previously, City Staff have begun and continue to locate and compile available data on the existing storm water management facilities that have been constructed over the years. To date, approximately 30 pond asbuilts, 37 maintenance agreements and 100 storm water management plans have been located and scanned into the City's network.

All eight municipal facilities were inspected by City Staff during the reporting period. Inspections of the City owned facilities indicated all three facilities at Wagner Park and the two wet ponds at the Sports Complex require maintenance. City Staff also conducted two inspections of privately owned storm water management ponds and received reports from private facility owners covering 17 inspections during the reporting period.

As a result of the inspection of the City owned facilities during the reporting year, plans are being prepared to improve the three facilities at Wagner Park. Additionally, the City is currently seeking a permit from the WDNR to repair the outlet structure for one of the private ponds for which the City has maintenance responsibility.

Describe Any Planned Changes to the Program

The completion of the inventory is still lagging due to the time requirements of other permit programs. As time allows staff will work on the completion of the inventory, preparation of inspection forms and the development of procedures for conducting and tracking inspections of the private facilities. This work element shares many of the same components which are being developed as a part of the Post Construction Site Storm Water Management Program. In 2023 the program will expand to include inspections of the new City owned facilities constructed in 2022.

Catch Basin Cleaning Program

Description of Program

The City identified 12 catch basins along Peterson Drive in 2005 to be inspected and cleaned annually when the program proposal was initially created. This list has been expanded to include: an additional 69 catch basins along Green Road which were installed as a part of a road construction project in 2013; and an additional 28 catch basins and manholes with sumps installed as a part of the reconstruction of Duplainville Road in 2022. This program has also been expanded to include the maintenance and repair of the City's existing storm sewer structures.

Measurable Goals

To ensure the continued function of the MS4 system and to remove sediment deposits from the system.

Results Achieved

Approximately 23 tons of solids were removed as a result of catch basin cleanings in 2022. Additionally, 53 storm sewer structures were repaired during the reporting period. Repairs were conducted through a combination of City Highway Staff and City contracted projects.

Describe Any Planned Changes to the Program

The program needs to be updated to include the catch basins installed along Green Road and Duplainville Road and to include the maintenance and repairs of the storm inlets and manholes that have been occurring annually over the last several years.

Street Sweeping Program

Description of Program

The City Highway Department is responsible for the sweeping of the City Streets. The current program consists of sweeping all City streets once in the spring (as soon as the snow melts) and sweeping once in the fall all City streets with a curb and gutter cross-section. City streets around the lake are swept more frequently in the fall to keep leaves out of the storms sewer system. Additionally, City crews sweep arterial streets once per week for 1.5 months in the spring (as soon as the snow cover permits). As of 2022, the City had approximately 94.4 miles (188.7 lane miles) of roadways, of which approximately 44 miles (88 lane miles) were of a rural cross-section and 50.4 miles (100.7 lane miles) were of an urban cross-section. An urban cross-section is typified as having curb and gutter on either side of the street while a rural cross-section is typified as having gravel shoulders and open ditches on either side of the street. Approximately 1.9 miles (3.8 lane miles) of municipal roadways were designated as arterial.

Measurable Goals

To remove sediment and debris from the road surface and gutter line prior to being transported by runoff into the City's MS4 system.

Results Achieved

Approximately 243 hours were spent sweeping 1522 lane miles of streets in 2022. This effort removed approximately 52 tons of solids prior to entering into the City's MS4 system.

Describe Any Planned Changes to the Program

None at this time.

Winter Road Management Program

Description of Program

The winter road management program prescribes the methodologies and guidelines for the removal and control of snow and ice buildup on the City's streets. The City Highway Department is responsible for establishing the procedures, methods, equipment, and labor to implement the program. Details of the program evolve coincident with the evolution of technology and experience within the department regarding snow and ice removal.

Measurable Goals

The goal of the program is to maintain the roadway in a safe driving condition within the limitations of resources, climactic conditions, preservation of the driving surface and environmental concerns. In balancing these concerns, the department is recommended to strive for "passable roadway" conditions on the driving lanes during the storm event. A "passable roadway" is defined as a roadway surface that is free from drifts, snow ridges and as much ice and snowpack as is practical and can be traveled safely at reasonable speeds.

Secondary to maintaining safe driving conditions is the reduction of the amount of salt used during a winter storm event. To this extent the City has invested in equipment which allows for the use of a salt brine for pre-wetting of salt or as a stand-alone pre-treatment of the pavement surface. As a stand-alone pre-treatment, salt brine helps to prevent ice/snow from bonding to the pavement surface thereby providing for easier removal during plowing operations. When used to pre-wet dry salt prior to application

to a pavement surface, the brine helps to maintain the salt on the pavement surface rather than be displaced into the ditch or curb line. In either case the salt brine is anticipated to reduce the amount of dry salt required to achieve a "passable roadway."

The equipment utilized by the Highway Department is calibrated annually. Salt applications are set based upon the ground speed of the vehicle and the temperature of the pavement. The brine solution used for pre-wetting the salt is set not to exceed 10 gallons per ton with 8 gallons per ton being typical.

City Staff from the Highway Department attend training periodically regarding winter management operations. The last training event was held in 2016 (Smart Salting Level 1) with seven members of the Highway Department attending.

Results Achieved

The Highway Department maintains records of each event during the winter season which includes the amount of product used, pertinent weather data, hours worked, number of trucks in service and other measurable data. These records are maintained for the purpose of evaluating the program on a yearly basis. Snowfall totals used in this evaluation are taken from the weather station at Milwaukee International Airport.

The amount of salt used for a given event or season is highly variable and dependent on a variety of conditions such as but not limited to: air temperature; pavement temperature; type of precipitation; intensity of storm; the miles of road to be maintained; and the number of events in a given year. It is therefore difficult to evaluate whether or not the City's salt application is reduced through the use of salt brines for pre-wetting or as a stand-alone pre-treatment from year to year. Table 1 summarizes the City's salt use for the winter seasons beginning with the 2010-2011 winter season. A typical salt brine solution is composed of 23.3 % salt which yields approximately 2.5 pounds of salt per gallon of brine.

The City implemented the use of salt brines with the 2011-2012 winter season. Prior to the 2011-2012 winter season combinations of salt and salt/sand were used in conjunction with plowing for removal of ice and snow from the municipal streets. As can be seen in Table 1, overall salt use in terms of tons/lane mile of roadway has generally been less since initiating the use of salt brines. However, this simplistic evaluation is a little misleading as it does not consider the severity of the winter season, or the effort required by road crews to maintain a "passable roadway."

The Wisconsin DOT has created a Winter Severity Index (WSI) which it utilizes in evaluating the severity of the winter season in relation to its winter management program. The index considers factors such as number of snow events, amount of snow, number of freezing rain events, storm durations, and number of incidents (frost runs, drifting and clean up). The State DOT developed the WSI in 1995. Prior to the 2013-2014 winter season, index values ranged from 0 to 100. Therefore, the higher the index value, the more severe the winter season and the lower the index value the milder the winter season. The State DOT revised the WSI in the 2013-2014 winter season to provide results which are scaled and compared to the average of the 5 previous winters; the value of which is set as 100. Therefore, values in excess of 100 indicate a severer than average winter and values less than 100 indicate a milder than average winter.

The statewide average WSI is shown in Table 2 for each winter season. Included in Table 2 are values for the WSI for Waukesha County as well. Previously, values for the Waukesha County WSI from 2010 to 2013 were only given in the previous index (weighted from 0 to 100) with the remainder provided in the revised index. The values shown for Waukesha County in Table 2 for those years before the revised index were extrapolated based upon the statewide average values which were available in both versions of the index.

Table 1. City of Pewaukee Salt Use for Winter Road Management.

Winter Season	Tons of Salt	Gallons of Salt Brine	Total Tons of Salt	Lane Miles of Roads	Tons of Salt/lane mile
2010-2011	3203*	NA	3203*	176.4	18.2
2011-2012	1540	14200	1558	176.6	8.8
2012-2013	3520	22679	3548	177.0	20.0
2013-2014	3160	11490	3174	176.8	18.0
2014-2015	2390	4800	2396	179.4	13.4
2015-2016	1865	5100	1871	183.0	10.2
2016-2017	2900	11225	2914	183.0	15.9
2017-2018	3365	5650	3372	184.3	18.3
2018-2019	3365	9070	3376	184.3	18.3
2019-2020	2450	7750	2460	184.3	13.4
2020-2021	2240	7819	2250	185.2	12.2
2021-2022	2060	4500	2066	185.2	11.2
2022-2023	2420	9845	2432	188.7	12.9

*Total includes salt and salt/sand mixture.

The approximate total snowfall per season and the number of measurable snow events are taken from the Mitchell International weather station in Milwaukee. The average snowfall is based upon the total snowfall for the season divided by the number of measurable events.

Figure 1 compares the Winter Severity Index for the statewide average and Waukesha County versus the salt usage for the City of Pewaukee and Waukesha County in tons of salt per lane mile. Overall, the WSI generally coincides with the amount of salt utilized per lane mile to maintain the City's streets in a passable condition for a winter season. The WSI for the 2022-2023 winter season will not be available until the State publishes its Annual Winter Maintenance Report, usually at the end of the year.

The statewide average WSI for the 2021-2022 winter season was 97.1 which indicates a relatively average winter season for the state as a whole. The WSI for Waukesha County on the other hand was 66 which indicates a milder than average winter for the county.

As of the writing of this report, the salt use for the 2022-2023 winter season is calculated to be 366 tons more than the previous season with approximately 2432 total tons of salt used. This translates to approximately 12.9 tons per lane mile of salt applied to City Streets which is 1.7 tons per lane mile more than the previous year. By comparison, Waukesha County was reported to have utilized approximately 14.1 tons of salt/lane mile for the 2021-2022 winter season which was 2.2 tons per lane mile more than the City of Pewaukee's application over the same period. The average application for the City of Pewaukee from beginning the use of salt brines in the 2011-2012 winter season to 2021-2022 winter season is approximately 14.2 tons per lane mile. This is approximately 1.7 tons per lane mile less than the average 15.9 tons per lane mile for Waukesha County for the same time period. The current average for the City

based on salt use for this season is 12.9 tons per lane mile. The winter management summary tables for last 5 years of the program are included as Attachment C.

Describe Any Planned Changes to the Program

None at this time.

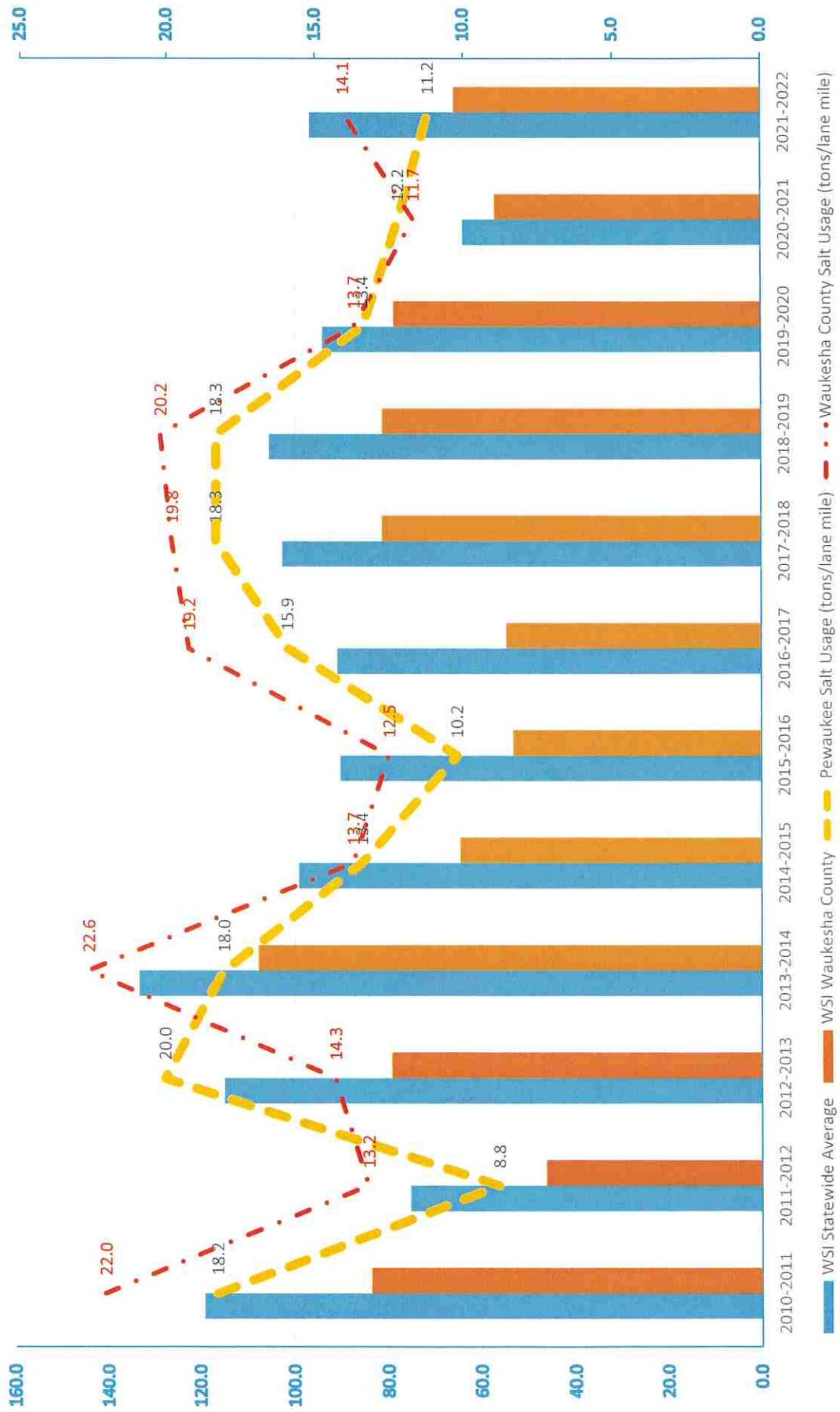
Table 2. Comparison of Winter Seasons and City of Pewaukee Salt Use.

Winter Season	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Approx. Total Snowfall (inches)	61.9	29.6	45.0	63.4	43.0	39.1	37.6	46.7	55.8	36.7	47.8	23.5	41.4
Number of Measurable Events	45	26	31	52	38	25	23	36	40	31	29	22	26
Average Snowfall per event (inches)	1.4	1.1	1.5	1.2	1.1	1.6	1.6	1.3	1.4	1.2	1.7	1.1	1.6
Total Tons of Salt	3203*	1558	3548	3174	2396	1881	2914	3372	3376	2460	2250	2066	2432
Total Hours Worked	NA	596	1272	1863	903	812	1171	1215	1564	1213	1230	1123	1415
Tons of Salt per lane mile of Road	18.2	8.8	20.0	18.0	13.4	10.2	15.9	18.3	18.3	13.4	12.2	11.2	12.9
Average Pavement Temp. (degrees F)	NA	NA	NA	19.8	20.1	25.6	25.3	23.1	26.4	28.3	22.8	21.0	26.1
WisDOT Statewide WSI	119.2	75.4	115.1	133.6	99.3	90.4	91.1	102.9	105.7	94.3	64.1	97.1	**
WSI for Waukesha County	83.7 ^a	46.3 ^a	79.4 ^a	107.9	64.6	53.2	54.7	81.5	81.5	79.1	57.2	66.0	**
Waukesha County Tons of Salt per Lane mile	22.0	13.2	14.3	22.6	13.7	12.5	19.2	19.8	20.2	13.7	11.7	14.1	**

*Total includes salt and salt/sand mixture. **Not determined at the time of reporting. ^aExtrapolated values to statewide index.

^bCorrected WSI from previous report.

Figure 1 Winter Severity Index versus Salt Usage



Leaf Management Program

Description of Program

The City accepts leaves and grass clippings at the City Recycling Center drop off site located on the lower level of the Pewaukee City Hall campus. Material collected at the site is taken to a facility in Menomonee Falls for composting. The City's waste hauler will also pick up leaves and grass clippings for a fee.

Measurable Goals

To provide an alternative means of disposing of leaves and grass clippings for the City residents as opposed to burning or dumping the debris into the City's right-of-way or ditches.

Results Achieved

In previous years yard waste was broken down into categories to determine the mass of leaves taken to the yard waste site. Similar to last year's reporting by Waukesha County, the mass of leaves collected is included in the total yard waste collected which was 705 tons of material. The City's waste hauler reported collecting approximately 6.75 tons of yard waste in 2022.

Describe Any Planned Changes to the Program

None at this time.

SWPPP for Municipal Facilities

Description of Program

The City had prepared an update to its Evaluation of Public Works Yard in 2011. The goal of the evaluation was to identify potential sources of non-point pollution and provide recommendations to mitigate these sources. The City provided additional information in the 2015 annual report regarding planned projects to occur within the City "campus" site which would impact operations on site as well as potentially how storm water is managed. These planned projects included the construction of a new water tower, the construction of a new salt storage facility and repairs to the City Hall and highway garage. To date the new water tower and the repairs to City Hall and highway garage have been completed.

Measurable Goals

The goal of the program is to reduce non-point pollutant loadings from the City "campus" site. A colony of phragmites, an invasive plant, was identified in the southeast corner of the along the railroad right-of-way.

Results Achieved

An inspection of the Public Works Yard was performed in 2022.

Describe Any Planned Changes to the Program

The City began the construction of a new highway garage on the northwest corner of Green Road and Duplainville Road in the fall of 2021. The new location will ultimately include a new salt storage facility, recycling location and refueling site. Completion of the highway garage is planned for spring of 2023 and the salt storage, recycling yard, and refueling site to be completed by fall 2023. The completion of the new highway garage and the revisions to the operations of the current City Hall Campus site will necessitate the preparation of a new SWPPP. The SWPPP for the new facility is anticipated to be

completed in 2023. Revisions to the current City Hall site SWPPP are anticipated to be completed once the new uses and operations for the site have been designated.

Nutrient Management Plan for Municipal Properties with Pervious Surfaces over 5 acres

Description of Program

The City has five parks with pervious areas over 5 acres: Balmer Park, Wagner Park, South Park, Nettesheim Park, and the Pewaukee Sports Complex. A formal nutrient management plan was prepared for the Pewaukee Sports Complex while it was under construction. The remaining parks do not have a formal plan as of yet.

The current practice for maintaining the turf areas in the City's park system is to contract with a company specializing in turf maintenance to assess the condition of the fields and to apply treatments as recommended. Treatments are typically composed of one or more of the following products: Dimension 2EW (a post emergence herbicide); a Urea Nitrogen-Potash fertilizer 25-0-5; a Urea Nitrogen-Potash fertilizer 17-0-5; Trupower 3 (a selective post emergence herbicide); and Cool Power (a selective post emergence herbicide). In addition, the infields of existing baseball fields receive a non-phosphorous fertilizer treatment (composed of a 33-0-5 NPK ratio) three times a year. Mowing of the established turf areas occurs on a weekly rotation with mowing of the baseball infields occurring up to three times a week if necessary.

Measurable Goals

The goal of the program is to reduce the amount of nutrients (namely phosphorous) applied to the turf areas and to apply only what is required to maintain a vigorous growth of vegetation.

Results Achieved

The City's current practices and ordinance bans the use of fertilizers containing phosphorous except for the establishment of new turf areas or if soil tests confirm phosphorous is required.

Describe Any Planned Changes to the Program

It was the recommendation of the WDNR from the 2021 program audit to develop a written turf management program which would include language that a nutrient management plan based on appropriate soil testing be conducted if nutrients containing phosphorous are applied to turf areas over 5 acres.

Management Procedures for Unplanned Water Main Discharges

Description of Program

The City is required by permit to develop a program to mitigate discharges of sediment to its MS4 system from unplanned water main discharges otherwise known as "water main breaks." The program was developed for Water and Sewer Utility staff who may be responding to such incidents. The priority for staff responding to a water main break is to locate the source of the discharge and to isolate it, or in layman's terms to "shut it off" as quickly as possible. Temporary erosion control measures, if required, can then be employed to prevent sediment from entering the MS4 system or waters of the State. The program identifies potential erosion control measures that can be employed to contain/limit the discharge of sediment from a water main break.

Measurable Goals

The goal of the program is to reduce the amount of sediment entering the City's MS4 system or a water of the State from an unplanned water main discharge.

Results Achieved

The City had four unplanned water main discharges last year resulting in an estimated, combined discharge of approximately 540,000 gallons of municipal water. Three of these unplanned discharges were related to work on City projects and one was related to the development of a subdivision.

Describe Any Planned Changes to the Program

None at this time.

Other Reportable Results

Roadways within the City are comprised of a combination of rural cross sections and urban cross sections. Rural cross sections include roadside ditches to collect storm water runoff along with gravel shoulders and paved travel lanes. Urban cross sections include storm sewers and curb and gutter to collect storm water runoff and paved travel lanes. The City of Pewaukee contains approximately 94.4 lineal miles of roads with approximately 44 miles of roads having a rural cross-section. Roadside swales need to be periodically cleaned of accumulated sediment to function properly. Each year the City's Highway Department cleans a portion of its roadside swales of sediment. Last year the Highway Department cleaned approximately 1130 feet of roadside swales which netted an estimated 210 tons of soil.

In addition to the storm sewer structures repaired or replaced during the year as reported under the Catch Basin Cleaning Program, the City cleaned and televised approximately 674 lineal feet of storm sewer, lined approximately 2290 lineal feet of storm sewer with a cured in place pipe liner, replaced 384 lineal feet of damaged storm sewer and replaced approximately 202 lineal feet of culverts.

Worksheets for the Fiscal Analysis required as a part of the City's annual report are included in Attachment D.

Members of the City's Engineering Staff attended multiple erosion control and storm water management workshops and seminars during 2022. These included:

- 2022 Waukesha County Storm Water Management Workshop, April 13-14, 2022 (2 attendees)
- NASECA-WI's 19th Annual Conference and Trade Show, February 9-10, 2022 (2 attendees)
- WAFSCM 2022 Annual Conference, October 20, 2022 (1 attendee)
- Calibrating Winter Operations, October 27, 2022 (1 attendee)
- Climate Change Considerations for Asset Management, May 19, 2022 (2 attendees)
- Using Technology and Data to Manage Storm Events, February 24, 2022 (2 attendees)
- Lessons Learned from Green Infrastructure Designs and Installations, May 6, 2022 (1 attendee)
- Climate Change, Infrastructure Design, and Ethics, November 3, 2022 (1 attendee)

The Wisconsin DNR completed an audit of the City's Illicit Discharge, Detection & Elimination Program, Construction Site Erosion Control Program and Pollution Prevention Program on September 8, 2021. In general, the WDNR required:

- The City revises and submits to the WDNR a new MS4 outfall map and re-evaluates the screening locations for illicit discharge monitoring and screening.

- The City identifies the BMP's utilized in the City's pollutant reduction analysis and submits this information to the WDNR.
- The City develops a schedule, maintenance plan or other form of commitment to City owned or operated BMP maintenance.

The City anticipates complying with the first two requirements through the preparation of a new comprehensive storm water management plan. A copy of the City's written response is attached as Attachment E. Compliance with the last requirement will result in a pond improvement project as described below.

Inspection of the City ponds at Wagner Park during the reporting period noted deficiencies at each of the three facilities which will require more effort than can be done with City forces. City Staff have worked with its consultant during the reporting period to prepare plans to make improvements to each of the facilities in the park in 2023. A copy of the draft plan set is included as Attachment F.

The City entered into a contract with AECOM in October 2022 to develop and prepare the comprehensive storm water management plan. The plan will recommend effective storm water management measures, based upon existing and planned land use conditions. The plan will identify existing storm water drainage problems and recommend cost effective, constructible solutions; identify measures required to avoid the creation of future storm water drainage problems resulting from development; provide estimates of existing pollutant loadings of TSS and total phosphorous; and recommend measures to mitigate the effects of nonpoint source pollution on water quality. Additionally, the plan will update the City's Municipal Separate Storm Sewer System (MS4) Map and include a re-evaluation of the screening locations for the City's major MS4 outfalls as a component of the Illicit Discharge Detection and Elimination (IDDE) program. A copy of AECOM's proposal is included as Attachment G.

Public Education and Outreach and Public Involvement and Participation Programs

Description of Program

The City of Pewaukee along with other members of the Upper Fox River Watershed Group contract with Waukesha County to implement the public education and outreach and public involvement and participation programs as required by the Group WPDES permit. The County organizes the plan based upon a target audience. For each target audience a set of activities and goals are defined.

Attachment H contains the County's 2022 Activity Summary Report identifying the key components of last year's plan, the measurable goals and the results achieved. Also included is a copy of the County's proposed Three-Year Information and Education Plan for the City of Pewaukee.

City Staff work with our elected and Municipal officials regarding the City's municipal storm water discharge permit through discussions regarding: the function and need of the City's Storm Water Utility; budget hearings and discussions; discussion regarding potential changes to the City's MS4 permit; changes to the City's post construction site storm water management and construction site erosion control ordinance; discussions related to capital improvement projects that impact storm water discharges; and discussions regarding enforcement of the City's post construction site storm water management and construction site erosion control ordinance. As an example, the City's MS4 Annual Report was presented to the Public Works Committee on March 30, 2022, and the Common Council on April 4, 2022. Additionally, the proposed changes to the Waukesha County Information and Education program and the Contract for the City's Comprehensive Storm Water Management Plan were brought forth for discussion at the September 22, 2022, Public Works Committee meeting.

City Staff knowledgeable of the MS4 permit requirements disseminate this knowledge internally as well as to the public through answering broad questions regarding the operations and maintenance of storm water BMP's; questions regarding what storm water utility fees are used for; answering drainage concerns; and discussions regarding how permit requirements impact internal job functions and the burden of reporting requirements. Beginning in 2022, the Public Works Department began holding a bi-annual meeting to discuss current and upcoming projects; address concerns and questions from Staff; provide feedback; and to review operations.

Beginning in 2022 the Public Works Department began a biannual newsletter which is sent to all the property owners in the City and includes information on topics such as storm water pollution, Waukesha County's Adopt-A-Drain program, and winter salt usage. Information is also posted on the City's website such as tips regarding grass clippings (<https://www.cityofpewaukee.us/320/Tips-from-DPW>) as well as postings to the City's Facebook page (<https://www.facebook.com/cityofpewaukee>). Copies of the newsletter and grass clippings flier can be found in Attachment I.

City Engineering Staff have ongoing discussions educating contractors, developers and engineers regarding: the requirements of the City's construction site erosion control and post construction site storm water management ordinance; the City's Technical Standards; WDNR guidance documents, permit conditions and Technical Standards; and enforcement of post construction site storm water management and erosion control. The City's Construction Site Erosion Control, Post-construction Storm Water Management and Illicit Discharges Ordinance and Technical Standards are posted on the City's website.

Attachment A

WDNR eReporting System Annual Report

Submittal of Annual Reports and Other Compliance Documents for Municipal Separate Storm Sewer System (MS4) Permits

NOTE: Missing or incomplete fields are highlighted at the bottom of each page. You may save, close and return to your draft permit as often as necessary to complete your application. After 120 days your draft is **deleted**.

Form 3400-224(R8/2021)

Reporting Information :

Will you be completing the Annual Report or other submittal type? Annual Report Other

Project Name: 2022 Annual Report

County: Waukesha

Municipality: Pewaukee, City

Permit Number: S050105

Facility Number: 30726

Reporting Year: 2022

Is this submittal also satisfying an Urban Nonpoint Source Grant funded deliverable? Yes No

Required Attachments and Supplemental Information

Please complete the contents of each tab to submit your MS4 permit compliance document. The information included in this checklist is necessary for a complete submittal. A complete and detailed submittal will help us review about your MS4 permit document. To help us make a decision in the shortest amount of time possible, the following information must be submitted:

Annual Report

- Review related web site and instructions for [Municipal storm water permit eReporting](#) [Exit Form]
- Complete all required fields on the annual report form and upload required attachments
- Attach the following other supporting documents as appropriate using the attachments tab above
 - Public Education and Outreach Annual Report Summary
 - Public Involvement and Participation Annual Report Summary
 - Illicit Discharge Detection and Elimination Annual Report Summary
 - Construction Site Pollution Control Annual Report Summary
 - Post-Construction Storm Water Management Annual Report Summary
 - Pollution Prevention Annual Report Summary
 - Leaf and Yard Waste Management
 - Municipal Facility (BMP) Inspection Report
 - Municipal Property SWPPP
 - Municipally Property Inspection Report

- Winter Road Maintenance
 - Storm Sewer Map Annual Report Attachment
 - Storm Water Quality Management Annual Report Attachment
 - TMDL Attachment
 - Storm Water Consortium/Group Report
 - Municipal Cooperation Attachment
 - Other Annual Report Attachment

- Attach the following permit compliance documents as appropriate using the attachments tab above
 - Storm Water Management Program
 - Public Education and Outreach Program
 - Public Involvement and Participation Program
 - Illicit Discharge Detection and Elimination Program
 - Construction Site Pollutant Control Program
 - Post-Construction Storm Water Management Program
 - Pollution Prevention Program
 - Municipal Storm Water Management Facility (BMP) Inventory
 - Municipal Storm Water Management Facility (BMP) Inspection and Maintenance Plan
 - Total Maximum Daily Load documents *(*if applicable, see permit for due dates.)*
 - TMDL Mapping*
 - TMDL Modeling*
 - TMDL Implementation Plan*
 - Fecal Coliform Screening Parameter *
 - Fecal Coliform Inventory and Map *(S050075-03 general permittees Appendix B B.5.2 – document due to the department by March 31, 2022)*
 - Fecal Coliform Source Elimination Plan *(S050075-03 general permittees Appendix B - document due to the department by October 31,2023]*

- Sign and Submit form

Municipal Contact Information- Complete

Notice: Pursuant to s. NR 216.07(8), Wis. Adm. Code, an owner or operator of a Municipal Separate Storm Sewer System (MS4) is required to submit an annual report to the Department of Natural Resources (Department) by March 31 of each year to report on activities for the previous calendar year ("reporting year"). This form is being provided by the Department for the user's convenience for reporting on activities undertaken in each reporting year of the permit term. Personal information collected will be used for administrative purposes and may be provided to the extent required by Wisconsin's Open Records Law [ss. 19.31-19.39, Wis. Stats.].

Note: Compliance items must be submitted using the Attachments tab.

Municipality Information

Name of Municipality: Pewaukee, City

Facility ID # or (FIN): 30726

Updated Information: Check to update mailing address information

Mailing Address: W240N3065 Pewaukee Road

Mailing Address 2:

City: Pewaukee, City

State: WI

Zip Code: 53072 xxxxx or xxxxx-xxxx

Primary Municipal Contact Person (Authorized Representative for MS4 Permit)

The "Authorized Representative" or "Authorized Municipal Contact" includes the municipal official that was charged with compliance and oversight of the permit conditions, and has signature authority for submitting permit documents to the Department (i.e., Mayor, Municipal Administrator, Director of Public Works, City Engineer).

Select to **create new** primary contact

First Name: Magdelene

Last Name: Wagner

Select to **update** current contact information

Title: Director of Public Works

Mailing Address: W240N3065 Pewaukee Road

Mailing Address 2:

City: Pewaukee

State: WI

Zip Code: 53072-4044 xxxxx or xxxxx-xxxx

Phone Number: 262-691-0804 Ext: xxx-xxx-xxxx

Email: wagner@pewaukee.wi.us

Additional Contacts Information (Optional)

- I&E Program
- IDDE Program

**Individual with responsibility for:
(Check all that apply)**

- IDDE Response Procedure Manual
- Municipal-wide Water Quality Plan
- Ordinances
- Pollution Prevention Program
- Post-Construction Program
- Winter roadway maintenance

First Name: Richard

Last Name: Wirtz

Title: Chief Engineer - Uti

Mailing Address: W240N3065 Pewaukee Road

Mailing Address 2:

City: Pewaukee

State: WI

Zip Code: 53072 xxxxx or xxxxx-xxxx

Phone Number: 262-691-0804 Ext: xxx-xxx-xxxx

Email: wirtz@pewaukee.wi.us

Municipal Billing Contact Person (Authorized Representative for MS4 Permit)

Select to **create new** Billing contact

First Name: Magdelene

Last Name: Wagner

Select to **update** current contact information

Title: Director of Public Works

Mailing Address: W240N3065 Pewaukee Rd

Mailing Address 2:

City: Pewaukee

State: WI

Zip Code: 53072 xxxxx or xxxxx-xxxx

Phone Number: 262-691-0804 Ext: xxx-xxx-xxxx

Email: wagner@pewaukee.wi.us

1. Does the municipality rely on another entity to satisfy some of the permit requirements?

Yes No

Public Education and Outreach Waukesha County

Public Involvement and Participation Waukesha County

Illicit Discharge Detection and Elimination

Construction Site Pollutant Control

Post-Construction Storm Water Management

Pollution Prevention

2. Has there been any changes to the municipality's participation in group efforts towards permit compliances (i.e., the municipality has added or dropped consortium membership)?

Yes No

Minimum Control Measures- Section 1 : Complete**1. Public Education and Outreach**

- a. Does MS4 conduct any educational efforts or events independently (not with a group) Yes
 No
- b. How many total educational events were held during the reporting year:
- c. The permit requires that both passive and interactive mechanisms are utilized. How many interactive mechanisms were used during the reporting year?

Topics Covered	Target Audience
<input checked="" type="checkbox"/> Illicit discharge detection and elimination <input checked="" type="checkbox"/> Household hazardous waste disposal/pet waste management/vehicle washing <input checked="" type="checkbox"/> Yard waste management/pesticide and fertilizer application <input checked="" type="checkbox"/> Stream and shoreline management <input checked="" type="checkbox"/> Residential infiltration <input type="checkbox"/> Construction sites and post-construction storm water management <input checked="" type="checkbox"/> Pollution prevention <input checked="" type="checkbox"/> Green infrastructure/low impact development <input type="checkbox"/> Other: <input type="text"/>	<input checked="" type="checkbox"/> General Public <input checked="" type="checkbox"/> Public Employees <input checked="" type="checkbox"/> Residents <input type="checkbox"/> Businesses <input type="checkbox"/> Contractors <input type="checkbox"/> Developers <input type="checkbox"/> Industries <input checked="" type="checkbox"/> Public Officials <input type="checkbox"/> Other

Topics Covered	Target Audience
<input type="checkbox"/> Illicit discharge detection and elimination <input type="checkbox"/> Household hazardous waste disposal/pet waste management/vehicle washing <input type="checkbox"/> Yard waste management/pesticide and fertilizer application <input type="checkbox"/> Stream and shoreline management <input type="checkbox"/> Residential infiltration <input checked="" type="checkbox"/> Construction sites and post-construction storm water management <input type="checkbox"/> Pollution prevention <input type="checkbox"/> Green infrastructure/low impact development <input type="checkbox"/> Other: <input type="text"/>	<input type="checkbox"/> General Public <input checked="" type="checkbox"/> Public Employees <input type="checkbox"/> Residents <input type="checkbox"/> Businesses <input checked="" type="checkbox"/> Contractors <input checked="" type="checkbox"/> Developers <input type="checkbox"/> Industries <input checked="" type="checkbox"/> Public Officials <input type="checkbox"/> Other

- d. Will additional information/summary of education events be attached to the annual report? Yes
 No

If no, please provide additional comment in the brief explanation box below. *Limit response to 250 characters and/or attach supplemental information on the attachments page.*

Minimum Control Measures - Section 2 : Complete**2. Public Involvement and Participation**

a. Permit Activities. Complete the following information on Public Involvement and Participation Activities related to storm water. Select the Delivery Mechanism that best describes how the permit activities were conveyed to your population. Use the Add Event to add additional entries.

Event Start Date	3/31/2022		
Project/Event Name	2021 MS4 Annual Report		
Delivery Mechanism	Citizen committee meeting		
Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)
<input checked="" type="checkbox"/> MS4 Annual Report <input type="checkbox"/> Storm Water Management Program <input type="checkbox"/> Storm Water related ordinance <input type="checkbox"/> Other: <input type="text"/>	<input checked="" type="checkbox"/> General Public <input type="checkbox"/> <input type="checkbox"/> Public Employees <input type="checkbox"/> Residents <input type="checkbox"/> Businesses <input type="checkbox"/> Contractors <input type="checkbox"/> Developers <input type="checkbox"/> Industries <input checked="" type="checkbox"/> Public Officials <input type="checkbox"/> Other	1 - 10	<input type="radio"/> Yes <input checked="" type="radio"/> No
Event Start Date	4/4/2022		
Project/Event Name	2021 MS4 Annual Report		
Delivery Mechanism	Government Event (Public Hearing, Council Meeting, etc)		
Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)
<input checked="" type="checkbox"/> MS4 Annual Report <input type="checkbox"/> Storm Water Management Program <input type="checkbox"/> Storm Water related ordinance <input type="checkbox"/> Other: <input type="text"/>	<input checked="" type="checkbox"/> General Public <input type="checkbox"/> <input type="checkbox"/> Public Employees <input type="checkbox"/> Residents <input type="checkbox"/> Businesses <input type="checkbox"/> Contractors <input type="checkbox"/> Developers <input type="checkbox"/> Industries <input checked="" type="checkbox"/> Public Officials <input type="checkbox"/> Other	1 - 10	<input type="radio"/> Yes <input checked="" type="radio"/> No
Event Start Date	9/22/2022		
Project/Event Name	City Wide Storm Water Management Plan & 2023-2026 County I&E Work Plan		
Delivery Mechanism	Citizen committee meeting		
Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)
<input type="checkbox"/> MS4 Annual Report <input type="checkbox"/> Storm Water Management Program <input type="checkbox"/> Storm Water related ordinance <input checked="" type="checkbox"/> Other: <input type="text"/>	<input checked="" type="checkbox"/> General Public <input type="checkbox"/> <input type="checkbox"/> Public Employees <input type="checkbox"/> Residents <input type="checkbox"/> Businesses <input type="checkbox"/> Contractors	1 - 10	<input type="radio"/> Yes <input checked="" type="radio"/> No

City Wide SMP and I&E Work Plan	<input type="checkbox"/> Developers <input type="checkbox"/> Industries <input checked="" type="checkbox"/> Public Officials <input type="checkbox"/> Other		
---------------------------------	--	--	--

b. Volunteer Activities. Complete the following information on Public Involvement and Participation Activities related to storm water. Select the Delivery Mechanism that best describes how volunteer activities were conveyed to your population. Use the Add Event to add additional entries.

Event Start Date	5/1/2022 <input type="checkbox"/> NA (Individual Permittee).
Project/Event Name	Citizen Stream Monitoring
Delivery Mechanism	Other hands-on event

Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)
Volunteer Opportunity	<input checked="" type="checkbox"/> General Public <input type="checkbox"/> Public Employees <input checked="" type="checkbox"/> Residents <input type="checkbox"/> Businesses <input type="checkbox"/> Contractors <input type="checkbox"/> Developers <input type="checkbox"/> Industries <input type="checkbox"/> Public Officials <input type="checkbox"/> Other	11-50	<input checked="" type="radio"/> Yes <input type="radio"/> No

Event Start Date	1/1/2022 <input type="checkbox"/> NA (Individual Permittee).
Project/Event Name	Adopt-a-Drain
Delivery Mechanism	Other hands-on event

Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)
Volunteer Opportunity	<input checked="" type="checkbox"/> General Public <input type="checkbox"/> Public Employees <input checked="" type="checkbox"/> Residents <input type="checkbox"/> Businesses <input type="checkbox"/> Contractors <input type="checkbox"/> Developers <input type="checkbox"/> Industries <input type="checkbox"/> Public Officials <input type="checkbox"/> Other	101 +	<input checked="" type="radio"/> Yes <input type="radio"/> No

Event Start Date	2/3/2022 <input type="checkbox"/> NA (Individual Permittee).
Project/Event Name	Workshop - Multiple Topics Covered
Delivery Mechanism	Other hands-on event

Topics Covered	Target Audience	Estimated People Reached (Optional)	Regional Effort (Optional)
Volunteer Opportunity	<input checked="" type="checkbox"/> General Public <input checked="" type="checkbox"/> Public Employees <input checked="" type="checkbox"/> Residents <input type="checkbox"/> Businesses <input checked="" type="checkbox"/> Contractors <input checked="" type="checkbox"/> Developers <input type="checkbox"/> Industries <input checked="" type="checkbox"/> Public Officials <input checked="" type="checkbox"/> Other	101 +	<input checked="" type="radio"/> Yes <input type="radio"/> No

c. Brief explanation on Public Involvement and Participation reporting. *Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See attached City of Pewaukee Annual Report

Form 3400-224 (R8/2021)

Minimum Control Measures - Section 3 : Complete

3. Illicit Discharge Detection and Elimination

- a. How many total outfalls does the municipality have? Unsure
- b. How many outfalls did the municipality evaluate as part of their routine ongoing field screening program? Unsure
- c. From the municipality's routine screening, how many were confirmed illicit discharges? Unsure
- d. How many illicit discharge complaints did the municipality receive? Unsure
- e. From the complaints received, how many were confirmed illicit discharges? Unsure
- f. How many of the identified illicit discharges did the municipality eliminate in the reporting year (from both routine screening and complaints)? Unsure

(If the sum of 3.c. and 3.e. does not equal 3.f., please explain below.)

- g. How many of the following enforcement mechanisms did the municipality use to enforce its illicit discharge ordinance? Check all that apply and enter the number of each used in the reporting year. Unsure

- Verbal Warning
- Written Warning (including email)
- Notice of Violation
- Civil Penalty/ Citation

Additional Information: Parcel owner self reported spill/discharge to DNR and initiated clean...

h.

Brief explanation on Illicit Discharge Detection and Elimination reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See attached City of Pewaukee Annual Report

Form 3400-224 (R8/2021)

Minimum Control Measures - Section 4 : Complete

4. Construction Site Pollutant Control

- a. How many total construction sites with one acre or more of land disturbing construction activity were active at any point in the reporting year? Unsure
- b. How many construction sites with one acre or more of land disturbing construction activity did the municipality issue permits for in the reporting year? Unsure
- c. How many erosion control inspections did the municipality complete in the reporting year (at sites with one acre or more of land disturbing construction activity)? Unsure
- d. What types of enforcement actions does the municipality have available to compel compliance with the regulatory mechanism? Check all that apply and enter the number of each used in the reporting year. Unsure

No Authority

Verbal Warning

Written Warning (including email)

Notice of Violation

Civil Penalty/ Citation

Stop Work Order

Forfeiture of Deposit

Other - Describe below

Enforcement Conference

- e. Brief explanation on Construction Site Pollutant Control reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See attached City of Pewaukee Annual Report

Form 3400-224 (R8/2021)

Minimum Control Measures - Section 5 : Complete

5. Post-Construction Storm Water Management

- a. How many sites with new structural storm water management Best Management Practice (BMP) have Unsure

received local approval ?

*Engineered and constructed systems that are designed to provide storm water quality control such as wet detention ponds, constructed wetlands, infiltration basins, grassed swales, permeable pavement,

b. Does the MS4 have procedures for inspecting and maintaining private storm water facilities? Yes No Unsure

c. If Yes, how many privately owned storm water management facilities were inspected in the reporting year ? Unsure

Inspections completed by private landowners should be included in the reported number.

d. Does the municipality utilize privately owned storm water management BMP in its pollutant reduction analysis? Yes No Unsure

e. If yes, does MS4 have maintenance authority on these privately owned BMPs? Unsure

f. How many municipally owned storm water management BMPs were inspected in the reporting year? Unsure

g. What types of enforcement actions does the municipality have available to compel compliance with the regulatory mechanism? Check all that apply and enter the number of each used in the reporting year. Unsure

- No Authority
- Verbal Warning
- Written Warning (including email)
- Notice of Violation
- Civil Penalty/ Citation
- Forfeiture of Deposit
- Complete Maintenance
- Bill Responsible Party
- Other - Describe below

Loss of storm water utility credit

e. Brief explanation on Post-Construction Storm Water Management reporting. *If marked 'Unsure' on any questions above, justify your reasoning. Limit your response to 250 characters and/or attach supplemental information on the attachments page.*

See attached City of Pewaukee Annual Report

Minimum Control Measures - Section 6 : Complete

6. Pollution Prevention

Storm Water Management Best Management Practice Inspections Not Applicable

a. Enter the total number of municipally owned or operated Unsure

structural storm water management best management practices.

- b. How many new municipally owned storm water management best management practices were installed in the reporting year? Unsure
- c. How many municipally owned storm water management best management practices were inspected in the reporting year? Unsure
- d. What elements are looked at during inspections (250 character limit)?

Embankments, outlets, vegetation, erosion, pre-treatment, accumulation of trash and debris, etc.

- e. How many of these facilities required maintenance? Unsure
- f. Brief explanation on Storm Water Management Best Management Practice inspection reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See attached City of Pewaukee Annual Report

Public Works Yards & Other Municipally Owned Properties (SWPPP Plan Review) Not Applicable

- g. How many municipal properties require a SWPPP? Unsure
- h. How many inspections of municipal properties have been conducted in the reporting year? Unsure
- i. Have amendments to the SWPPPs been made?
 Yes No Unsure
- j. If yes, describe what changes have been made. Limit response to 250 characters and/or attach supplemental information on the attachment page:

- k. Brief explanation on Storm Water Pollution Prevention Plan reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See attached City of Pewaukee Annual Report

Collection Services - Street Sweeping / Cleaning Program Not Applicable

- l. Did the municipality conduct street sweeping/cleaning during the reporting year?
 Yes No Unsure
- m. If known, how many tons of material was removed? Unsure
- n. Does the municipality have a low hazard exemption for this material? Yes No
- o. If street cleaning is identified as a storm water best management practice in the pollutant loading analysis, was street cleaning completed at the assumed frequency?
 Yes - Explain frequency _____
 No - Explain _____
 Not Applicable

Collection Services - *Catch Basin Sump Cleaning Program* Not Applicable

- p. Did the municipality conduct catch basin sump cleaning during the reporting year? Yes No Unsure
- q. How many catch basin sumps were cleaned in the reporting year? Unsure
- r. If known, how many tons of material was collected? Unsure
- s. Does the municipality have a low hazard exemption for this material? Yes No
- t. If catch basin sump cleaning is identified as a storm water best management practice in the pollutant loading analysis, was cleaning completed at the assumed frequency?
- Yes- Explain frequency _____
- No - Explain _____
- Not Applicable

Collection Services - *Leaf Collection Program* Not Applicable

Winter Road Management Not Applicable

*Note: We are requesting information that goes beyond the reporting year, answer the best you can.

- aa. How many lane-miles of roadway is the municipality responsible for doing snow and ice control? (*One mile of a two-way road equals two lane miles.*) Unsure
- ab. Provide amount of de-icing products used by month last winter season?
Solids (tons) (ex. sand, or salt-sand)

Product	Oct	Nov	Dec	Jan	Feb	Mar
<u>Salt</u>	<input type="text" value="0"/>	<input type="text" value="140"/>	<input type="text" value="850"/>	<input type="text" value="750"/>	<input type="text" value="490"/>	<input type="text" value="190"/>

Liquids (gallons) (ex. brine)

	Oct	Nov	Dec	Jan	Feb	Mar
<u>Brine</u>	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="1150"/>	<input type="text" value="4695"/>	<input type="text" value="1800"/>	<input type="text" value="2200"/>

- ac. Was salt applying machinery calibrated in the reporting year? Yes No Unsure
- ad. Have municipal personnel attended salt reduction strategy training in the reporting year? Yes No Unsure

Training Date	Training Name	# Attendance
<input type="text"/>	<input type="text"/>	<input type="text"/>

- ae. Brief explanation on Winter Road Management reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page*

Internal (Staff) Education & Communication

- af. Has the municipality provided an opportunity for internal Yes No Unsure

training or education to staff implementing the municipality's procedures for each of the pollution prevention program element ?

If yes, describe what training was provided (250 character limit):

See attached City of Pewaukee Annual Report

When: Various dates in 2022

How many attended: 12

- ag. Describe how the municipality has kept the following local officials and municipal staff aware of the municipal storm water discharge permit programs, procedures and pollution prevention program requirements.

Elected Officials

See attached City of Pewaukee Annual Report

Municipal Officials

See attached City of Pewaukee Annual Report

Appropriate Staff (such as operators, Department heads, and those that interact with public)

See attached City of Pewaukee Annual Report

- ah. Brief explanation on Internal Education reporting. *If you marked Unsure for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See attached City of Pewaukee Annual Report

Form 3400-224 (R8/2021)

Minimum Control Measures - Section 7 : Complete

7. Storm Sewer System Map

- a. Did the municipality update their storm sewer map this year?

Yes No Unsure

If yes, check the areas the map items that got updated or changed:

- Storm water treatment facilities
 Storm pipes
 Vegetated swales
 Outfalls
 Other - Describe below

- b. Brief explanation on Storm Sewer System Map reporting. *If you marked Unsure for an question for any questions above, justify the reasoning. Limit response to 250 characters and/or attach supplemental information on the attachments page.*

See attached City of Pewaukee Annual Report

Final Evaluation - Complete**Fiscal Analysis**

Complete the fiscal analysis table provided below. For municipalities that do not break out funding into permit program elements, please enter the monetary amount to your best estimate of what funding may be going towards these programs.

Annual Expenditure Reporting Year	Budget Reporting Year	Budget Upcoming Year	Source of Funds
---	---------------------------------	--------------------------------	------------------------

Element: Public Education and Outreach

1465	1500	1500	<u>Storm water utility</u>
------	------	------	----------------------------

Element: Public Involvement and Participation

1465	1500	1500	<u>Storm water utility</u>
------	------	------	----------------------------

Element: Illicit Discharge Detection and Elimination

4180	2060	3290	<u>Storm water utility</u>
------	------	------	----------------------------

Element: Construction Site Pollutant Control

128280	38066	43609	<u>Other</u>
--------	-------	-------	--------------

Element: Post-Construction Storm Water Management

23870	46066	43609	<u>Other</u>
-------	-------	-------	--------------

Element: Pollution Prevention

796435	692440	847300	<u>Storm water utility</u>
--------	--------	--------	----------------------------

Other (describe)

Storm Water Quality Management			
--------------------------------	--	--	--

23730	350000	410000	<u>Storm water utility</u>
-------	--------	--------	----------------------------

Other (describe)

Storm Sewer System Map			
------------------------	--	--	--

0	5000	5000	<u>Storm water utility</u>
---	------	------	----------------------------

Please provide a justification for a "0" entered in the Fiscal Analysis. *Limit response to 250 characters.*

See attached City of Pewaukee Annual Report.
--

Water Quality

a: Were there any known water quality improvements in the receiving waters to which the

municipality's storm sewer system directly discharges to?

Yes No Unsure If Yes, explain below:

b: Were there any known water quality degradation in the receiving waters to which the municipality's storm sewer system directly discharges to?

Yes No Unsure If Yes, explain below:

The majority of the streams within the City have been listed as impaired for many



c: Have any of the receiving waters that the municipality discharges to been added to the impaired waters list during the reporting year?

Yes No Unsure

d: Has the municipality evaluated their storm water practices to reduce the pollutants of concern?

Yes No Unsure

Storm Water Quality Management

a. Has the municipality completed or updated modeling in the reporting year (relating to developed urban area performance standards of s. NR 151.13(2)(b)1., Wis. Adm. Code)? Yes No

b. If yes, enter percent reduction in the annual average mass discharging from the entire MS4 to surface waters of the state as compared to implementing no storm water management controls:

Total suspended solids (TSS)

Total phosphorus (TP)

Additional Information

Based on the municipality's storm water program evaluation, describe any proposed changes to the municipality's storm water program. *If your response exceeds the 250 character limit, attach supplemental information on the attachments page.*

See the attached City of Pewaukee Annual Report.

Requests for Assistance on Understanding Permit Programs

Would the municipality like the Department to contact them about providing more information on understanding any of the Municipal Separate Storm Sewer Permit programs?

Please select all that apply:

- Public Education and Outreach
- Public Involvement and Participation
- Illicit Discharge Detection and Elimination
- Construction Site Pollutant Control
- Post-Construction Storm Water Management
- Pollution Prevention
- Storm Water Quality Management
- Storm Sewer System Map
- Water Quality Concerns
- Compliance Schedule Items Due
- MS4 Program Evaluation

Required Attachments and Supplemental Information

Any other MS4 program information for inclusion in the Annual Report may be attached on here. Use the Add Additional Attachments to add multiple documents.

Upload Required Attachments (15 MB per file limit) - [Help reduce file size and trouble shoot file uploads](#)

*Required Item

Note: To replace an existing file, use the 'Click here to attach file ' link or press the to delete an item.

Attach - Other Supporting Documents

AR EO

 File Attachment

[WaukeshaCounty2022-activites-list-fontedits20230302.xlsx](#)

AR IP

 File Attachment

[WaukeshaCounty2022-activites-list-fontedits20230302.xlsx](#)

(To remove items, use your cursor to hover over the attachment section. When the drop down arrow appears, select remove item)

Attach - Permit Compliance Documents

EO Program

 File Attachment

[CityofPewaukeeInformationandEducation3yearworkplan.docx](#)

(To remove items, use your cursor to hover over the attachment section. When the drop down arrow appears, select remove item)

Sign and Submit Your Application

Steps to Complete the signature process

1. Read and Accept the Terms and Conditions
2. Press the Submit and Send to the DNR button

NOTE: For security purposes all email correspondence will be sent to the address you used when registering your WAMS ID. This may be a different email than that provided in the application. For information on your WAMS account click [HERE](#).

Terms and Conditions

Certification: I hereby certify that I am an authorized representative of the municipality covered under Pewaukee, City MS4 Permit for which this annual report or other compliance document is being submitted, and that the information contained in this submittal and all attachments were gathered and prepared under my direction or supervision. Based on my inquiry of the person or persons under my direction or supervision involved in the preparation of this document, to the best of my knowledge, the information is true, accurate, and complete. I further certify that the municipality's governing body or delegated representatives have reviewed or been apprised of the contents of this annual report. I understand that Wisconsin law provides severe penalties for submitting false information.

Signee (must check current role prior to accepting terms and conditions)

- Authorized municipal contact using WAMS ID.
- Delegation of Signature Authority (Form 3400-220) for agent signing on the behalf of the authorized municipal contact.
- Agent seeking to share this item with authorized municipal contact (authorized municipal contact must get WAMS id and complete signature).

Name: Magdelene Wagner

Title: Director of Public Works/City Engineer

Authorized Signature.

- I accept the above terms and conditions.

Signed by : i:0#.f|wamsmembership|cityofpewaukee on 2023-03-22T14:15:14

You have already signed and submitted this application to the DNR. Please [contact the Wisconsin DNR](#) for assistance.

After providing the final authorized signature, the system will send an email to the authorized party and any agents. This email will include a copy to the final read only version of this application.

Attachment B

IDDE Dry Weather Outfall Locations



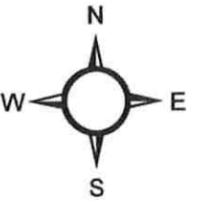
1 inch = 200 feet

Legend

- StormStructure
- StormPipe
- Road_Centerlines_Local_Government



BLUEMOUND INDUSTRIAL PARK
 IDDE OUTFALL LOCATIONS



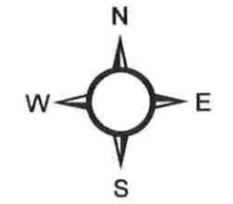
1 inch = 200 feet

Legend

- StormStructure
- StormPipe
- Road_Centerlines_Local_Government



RIDGEVIEW EAST-STONE RIDGE ARE
IDDE OUTFALL LOCATIONS



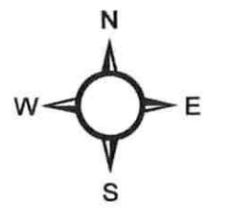
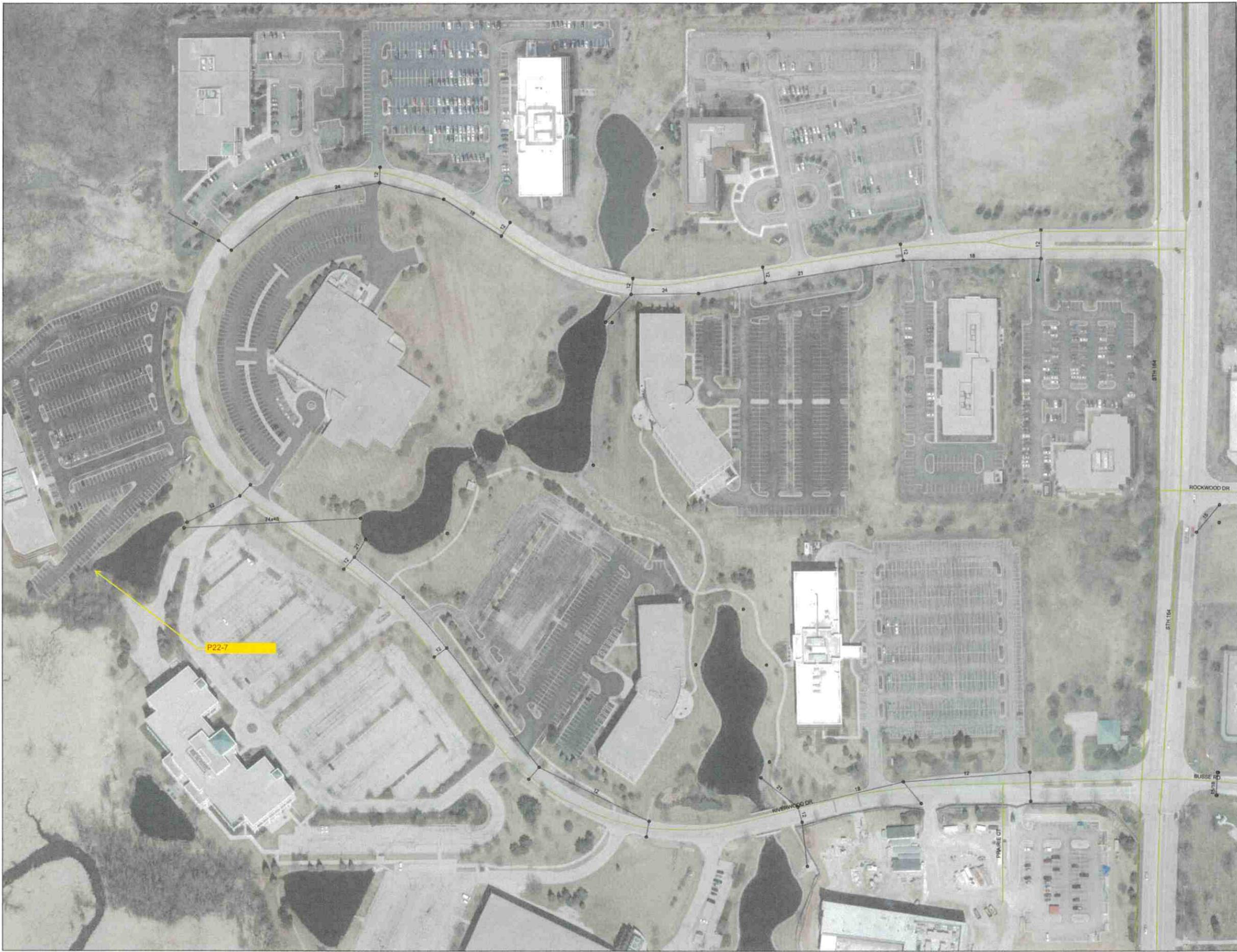
1 inch = 200 feet

Legend

- StormStructure
- StormPipe
- Road_Centerlines_Local_Government



RIDGEVIEW WEST-GUN CLUB AREA
 IDDE OUTFALL LOCATIONS



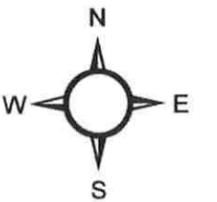
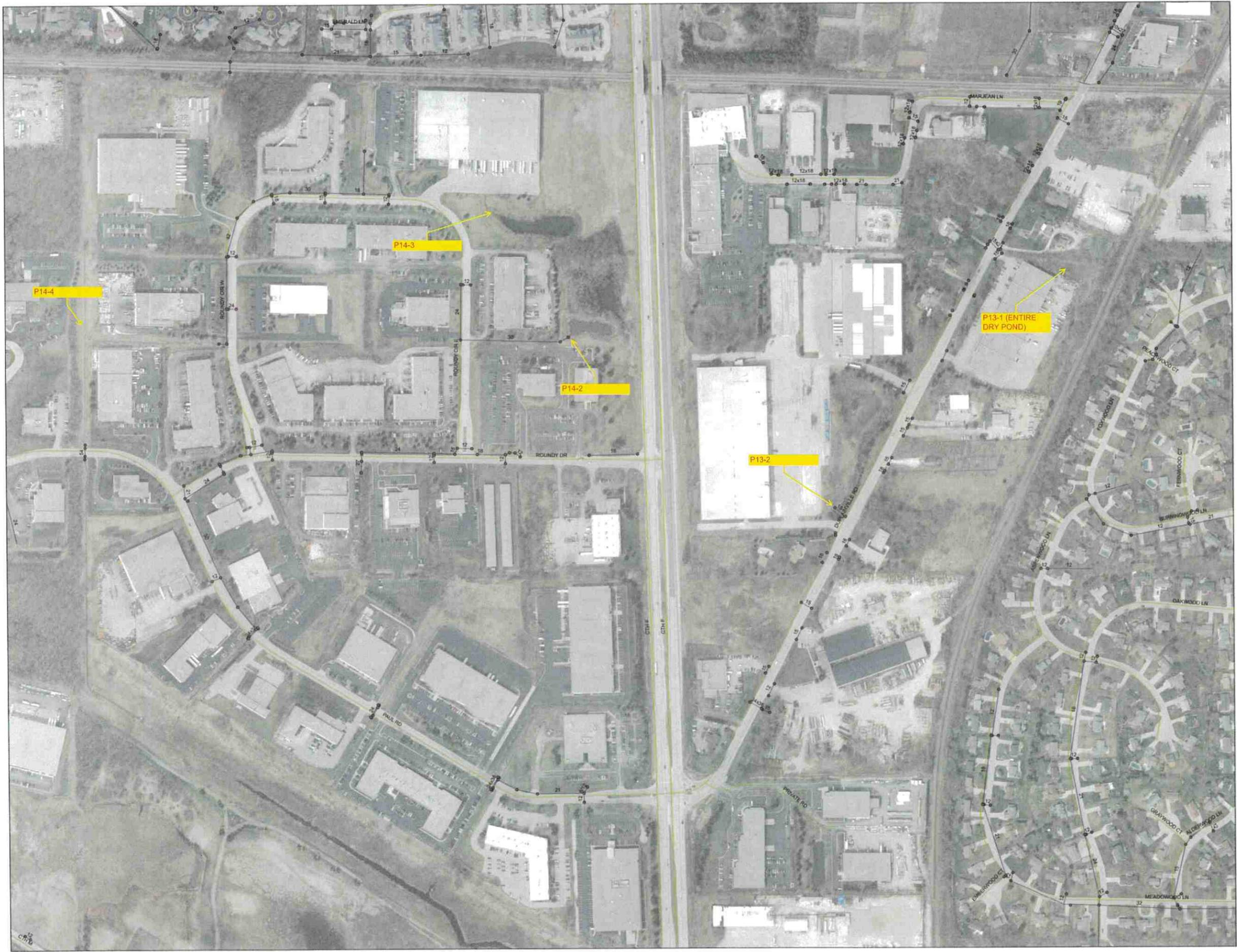
1 inch = 100 feet

Legend

- StormStructure
- StormPipe
- Road_Centerlines_Local_Government



RIVERWOOD BUSINESS PARK
 IDDE OUTFALL LOCATIONS



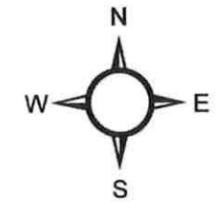
1 inch = 200 feet

Legend

- StormStructure
- StormPipe
- Road_Centerlines_Local_Government



ROUNDY CIRCLE-DUPLAINVILLE RD
 IDDE OUTFALL LOCATIONS



1 inch = 100 feet

Legend

- StormStructure
- StormPipe
- Road_Centerlines_Local_Government



SPRINGDALE ESTATES
 IDDE OUTFALL LOCATIONS

Attachment C

Winter Road Management Summary Tables

**Road Salt / Deicers Usage
City of Pewaukee
2018-2019**

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
9-Nov-18	Salt	200	Salt	40	31	32	1	22	6	0	Light Dusting
10-Nov-18	Plow	200	Salt	60	31	32	2	27	6	0	2 inches - fast mover
16-Nov-18	Plow	200	Salt	40	29	30	1	27	5	0	Light Dusting
17-Nov-18	Salt	300	Salt	50	28	30	1.5	24	5	0	Slower moving storm - lingering snow showers
26-Nov-18	Salt	200	Salt	15	30	30	0.05	12	3	0	Blizzard to the south - worked 3 routes south of I-94
29-Nov-18	Plow	200	Salt	70	30	29	1	32	9	0	1 inch overnight - slow mover
2-Dec-18	Salt	300	Salt	70	31	32	Ice	24	8	0	Light icing
12-Dec-18	Plow	200	Salt	70	33	31	0.05	24	8	0	Light Dusting
25-Dec-18	Plow	100	Salt	80	28	30	1	30	9	0	1 inch - fast mover
28-Dec-18	Salt	200	Salt	80	32	32	0.05	22	9	0	Light Dusting
29-Dec-18	Salt	200	Salt	80	32	32	0	27	9	0	Ice - very slippery
31-Dec-18	Plow	200	Salt	80	30	30	2	45	9	0	All day - changed to snow
2-Jan-19	Salt	200	Salt	70	32	31	Ice	32	9	0	Melt off and re-freeze
2-Jan-19	Salt	150	Salt	80	32	32	0.05	27	9	0	Light Dusting
9-Jan-19	Pre-wet	700	Brine	0				8	1	0	Pre-wet run
18-Jan-19	Plow	200	Salt	100	22	21	1	30	9	0	Beginning of storm - 6 inches expected
19-Jan-19	Plow	0	Salt	160	22	21	5	80	9	0	Snow all night - total clean up
22-Jan-19	Plow	200	Salt	80	21	21	1	27	9	0	Beginning of storm - 5 inches expected
23-Jan-19	Plow	200	Salt	240	22	21	6	96	9	0	Total snow 7 inches
26-Jan-19	Salt	0	Salt	80	4	4	0.05	22	9	0	Light Dusting
28-Jan-19	Plow	0	Salt	400	19	21	11	180	9	0	Started at 3 am and snowed all day
5-Feb-19	Pre-wet	500	Brine	0	27	26		21	9	0	Pre-wet/pre-salt runs - ice expected
6-Feb-19	Plow	400	Salt	240	31	30	1	140	10	0	1 inch of sleet then rain then freezing
7-Feb-19	Plow	500	Salt	180	33	32	Ice	60	10	0	Freezing rain
7-Feb-19	Salt	200	Salt	80	25	31	Ice	30	10	0	Heavy rain turned to ice
10-Feb-19	Plow	300	Salt	60	29	28	1	24	10	0	Fast moving storm
12-Feb-19	Plow	400	Salt	100	31	30	9	110	10	0	Wet - heavy snow
13-Feb-19	Plow	200	Salt	80	24	22	1	50	10	0	1 inch overnight followed by lots of drifting
17-Feb-19	Plow	200	Salt	100	28	26	2	32	10	0	6 inches of expected snow
18-Feb-19	Plow	200	Salt	100	26	24	2	40	10	0	End of storm - 7 inches
20-Feb-19	Plow	300	Salt	140	31	28	1	60	10	0	1 inch snow with freezing rain
22-Feb-19	Pre-wet	820	Brine	0							

**Road Salt / Deicers Usage
City of Pewaukee
2018-2019**

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
23-Feb-19	Salt	400	Salt	80	32	31	Ice	30	10	0	Ice with rain to follow
24-Feb-19	Salt	100	Salt	80	31	29	Ice	24	10	0	Heavy rain over night that turned to ice with 60 mph wind
27-Feb-19	Plow	100	Salt	80	25	24	1	40	10	0	1 inch over night
2-Mar-19	Plow	0	Salt	80	13	11	2	30	9	0	2 inches from fast moving over night storm
5-Mar-19	Plow	0	Salt	10	6	4	0.05	25	10	0	Light Dusting
10-Mar-19	Plow	300	Salt	10	32	31	1	30	10	0	

Total Brine Used (gal) 9070
 Total Salt Used (tons) 3365
 Average Air Temp per Entry (deg F) 26.75
 Average Pavement Temp. per Entry (deg F) 26.36
 Number of Entries 36

Total Event Hours Worked 1564

	Salt	Brine
October	0	0
November	275	1300
December	460	1200
January	1210	1650
February	1320	4620
March	100	300

**Road Salt / Deicers Usage
City of Pewaukee
2019-2020**

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
31-Oct-19	Plow	300	Salt	140	28	29	7	96	8		Happy Halloween Slow mover; 2- RUNS
6-Nov-19	Plow	300	Salt	70	30	28	2	32	8		2" Started @ 3AM done @ 9AM
6-Nov-19	Plow	300	Salt	70	30	27	1	24	8		1" continuation of storm
11-Nov-19	Plow	400	Salt	160	22	23	3	96	9		2 " Very slippery; 2- Runs
14-Nov-19	Plow	300	Salt	60	28	27	1	24	7		1" fast mover
12-Dec-19	Pre-wet	850									
14-Dec-19	Salt	500	Salt	80	31	29	Ice	30	9		Light mist turned to Ice
16-Dec-19	Plow	300	Salt	80	21	23	1	27	9		1" overnight
31-Dec-19	Plow	300	Salt	150	26	24	4	80	10		5" overnight super slippery; 2- Runs
10-Jan-20	Salt	0	Salt	50	32	34	0	27	9		Pre- Salt prior to Storm 10" inches expected
11-Jan-20	Salt	0	Salt	100	28	27	ICE	30	10		ICE Temperature Dropped 6 Degrees in 30 Minutes
11-Jan-20	Salt	300	Salt	80	26	27	1"	30	10		Beginning of Storm
11-Jan-20	Salt	300	Salt	120	24	25	3"	50	10		End of Storm
13-Jan-20	Salt	300	Salt	80	32	30	2"	30	10		2" overnight
17-Jan-20	Salt	0	Salt	50	32	31	0	27	9		Pre salt Run
17-Jan-20	Plow	300	Salt	80	32	31	3	30	10		Beginning of Storm
18-Jan-20	Plow	300	Salt	140	32	31	3	80	10		6" Total from storm High Winds coming; 2- Runs
23-Jan-20	Plow	300	Salt	80	32	31	2	40	10		Overnight Beginning of long drawn out storm
24-Jan-20	Plow	300	Salt	100	34	33	1	40	10		Storm continuing
24-Jan-20	Plow	300	Salt	80	36	32	2	40	10		Still Snowing
25-Jan-20	Plow	300	Salt	80	34	32	1	50	10		Still Snowing
25-Jan-20	Plow	300	Salt	60	36	32	2	50	10		End of Storm 8" Total
9-Feb-20	Plow	300	Salt	100	32	31	2	30	10		Start of storm 5" predicted.
9-Feb-20	Plow	300	Salt	100	30	28	5	50	10		Total storm 8" Fast mover
13-Feb-20	Plow	0	Salt	180	12	10	4	120	10		Quick mover Cold Blast to follow; 2- Runs
17-Feb-20	Plow	300	Salt	80	32	30	2	40	10		Beginning of storm
18-Feb-20	Plow	300	Salt	80	32	30	2	40	10		Fast mover 4 " total

Total Brine Used (gal) 7750
 Total Salt Used (tons) 2450
 Average Air Temp per Entry (deg F) 29.38
 Average Pavement Temp. per Entry (deg F) 28.27
 Number of Entries 26

Total Event Hours Worked 1213

**Road Salt / Deicers Usage
City of Pewaukee
2019-2020**

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
	Salt	Brine									
October	300	140									
November	360	1300									
December	310	1950									
January	1100	3000									
February	540	1200									
March	0	0									

**Road Salt / Deicers Usage
City of Pewaukee
2020-2021**

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
	Brine	Salt									
October	0	0									
November	0	0									
December	2268	440									
January	4751	1000									
February	800	800									
March	0	0									

**Road Salt / Deicers Usage
City of Pewaukee
2021-2022**

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
6-Dec-21	Salt	300	Salt	60	28	26	1	30	10	0	Light dusting
11-Dec-21	Salt	300	Salt	80	30	28	1	30	10	0	Light dusting
27-Dec-21	Plow	400	Salt	100	28	2	3	50	10	0	Fast mover
28-Dec-21	Plow	500	Salt	160	32	30	3	60	10	0	Slow mover
31-Dec-21	Salt	400	Salt	70	31	29	Ice	26	10	0	Light mist freezing to road surface
1-Jan-22	Plow	0	Salt	80	17	15	2	48	10	0	Plow and salt; snow continues
2-Jan-22	Plow	0	Salt	80	15	13	2	55	10	0	4 inches total from storm
5-Jan-22	Salt	200	Salt	80	19	24	1	30	10	0	Fluffy light snow and winds to 40 mph
5-Jan-22	Plow	0	Salt	80	14	13	1	30	10	0	Same storm
6-Jan-22	Plow	0	Salt	80	13	11	1	44	10	0	Same storm
15-Jan-22	Plow	300	Salt	80	26	25	1	30	10	0	Fast mover
23-Jan-22	Plow	0	Salt	80	13	10	3	45	9	0	3 inches overnight with ice build up under snow
24-Jan-22	Plow	0	Salt	80	15	13	2	40	10	0	Slippery road conditions
24-Jan-22	Plow	0	Salt	60	15	13	1	60	10	0	Same storm; required full clean-up
4-Feb-22	Plow	300	Salt	60	24	22	2	50	10	0	Fast mover
7-Feb-22	Salt	400	Salt	60	23	21	Ice	40	10	0	Spotty icing of roadway
10-Feb-22	Salt	400	Salt	60	24	21	1	27	9	0	Light dusting
11-Feb-22	Salt	200	Salt	50	34	32	1	45	9	0	1 inch overnight
18-Feb-22	Plow	0	Salt	60	15	15	2	36	9	0	Fast snow squall with low visibility
19-Feb-22	Plow	0	Salt	60	10	13	0	36	9	0	High winds and ice
21-Feb-22	Salt	0	Salt	80	34	32	Ice	40	10	0	Very icy
22-Feb-22	Salt	0	Salt	80	31	30	Ice	40	10	0	Ice
22-Feb-22	Plow	0	Salt	80	30	29	Sleet	40	10	0	Sleet from same storm
22-Feb-22	Plow	200	Salt	80	28	26	Ice	40	10	0	Re-freezing from same storm
23-Feb-22	Plow	0	Salt	60	15	13	Hard pack ice	36	9	0	Re-freezing from same storm
25-Feb-22	Plow	300	Salt	60	23	21	5	50	10	0	Overnight fast mover
25-Feb-22	Plow	100	Salt	30	32	31	Slush run	20	8	0	Melting
7-Mar-22	Plow	200	Salt	70	32	30	Start	45	10	0	Beginning of storm

Total Brine Used (gal)

4500

Total Salt Used (tons)

2060

Average Air Temp per Entry (deg F)

23.25

Average Pavement Temp. per Entry (deg F)

21

Number of Entries

28

Total Event Hours Worked

1123

**Road Salt / Deicers Usage
City of Pewaukee
2021-2022**

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
	Brine	Salt									
October	0	0									
November	0	0									
December	1900	470									
January	500	700									
February	1900	820									
March	200	70									

**Road Salt / Deicers Usage
City of Pewaukee
2022-2023**

Date(s) of Event	Activity	Salt Brine Used (gal)	Product Used (mix=salt/sand)	Amount of Product Used (Tons)	Air Temperature Range during event (°F)	Pavement Temperature Range during event (°F)	Precipitation Amount (inches)	Hours of Event (worked)	# of Drivers/# of Trucks	Hours of Post-Event Clean-Up	Other Information
15-Nov-22	Salt	0	SALT	80	36	36	2	26	10		All day snow
19-Nov-22	Salt	0	SALT	60	20	24	1	20	5		Varying amounts of snow throughout city
7-Dec-22	Salt	0	SALT	60	31	32	Ice	27	9		Freezing fog
9-Dec-22	Plow	0	SALT	60	30	32	3	30	10		Fast mover
9-Dec-22	Plow	0	SALT	40	32	31		25	10		Clean-up run
15-Dec-22	Plow	350	SALT	80	34	32	2	40	8		Wet and heavy snow
15-Dec-22	Plow	200	SALT	40	34	33		24	8		Clean-up run
16-Dec-22	Salt	200	SALT	60	34	32	1	24	6		Quick inch
16-Dec-22	Salt	200	SALT	60	30	29	1	27	9		Quick inch
19-Dec-22	Salt	0	SALT	40	26	27	Dusting	24	8		Very light snow but slippery
22-Dec-22	Plow	200	SALT	80	32	30	1	40	10		Beginning of blizzard
22-Dec-22	Plow	0	SALT	60	14	16	1	36	10		"BOMB CYCLONE"
22-Dec-22	Plow	0	SALT	40	-5	12	1	36	10		Blizzard is continuing 50+ winds
23-Dec-22	Plow	0	SALT	60	-13	2		40	10		Very windy drift run
23-Dec-22	Plow	0	SALT	50	-5	0		30	10		Very windy a lot drifting
24-Dec-22	Plow	0	SALT	70	8	14		50	10		Same stuff starting to break
26-Dec-22	Plow	0	SALT	50	24	18		36	9		Hard pack clean-up
4-Jan-23	Salt	300	SALT	80	30	31	1	36	9		Rain with snow mixed in
10-Jan-23	Salt	200	SALT	30	32	31	Ice	24	9		Freezing rain and fog
11-Jan-23	Salt	20	SALT	70	32	31	Ice	27	10		Freezing rain
18-Jan-23	Salt	0	SALT	30	36	34					Pre-salt all hills curves and intersections
18-Jan-23	Pre-wet	1325									Pre-wet all hills curves and intersections
19-Jan-23	Salt	300	SALT	60	35	33	Possible Ice	32	9		Rain and slush temps dropping
22-Jan-23	Salt	300	SALT	60	31	30	0.05	30	10		Light dusting
24-Jan-23	Pre-wet	1150									Pre-wet run
25-Jan-23	Plow	300	SALT	70	32	31	1	27	9		Fast mover
26-Jan-23	Plow	0	SALT	70	29	28	1	27	9		Fast mover
27-Jan-23	Salt	0	SALT	70	29	28	0.05	27	9		Dusting
28-Jan-23	Plow	300	SALT	70	31	30	4	32	9		Storm starting
29-Jan-23	Plow	300	SALT	80	32	30	4	50	10		Fast mover
30-Jan-23	Plow	200	SALT	60	22	21		45	10		Clean-up
16-Feb-23	Plow	300	SALT	70	28	26	6	50	10		Wet and heavy snow
16-Feb-23	Plow	300	SALT	60	24	22		40	10		Still snowing

Attachment D

Fiscal Analysis Worksheets

Spreadsheet for Fiscal Analysis Portion of City of Pewaukee's 2022 MS4 Annual Report

	Budget for Reporting Year	Annual Expenditures for Reporting year	Budget for Upcoming Year
Public Education and Outreach	\$1,500.00	\$1,465.50	\$1,500.00
Public Involvement and Participation	\$1,500.00	\$1,465.50	\$1,500.00
Illicit Discharge Detection and Elimination	\$2,060.00	\$4,180.00	\$3,290.00
Construction Site Pollution Control	\$38,065.50	\$128,280.00	\$43,608.50
Post-Construction Storm Water Management	\$46,065.50	\$23,870.00	\$43,608.50
Pollution Prevention	\$692,439.64	\$796,434.69	\$847,299.73
Storm Water Quality Management	\$350,000.00	\$23,729.85	\$410,000.00
Storm Sewer System Map	\$5,000.00	\$0.00	\$5,000.00
Totals	\$1,136,630.64	\$979,425.54	\$1,355,806.73

Public Information and Outreach

Budget for Reporting Year	\$1,500.00
Expenditures for Reporting Year	\$1,465.50
Budget for Upcoming year	\$1,500.00

Budget item for reporting purposes is identified as Permit Compliance-Information and Education and includes contracted amount to Waukesha County. This dollar figure is half of the reported/budgeted number as the Public Involvement and Participation program is included in here as well.

Note: for upcoming year budget, dollars are estimated for reporting purposes and may not necessarily correspond to the City's Budget summary. DNR categories do not correspond to City Budget Accounting Fields.

Public Involvement and Participation

Budget for Reporting Year	\$1,500.00
Expenditures for Reporting Year	\$1,465.50
Budget for Upcoming year	\$1,500.00

Budget item for reporting purposes is identified as Permit Compliance-Information and Education and includes contracted amount to Waukesha County. This dollar figure is half of the reported/budgeted number as the Public Education and Outreach program is included in here as well.

Note: for upcoming year budget, dollars are estimated for reporting purposes and may not necessarily correspond to the City's Budget summary. DNR categories do not correspond to City Budget Accounting Fields.

Illicit Discharge Detection and Elimination Program

Budget item for reporting purposes is an estimation of Engineering Technicians time and Civil Engineers time to inspect identified MS4 outfalls and review reports. Costs will include estimates of time spent persuing spills/dumping complaints by Engineering Staff and by City Fire Services.

Reporting Year Mileage Rate (Budget):
Budget Year Mileage Rate:

0.585
0.655

Note: for upcoming year budget, dollars are estimated for reporting purposes and may not necessarily correspond to the City's Budget summary. DNR catagories do not correspond to City Budget Accounting Fields. Fire Dept. projections are not included for budget purposes as Fire is a 24/7 service and is a required service regardless of whether or not a spill occurs.

Budget for Reporting Year

Annual Expenditures for Reporting Year

Budget Upcoming Year

	Hourly Wage	Hours	Cost	Hourly Wage	Hours	Cost	Hourly Wage	Hours	Cost
Engineering Staff									
Engineering Technician	\$56.18	20.00	\$1,123.60	\$56.18	40.00	\$2,247.20	\$57.86	40.00	\$2,314.40
Senior Engineering Technician	\$61.08	4.00	\$244.32	\$61.08	0.00	\$0.00	\$63.22	4.00	\$252.88
Civil Engineer	\$61.11	6.00	\$366.66	\$61.11	0.00	\$0.00	\$63.55	6.00	\$381.30
Chief Engineer-Utilities	\$88.00	2.00	\$176.00	\$88.00	10.75	\$946.00	\$91.52	2.00	\$183.04
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	\$84.62	0.00	\$0.00	\$88.85	0.00	\$0.00
DPW Director	\$112.74	1.00	\$112.74	\$112.74	0.00	\$0.00	\$118.94	1.00	\$118.94
Mileage costs			\$29.25			\$44.87			\$32.75
			<u>\$2,052.57</u> Subtotal			<u>\$3,238.07</u> Subtotal			<u>\$3,283.31</u> Subtotal
Fire Department Staff									
Battalion Chief	\$87.10	0.00	\$0.00	\$87.10	0.75	\$65.33	\$91.46	0.00	\$0.00
Fire Paid on Premise Driver/Paramedic	\$0.00	0.00	\$0.00	\$0.00	30.00	\$0.00	\$0.00	0.00	\$0.00
Fire Paid on Premise Fire Fighter/EMT	\$32.00	0.00	\$0.00	\$32.00	2.00	\$64.00	\$45.14	0.00	\$0.00
Fire Paid on Premise Paramedic	\$44.00	0.00	\$0.00	\$44.00	0.50	\$22.00	\$45.64	0.00	\$0.00
Engine Cost	\$650.00	0.00	\$0.00	\$650.00	1.00	\$650.00	\$650.00	0.00	\$0.00
Ambulance	\$500.00	0.00	\$0.00	\$500.00	0.25	\$125.00	\$500.00	0.00	\$0.00
Command Vehicle	\$62.00	0.00	\$0.00	\$62.00	0.25	\$15.50	\$62.00	0.00	\$0.00
			<u>0.00</u> Subtotal			<u>\$941.83</u> Subtotal			<u>\$0.00</u> Subtotal
			<u>2,052.57</u> Total			<u>\$4,179.90</u> Total			<u>\$3,283.31</u> Total
			<u>2,060.00</u> Use			<u>4,180.00</u> Use			<u>\$3,290.00</u> Use

Engine cost assumed based on apparatus cost of 650,000 with 10 year life cycle and 100 hours of use per year.

Command Vehicle assumed based on cost of 49,613 with 8 year life cycle and 100 hours of use per year.

ALS Unit assumed based on cost of 350,000 with 7 year life cycle and 100 hours of use per year.

Mileage costs based on vehicle distance of 73 miles (expenditures-19 miles @ .585 and 54 miles @ 0.625) and 50 miles (budget) at mileage rate of 58.5 cents for 2022 and 65.5 cents for 2023.

Wages based upon hourly rate multiplied by 2.0 to account for benefits, etc. and to match current bill back rates used by accounting.

Construction Site Pollutant Control Program

Note: The City's Construction Site Pollution Control Program includes compliance inspections, enforcement, erosion control plan review and permitting. The financial estimates contained in this spreadsheet are for construction sites over an acre only and do not include estimates of Building Inspection costs. Developer driven expenditures are generally billed back to the Developer. Budget dollars are taken from line items under "Permit Compliance" in the Storm Water Utility Budget (one half of Numbers 230-53656-51290 and 230-53656-51950 and all of 230-53656-53530).

Budget for Reporting Year \$38,065.50 **Budget for Upcoming Year** \$43,608.50

Annual Expenditures for Reporting Year \$128,280.00

Project		Wages	Hours	Total
Swan View Farms Phase 1	R/M Bills			\$8,008.50
	AECOM Bills			\$0.00
	Engineer Tech	\$56.18	0.00	\$0.00
	Sr. Engineer Tech	\$61.08	0.00	\$0.00
	Civil Engineer	\$61.11	2.50	\$152.78
	Chief Engineer-Utilities	\$88.00	1.00	\$88.00
	Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00
	DPW Director	\$112.74	0.00	\$0.00
	Total			\$8,249.28
Swan View Farms Phase 2	R/M Bills			\$10,153.00
	AECOM Bills			\$0.00
	Engineer Tech	\$56.18	0.00	\$0.00
	Sr. Engineer Tech	\$61.08	0.00	\$0.00
	Civil Engineer	\$61.11	5.00	\$305.55
	Chief Engineer-Utilities	\$88.00	3.75	\$330.00
	Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00
	DPW Director	\$112.74	0.00	\$0.00
	Total			\$10,788.55
Baenen CSM/Northview Residential	R/M Bills			\$3,562.50
	AECOM Bills			\$0.00
	Engineer Tech	\$56.18	0.00	\$0.00
	Sr. Engineer Tech	\$61.08	0.00	\$0.00
	Civil Engineer	\$61.11	1.25	\$76.39
	Chief Engineer-Utilities	\$88.00	2.25	\$198.00
	Chief Engineer-Roads/Develop	\$84.62	9.50	\$803.89
	DPW Director	\$112.74	0.00	\$0.00
	Total			\$4,640.78
Woodleaf Reserve Phase 4	R/M Bills			\$3,591.00
	AECOM Bills			\$0.00
	Engineer Tech	\$56.18	0.00	\$0.00
	Sr. Engineer Tech	\$61.08	0.00	\$0.00
	Civil Engineer	\$61.11	6.25	\$381.94
	Chief Engineer-Utilities	\$88.00	1.50	\$132.00
	Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00
	DPW Director	\$112.74	0.00	\$0.00
	Total			\$4,104.94
Waters Senior Living	R/M Bills			\$10,032.00
	AECOM Bills			\$0.00
	Engineer Tech	\$56.18	0.00	\$0.00
	Sr. Engineer Tech	\$61.08	0.00	\$0.00
	Civil Engineer	\$61.11	3.50	\$213.89
	Chief Engineer-Utilities	\$88.00	7.50	\$660.00
	Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00
	DPW Director	\$112.74	0.00	\$0.00
	Total			\$10,908.89

Total \$10,905.89

Woodleaf Reserve Phase 5

	Wages	Hours	Total
R/M Bills			\$8,915.25
AECOM Bills			\$0.00
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	3.50	\$213.89
Chief Engineer-Utilities	\$88.00	8.50	\$748.00
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00
DPW Director	\$112.74	0.00	\$0.00

Total \$9,877.14

Zigego Repair Facility

	Wages	Hours	Total
R/M Bills			\$2,681.50
AECOM Bills			\$0.00
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	0.00	\$0.00
Chief Engineer-Utilities	\$88.00	1.00	\$88.00
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00
DPW Director	\$112.74	0.00	\$0.00

Total \$2,769.50

Roundys East/Amazon Building

	Wages	Hours	Total
R/M Bills			\$2,707.00
AECOM Bills			\$0.00
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	0.50	\$30.56
Chief Engineer-Utilities	\$88.00	2.00	\$176.00
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00
DPW Director	\$112.74	0.00	\$0.00

Total \$2,913.56

Cardinal Meadow Subdivision

	Wages	Hours	Total
R/M Bills			\$6,241.50
AECOM Bills			\$2,158.19
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	5.00	\$305.55
Chief Engineer-Utilities	\$88.00	7.25	\$638.00
Chief Engineer-Roads/Develop	\$84.62	4.00	\$338.48
DPW Director	\$112.74	0.00	\$0.00

Total \$9,681.72

The Glen At Parkway Ridge

	Wages	Hours	Total
R/M Bills			\$6,953.50
AECOM Bills			\$0.00
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	5.50	\$336.11
Chief Engineer-Utilities	\$88.00	5.75	\$506.00
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00
DPW Director	\$112.74	0.00	\$0.00

Total \$7,795.61

Lakewood Baptist Building Addition-Soccer Field

	Wages	Hours	Total
R/M Bills			\$8,379.00
AECOM Bills			\$1,122.24
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	6.75	\$412.49
Chief Engineer-Utilities	\$88.00	8.00	\$704.00
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00
DPW Director	\$112.74	0.00	\$0.00

Total \$10,617.73

Century Fence Storage Area

	Wages	Hours	Total
R/M Bills			\$2,023.50
AECOM Bills			\$0.00

Engineer Tech	\$56.18	0.00	\$0.00	
Sr. Engineer Tech	\$61.08	0.00	\$0.00	
Civil Engineer	\$61.11	0.00	\$0.00	
Chief Engineer-Utilities	\$88.00	1.50	\$132.00	
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
DPW Director	\$112.74	0.00	\$0.00	
				Total \$2,155.50

Pewaukee South Industrial Building				
	Wages	Hours	Total	
R/M Bills			\$2,878.50	
AECOM Bills			\$0.00	
Engineer Tech	\$56.18	0.00	\$0.00	
Sr. Engineer Tech	\$61.08	0.00	\$0.00	
Civil Engineer	\$61.11	0.25	\$15.28	
Chief Engineer-Utilities	\$88.00	2.75	\$242.00	
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
DPW Director	\$112.74	0.00	\$0.00	
				Total \$3,135.78

WeEnergies Pewaukee Stores Site Improvements				
	Wages	Hours	Total	
R/M Bills			\$4,135.50	
AECOM Bills			\$0.00	
Engineer Tech	\$56.18	0.00	\$0.00	
Sr. Engineer Tech	\$61.08	0.00	\$0.00	
Civil Engineer	\$61.11	0.00	\$0.00	
Chief Engineer-Utilities	\$88.00	7.00	\$616.00	
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
DPW Director	\$112.74	0.00	\$0.00	
				Total \$4,751.50

Green Acres/Kowal Office Building				
	Wages	Hours	Total	
R/M Bills			\$0.00	
AECOM Bills			\$2,324.36	
Engineer Tech	\$56.18	0.00	\$0.00	
Sr. Engineer Tech	\$61.08	0.00	\$0.00	
Civil Engineer	\$61.11	0.00	\$0.00	
Chief Engineer-Utilities	\$88.00	4.75	\$418.00	
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
DPW Director	\$112.74	0.00	\$0.00	
				Total \$2,742.36

Northview Road Sidewalk				
	Wages	Hours	Total	
R/M Bills			\$2,593.50	
AECOM Bills			\$0.00	
Engineer Tech	\$56.18	0.00	\$0.00	
Sr. Engineer Tech	\$61.08	0.00	\$0.00	
Civil Engineer	\$61.11	0.00	\$0.00	
Chief Engineer-Utilities	\$88.00	0.50	\$44.00	
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
DPW Director	\$112.74	0.00	\$0.00	
				Total \$2,637.50

Paul Road Water Main Relay				
	Wages	Hours	Total	
R/M Bills			\$7,837.00	
AECOM Bills			\$0.00	
Engineer Tech	\$56.18	0.00	\$0.00	
Sr. Engineer Tech	\$61.08	0.00	\$0.00	
Civil Engineer	\$61.11	0.00	\$0.00	
Chief Engineer-Utilities	\$88.00	7.75	\$682.00	
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
DPW Director	\$112.74	0.00	\$0.00	
				Total \$8,519.00

Oak & Peninsula Water Main and Road Reconstruction				
	Wages	Hours	Total	
R/M Bills			\$6,754.50	
AECOM Bills			\$0.00	
Engineer Tech	\$56.18	0.00	\$0.00	
Sr. Engineer Tech	\$61.08	0.00	\$0.00	
Civil Engineer	\$61.11	0.00	\$0.00	
Chief Engineer-Utilities	\$88.00	2.50	\$220.00	
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	

DPW Director	\$112.74	0.00	\$0.00	
				Total \$6,974.50
Kathryn Court Drainage Improvements				
	Wages	Hours	Total	
R/M Bills			\$0.00	
AECOM Bills			\$2,003.22	
Engineer Tech	\$56.18	0.00	\$0.00	
Sr. Engineer Tech	\$61.08	0.00	\$0.00	
Civil Engineer	\$61.11	0.00	\$0.00	
Chief Engineer-Utilities	\$88.00	0.00	\$0.00	
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
DPW Director	\$112.74	0.00	\$0.00	
				Total \$2,003.22
Duplainville Road Reconstruction				
	Wages	Hours	Total	
R/M Bills			\$0.00	
Strand Bills			\$5,278.74	
Engineer Tech	\$56.18	0.00	\$0.00	
Sr. Engineer Tech	\$61.08	0.00	\$0.00	
Civil Engineer	\$61.11	0.00	\$0.00	
Chief Engineer-Utilities	\$88.00	0.25	\$22.00	
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
DPW Director	\$112.74	0.00	\$0.00	
				Total \$5,300.74
Pewaukee DPW Facility Phase 1				
	Wages	Hours	Total	
R/M Bills			\$0.00	
AECOM Bills			\$0.00	
Engineer Tech	\$56.18	34.50	\$1,938.21	
Sr. Engineer Tech	\$61.08	40.50	\$2,473.74	
Civil Engineer	\$61.11	0.00	\$0.00	
Chief Engineer-Utilities	\$88.00	3.75	\$330.00	
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
DPW Director	\$112.74	0.00	\$0.00	
				Total \$4,741.95
Pewaukee DPW Facility Phase 2				
	Wages	Hours	Total	
R/M Bills			\$0.00	
AECOM Bills			\$0.00	
Engineer Tech	\$56.18	8.00	\$449.44	
Sr. Engineer Tech	\$61.08	0.00	\$0.00	
Civil Engineer	\$61.11	0.00	\$0.00	
Chief Engineer-Utilities	\$88.00	2.25	\$198.00	
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
DPW Director	\$112.74	0.00	\$0.00	
				Total \$647.44
Yench Road CSM/Mierow				
	Wages	Hours	Total	
R/M Bills			\$0.00	
AECOM Bills			\$574.64	
Engineer Tech	\$56.18	0.00	\$0.00	
Sr. Engineer Tech	\$61.08	0.00	\$0.00	
Civil Engineer	\$61.11	0.00	\$0.00	
Chief Engineer-Utilities	\$88.00	0.00	\$0.00	
Chief Engineer-Roads/Develop	\$84.62	1.00	\$84.62	
DPW Director	\$112.74	0.00	\$0.00	
				Total \$659.26
Ridgeview Multi-Family/Interstate Partners				
	Wages	Hours	Total	
R/M Bills			\$0.00	
AECOM Bills			\$0.00	
Engineer Tech	\$56.18	0.00	\$0.00	
Sr. Engineer Tech	\$61.08	0.00	\$0.00	
Civil Engineer	\$61.11	0.00	\$0.00	
Chief Engineer-Utilities	\$88.00	8.25	\$726.00	
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
DPW Director	\$112.74	0.00	\$0.00	
				Total \$726.00
Green Road Industrial Bldg/Interstate Partners				
	Wages	Hours	Total	
R/M Bills			\$0.00	
AECOM Bills			\$0.00	
Engineer Tech	\$56.18	0.00	\$0.00	
Sr. Engineer Tech	\$61.08	0.00	\$0.00	
Civil Engineer	\$61.11	0.00	\$0.00	

Chief Engineer-Utilities	\$88.00	0.00	\$0.00
Chief Engineer-Roads/Develop	\$84.62	5.00	\$423.10
DPW Director	\$112.74	0.00	\$0.00
Total			\$423.10

Hansen Development	Wages	Hours	Total
R/M Bills			\$0.00
AECOM Bills			\$0.00
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	0.00	\$0.00
Chief Engineer-Utilities	\$88.00	0.00	\$0.00
Chief Engineer-Roads/Develop	\$84.62	3.00	\$253.86
DPW Director	\$112.74	0.00	\$0.00
Total			\$253.86

Momentum Day Care	Wages	Hours	Total
R/M Bills			\$0.00
AECOM Bills			\$0.00
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	0.00	\$0.00
Chief Engineer-Utilities	\$88.00	0.00	\$0.00
Chief Engineer-Roads/Develop	\$84.62	3.00	\$253.86
DPW Director	\$112.74	0.00	\$0.00
Total			\$253.86

Post Construction Storm Water Management

Note: The City's Post Construction Site Storm Water Management Program includes pond inspections, review of maintenance agreements, plan review and permitting. Estimates are provided for Civil Engineer and Chief Engineer-Utilities review of Wagner Park Ponds, Green Road Pond, the Pewaukee Sports Complex Ponds, City Hall Bio-infiltration device and the Rockwood Drive Pond. Developer driven expenditures are generally billed back to the Developer. Budget dollars are taken from line items under "Permit Compliance" in the Storm Water Utility Budget (one half of Numbers 230-53656-51290 and 230-53656-51950 and all of numbers 230-53656-52150 and 230-53656-53510).

Budget for Reporting Year

\$46,065.50

Budget for Upcoming Year

\$43,608.50

Annual Expenditures for Reporting Year

\$23,870.00

Project		Wages	Hours	Total	
Cardinal Meadow Subdivision	AECOM Bills			\$2,341.85	
	Engineer Tech	\$56.18	0.00	\$0.00	
	Sr. Engineer Tech	\$61.08	0.00	\$0.00	
	Civil Engineer	\$61.11	0.00	\$0.00	
	Chief Engineer-Utilities	\$88.00	0.50	\$44.00	
	Chief Engineer-Roads/Develop	\$84.62	10.00	\$846.20	
	DPW Director	\$112.74	0.00	\$0.00	
	Total				\$3,232.05
Lakewood Baptist Bldg Addition-Soccer Field	AECOM Bills			\$1,122.24	
	Engineer Tech	\$56.18	0.00	\$0.00	
	Sr. Engineer Tech	\$61.08	0.00	\$0.00	
	Civil Engineer	\$61.11	0.00	\$0.00	
	Chief Engineer-Utilities	\$88.00	4.75	\$418.00	
	Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
	DPW Director	\$112.74	0.00	\$0.00	
	Total				\$1,540.24
Yench Road CSM/Mierow	AECOM Bills			\$1,958.47	
	Engineer Tech	\$56.18	0.00	\$0.00	
	Sr. Engineer Tech	\$61.08	0.00	\$0.00	
	Civil Engineer	\$61.11	0.00	\$0.00	
	Chief Engineer-Utilities	\$88.00	1.50	\$132.00	
	Chief Engineer-Roads/Develop	\$84.62	6.00	\$507.72	
	DPW Director	\$112.74	0.00	\$0.00	
	Total				\$2,598.19
Green Road Industrial Building/Interstate Partners	AECOM Bills			\$0.00	
	Engineer Tech	\$56.18	0.00	\$0.00	
	Sr. Engineer Tech	\$61.08	0.00	\$0.00	
	Civil Engineer	\$61.11	0.00	\$0.00	
	Chief Engineer-Utilities	\$88.00	0.00	\$0.00	
	Chief Engineer-Roads/Develop	\$84.62	10.00	\$846.20	
	DPW Director	\$112.74	0.00	\$0.00	
	Total				\$846.20
Ridgeview Multi-Family/Interstate Partners	AECOM Bills			\$0.00	
	Engineer Tech	\$56.18	0.00	\$0.00	
	Sr. Engineer Tech	\$61.08	0.00	\$0.00	
	Civil Engineer	\$61.11	0.00	\$0.00	
	Chief Engineer-Utilities	\$88.00	9.25	\$814.00	
	Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
	DPW Director	\$112.74	0.00	\$0.00	
	Total				\$814.00

Spring Creek Church/Teen Center Addition	Wages	Hours	Total
AECOM Bills			\$3,985.77
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	0.00	\$0.00
Chief Engineer-Utilities	\$88.00	0.75	\$66.00
Chief Engineer-Roads/Develop	\$84.62	20.50	\$1,734.71
DPW Director	\$112.74	3.50	\$394.59
Total			\$6,181.07

Swan View Farms Phase 1	Wages	Hours	Total
AECOM Bills			\$0.00
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	0.00	\$0.00
Chief Engineer-Utilities	\$88.00	3.50	\$308.00
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00
DPW Director	\$112.74	0.00	\$0.00
Total			\$308.00

Swan View Farms Phase 2	Wages	Hours	Total
AECOM Bills			\$0.00
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	0.00	\$0.00
Chief Engineer-Utilities	\$88.00	3.25	\$286.00
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00
DPW Director	\$112.74	0.00	\$0.00
Total			\$286.00

Baenen CSM/Northview Residential	Wages	Hours	Total
AECOM Bills			\$0.00
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	0.00	\$0.00
Chief Engineer-Utilities	\$88.00	1.75	\$154.00
Chief Engineer-Roads/Develop	\$84.62	16.50	\$1,396.23
DPW Director	\$112.74	0.00	\$0.00
Total			\$1,550.23

Woodleaf Reserve Phase 5	Wages	Hours	Total
AECOM Bills			\$0.00
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	3.00	\$183.33
Chief Engineer-Utilities	\$88.00	3.00	\$264.00
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00
DPW Director	\$112.74	0.00	\$0.00
Total			\$447.33

Hansen Development	Wages	Hours	Total
AECOM Bills			\$0.00
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	0.00	\$0.00
Chief Engineer-Utilities	\$88.00	0.00	\$0.00
Chief Engineer-Roads/Develop	\$84.62	5.00	\$423.10
DPW Director	\$112.74	0.00	\$0.00
Total			\$423.10

Green Acres/Kowal Office Building	Wages	Hours	Total
AECOM Bills			\$2,234.36
Engineer Tech	\$56.18	0.00	\$0.00
Sr. Engineer Tech	\$61.08	0.00	\$0.00
Civil Engineer	\$61.11	0.00	\$0.00
Chief Engineer-Utilities	\$88.00	5.25	\$462.00
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00

DPW Director	\$112.74	0.00	\$0.00	Total	\$2,696.36
Momentum Day Care					
AECOM Bills			\$0.00		
Engineer Tech	\$56.18	0.00	\$0.00		
Sr. Engineer Tech	\$61.08	0.00	\$0.00		
Civil Engineer	\$61.11	0.00	\$0.00		
Chief Engineer-Utilities	\$88.00	4.00	\$352.00		
Chief Engineer-Roads/Develop	\$84.62	14.00	\$1,184.68		
DPW Director	\$112.74	0.00	\$0.00	Total	\$1,536.68
Green Road Pond Inspection					
AECOM Bills			\$0.00		
Engineer Tech	\$56.18	0.00	\$0.00		
Sr. Engineer Tech	\$61.08	0.00	\$0.00		
Civil Engineer	\$61.11	1.50	\$91.67		
Chief Engineer-Utilities	\$88.00	0.00	\$0.00		
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00		
DPW Director	\$112.74	0.00	\$0.00	Total	\$91.67
Sports Complex Pond Inspections					
AECOM Bills			\$0.00		
Engineer Tech	\$56.18	0.00	\$0.00		
Sr. Engineer Tech	\$61.08	0.00	\$0.00		
Civil Engineer	\$61.11	0.00	\$0.00		
Chief Engineer-Utilities	\$88.00	4.25	\$374.00		
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00		
DPW Director	\$112.74	0.00	\$0.00	Total	\$374.00
Rockwood Drive Pond Inspection					
AECOM Bills			\$0.00		
Engineer Tech	\$56.18	0.00	\$0.00		
Sr. Engineer Tech	\$61.08	0.00	\$0.00		
Civil Engineer	\$61.11	2.75	\$168.05		
Chief Engineer-Utilities	\$88.00	0.00	\$0.00		
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00		
DPW Director	\$112.74	0.00	\$0.00	Total	\$168.05
Wagner Park Pond Inspections					
AECOM Bills			\$0.00		
Engineer Tech	\$56.18	0.00	\$0.00		
Sr. Engineer Tech	\$61.08	0.00	\$0.00		
Civil Engineer	\$61.11	0.00	\$0.00		
Chief Engineer-Utilities	\$88.00	3.50	\$308.00		
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00		
DPW Director	\$112.74	0.00	\$0.00	Total	\$308.00
City Hall Biofiltration Device					
AECOM Bills			\$0.00		
Engineer Tech	\$56.18	0.00	\$0.00		
Sr. Engineer Tech	\$61.08	0.00	\$0.00		
Civil Engineer	\$61.11	0.00	\$0.00		
Chief Engineer-Utilities	\$88.00	1.25	\$110.00		
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00		
DPW Director	\$112.74	0.00	\$0.00	Total	\$110.00
Pewaukee DPW Facility Phase 1					
AECOM Bills			\$0.00		
Engineer Tech	\$56.18	0.00	\$0.00		
Sr. Engineer Tech	\$61.08	0.00	\$0.00		
Civil Engineer	\$61.11	0.00	\$0.00		

Chief Engineer-Utilities	\$88.00	4.00	\$352.00	
Chief Engineer-Roads/Develop	\$84.62	0.00	\$0.00	
DPW Director	\$112.74	0.00	\$0.00	
				Total
				\$352.00

Pollution Prevention

	2022 Budgeted	2022 Expenditure	2023 Budgeted
Catch Basin Cleaning and Maintenance	\$44,000.00	\$82,730.07	\$41,050.00
Storm Inlets and Catch Basins	\$75,000.00	-\$4,500.68	\$75,000.00
Street Sweeping	\$22,850.00	\$24,894.29	\$25,750.00
Ditch and Culvert Maintenance	\$293,925.00	\$108,443.11	\$297,691.00
Storm Sewer Maintenance	\$151,859.00	\$490,784.61	\$300,311.00
Yard Maintenance	\$10,000.00	\$0.00	\$10,000.00
Yard Waste Recycling	\$94,805.64	\$94,083.29	\$97,497.73
Totals	\$692,439.64	\$796,434.69	\$847,299.73

Items reported here were typically broken out in the budget. Yard Maintenance used to be found under Permit Compliance. Storm Inlets and Catch Basins was found under Storm Water Projects. Yard Waste Recycling was taken as a fraction of the budgeted and actual expenditures from Refuse Collection and Recycling (10.307% of totals). Actual expenditures for Storm Sewer Maintenance include expenses the Roundy's Industrial Park #2 (420-57422-58210) and Spice Creek/Meadowbrook Farms #2 (420-57552-58210) for half the curb repair, storm sewer cleaning, storm sewer lining, storm sewer replacement, manhole repairs and end-section repairs. Actual expenditures for Storm Inlets and Catch Basins include expenses from Spice Creek/Meadowbrook Farms #2 (420-57552-58210) for inlet repairs.

Storm Water Quality Management

Budget for Reporting Year	\$350,000.00
Expenditures for Reporting Year	\$23,729.85
Budget for Upcoming year	\$410,000.00

Storm Water Quality Management within the permit is the maintenance of the City's pollution reduction total at the time the law was changed to negate the 40% requirement. As there is no budget line item for this, I have included the budgeted costs for a new Storm Water Study found under Projects (230-57340-58210). The City entered into a contract with AECOM in 2022 to prepare a comprehensive storm water management plan. The planning effort will include a complete remodel for water quality and quantity purposes, a re-evaluation of the dry weather outfall monitoring program and the creation of a new MS4 map. The project is anticipated to be completed in late 2024.

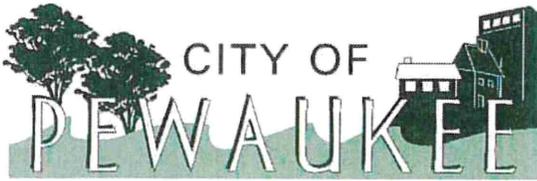
Storm Sewer System Mapping

Budget for Reporting Year	\$5,000.00
Expenditures for Reporting Year	\$0.00
Budget for Upcoming year	\$5,000.00

Storm Sewer System Mapping is lumped within Storm Sewer Maintenance budget category. The breakout for this is under 230-53651-53520 within the budget software General Ledger. Dollars shown here have been removed from the Storm Sewer Maintenance category.

Attachment E

City Response to WDNR Regarding 2021 Pewaukee MS4 Program Audit



**Department of Public Works
Engineering Division**

W240N3065 Pewaukee Road • Pewaukee, WI 53072

Phone: (262) 691-0804 • Fax: (262) 691-5729

Email: publicworks@pewaukee.wi.us

April 5, 2022

Samantha Katt
Wastewater Specialist
Wisconsin Department of Natural Resources
1027 West St. Paul Avenue
Milwaukee, WI 53233

Subject: City of Pewaukee MS4 Permit Program Audit
WPDES Permit No. WI-SO50105-3 MS4 Permit

Dear Ms. Katt:

Thank you for your summary letter regarding the Department's September 8th, 2021, audit of the City of Pewaukee's MS4 program (attached, excluding exhibits). More specifically, the audit reviewed the City's Illicit Discharge Detection and Elimination program, Construction Site Pollutant Control Program and Pollution Prevention Program. Based upon your letter, the Department has four requirements which the City must resolve in order to remain compliant with its WPDES permit. These requirements are:

1. Re-evaluate the screening locations for the City's major MS4 outfalls which are part of the Illicit Discharge Detection and Elimination (IDDE) program.
2. Submit to the Department a new map identifying all of the City's MS4 outfalls.
3. Identify the Best Management Practices (BMP's) utilized in the City's pollutant reduction analysis and submit the following for these BMP's in a tabular format: BMP name, type, year built, location, last date of inspection, and ownership.
4. Develop a schedule, maintenance plan or other form of commitment to City owned or operated BMP maintenance.

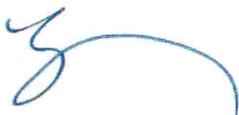
The City will release a request for proposals by June 30, 2022, for the development of a new comprehensive storm water management plan. The new plan will include the development of a new MS4 system map and a re-evaluation of the illicit discharge screening locations. A new water quality evaluation will be completed as a part of this planning effort and include a map of those facilities utilized in the analysis. A table will also be developed identifying: the facility name; the type of facility, the year built (if known); the location of the facility; the last date of inspection; and the ownership of the facility. The comprehensive storm water management plan is anticipated to take 2 years to complete.

The City will provide a plan for the maintenance of City owned BMP's by September 30, 2022. The plan will identify which facilities require maintenance, identify the objectives to be achieved and a schedule to complete those objectives.

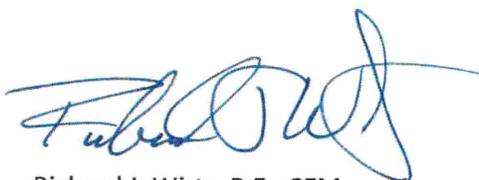
Among the requirements noted in the Department's summary letter was a request for a map identifying the current screening locations for the City's IDDE program. The City will develop and provide the requested map by June 3, 2022.

If you have any questions or concerns, please feel free to contact Magdelene Wagner, P.E., Director of Public Works, or myself at (262) 691-0804.

Sincerely,



Magdelene Wagner, P.E.
Director of Public Works



Richard J. Wirtz, P.E., CFM
Chief Engineer-Utilities

Enclosure

CC: Magdelene Wagner, P.E., City of Pewaukee (via email)
Brian Leightner, E.I.T., City of Pewaukee (via email)
Mayor Steve Bierce, City of Pewaukee (via email)
Scott Klein, City of Pewaukee (via email)
Matt Stevens, City of Pewaukee (via email)
Nick Phalin, CPRP, City of Pewaukee (via email)
Benjamin Benninghoff, WDNR (via email)

State of Wisconsin
DEPARTMENT OF NATURAL RESOURCES
2300 N. Dr. Martin Luther King, Jr. Drive
Milwaukee WI 53212-3128

Tony Evers, Governor
Preston D. Cole, Secretary
Telephone 608-266-2621
Toll Free 1-888-936-7463
TTY Access via relay - 711



February 22, 2022

Magdelene Wagner
City of Pewaukee
W240 N3065 Pewaukee Road
Pewaukee, WI 53072

Subject: City of Pewaukee MS4 Permit Program Audit Summary
WPDES Permit No. WI-SO50105-3 MS4 Permit

Dear Magdelene Wagner,

On September 8th, 2021, Department of Natural Resources (Department) staff met with City of Pewaukee (City) staff to evaluate implementation of the City's Municipal Separate Storm Sewer System (MS4) Permit Program. During the evaluation, the Department identified "Required Actions" and "Recommendations" as reflected in Table 1 of the enclosed summary. The "Required Actions" listed in the table are necessary to comply with the permit. Please review this information carefully as it is intended to help inform the City's internal processes and procedures to improve overall consistency and effectiveness of the MS4 Permit Program.

This evaluation was conducted through the Department's authority under Permit Section IV.K and focused on the City's implementation of the following program elements:

Illicit Discharge Detection and Elimination
Construction Site Pollutant Control
Pollution Prevention

The evaluation was attended by:

Department Staff

Samantha Katt – Storm Water Specialist
Jacob Zimmerman – Storm Water Engineer

City Staff

Maggie Wagner – Director of Public Works and City Engineer
Rich Wirtz – Chief Engineer
Brian Leightner – Engineer
Jeff Faber – Engineer
Matt Stevens – Street Superintendent
Dan Neubauer – Parks Maintenance Supervisor

Please provide a written response within forty-five (45) calendar days of receipt of this letter addressing efforts on behalf of the City to resolve any issues described in the summary. This response should include both completed and proposed action items as well as a proposed schedule. Please feel free to annotate Table 1 with your responses for this purpose.

Thank you for your cooperation with the Department's Municipal Storm Water Management Program. If you have any questions or concerns regarding this letter, then please contact me at (414) 522-0073 or samantha.katt@wisconsin.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Samantha Katt". The signature is fluid and cursive, with the first name "Samantha" written in a larger, more prominent script than the last name "Katt".

Samantha Katt
Storm Water Specialist
Watershed Bureau

Enclosure: City of Pewaukee MS4 Program Audit Summary Report w/exhibits

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BACKGROUND

The City of Pewaukee was first permitted in November 2004 under the Department's Storm Water Municipal Group Permit, WPDES Permit No. WI-SO50105-1, along with co-permittees City of Waukesha, the Villages of Pewaukee and Sussex, and Towns of Brookfield, Delafield, Lisbon, and Waukesha. The MS4 permit was reissued coverage under WPDES Permit No. WI-SO50105-2 in October 2009, and again in December 2014 under WPDES Permit No. WI-SO50105-3. The Village's current MS4 permit, WPDES Permit No. WI-SO50105-3, is provided in Exhibit A.

According to the US Census Bureau's webpage, the City is approximately 19.5 square miles and has experienced a positive population growth of 10.9% from 2010 to 2019 (estimated population in 2010 was 13,190 with a population density of 676.4 per square mile; and 14,631 in 2019 with a population density of 750.3 per square mile). The City, found within the Upper Fox River Watershed, contains a mix of residential, commercial, industrial, and many natural resource areas.

Completed in 2011, the City's pollutant loading analysis showed the City is achieving developed urbanized area performance standards as required by s. NR 151.13 Wis. Admin. Code reporting a 32% TSS reduction¹. A copy of this report is provided in Exhibit B.

Audit Overview

As part of the audit, the Department requested the City submit specific documentation pertaining to the MS4 Permit Program according to Permit Part IV.L: Duty to Provide Information. During this request, it was noted these documents were to be discussed specifically with the City staff implementing them during the audit. The purpose of these discussion was to 1) obviate any inconsistencies between documented procedures and program implementation, 2) identify areas where program implementation is deficient in meeting the minimum permit requirements, 3) identify areas where the City is improving or excelling at MS4 program implementation, and 4) clear up any concerns or questions regarding a permit requirement, purpose and intent, and implementation.

The MS4 audit occurred September 8, 2021 and consisted of in-office discussions and field inspections. See Exhibit C for audit agenda, locations of the activities, and attendees.

¹ The City is achieving a 32% TSS reduction utilizing roadside grassed swales and City-owned wet detention ponds. This report explains a 59% TSS reduction could be achieved if the City obtained maintenance authority on the numerous privately owned wet ponds.

ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

Overview

To comply with MS4 Part II.C, the City is required to implement a program to detect and remove illicit connections and discharges to the municipal separate storm sewer systems. The program shall maintain and enforce the municipal ordinance regarding the prevention and elimination of illicit discharges and illicit connections to the MS4, include an on-going dry weather field screening of outfalls, and contain a procedure for responding to, with the ultimate goal of eliminating, known or suspected illicit discharges.

Illicit Discharge City Ordinance

The City's ordinance regarding the prevention and elimination of illicit discharges and illicit connections to the MS4 is located in Section 19.20 of the City's Municipal Code. A copy of the ordinance can be found within Exhibit D. The ordinance defines and prohibits illicit discharges and illicit connections, identifies non-storm water discharges or flows that are not considered illicit discharges, and provides inspection and enforcement authority.

Dry-weather Outfall Screening Procedure

The City is required to conduct dry-weather outfall screenings at all priority outfalls at least once per year and all other major (non-priority) outfalls at least once every five years. Field screenings shall include a narrative description of visual observations including color, odor, turbidity, oil sheen or surface scum, flow rate or any other relevant observations regarding the potential presence of illicit discharges. If flow is observed, a field analysis shall be conducted to determine the presence of illicit discharges and shall include testing for one or more indicator parameters (e.g., ammonia, detergents, pH, chlorine, copper, or phenol) or by conducting video, smoke, or dye testing in the storm sewer system.

Jeff Faber, City Engineer, is the main person responsible for conducting dry-weather outfall screenings. Twice per year (once in May or June, the second time in July or August), Faber inspects each of the 20 MS4 outfalls identified as major. Each outfall is screened and documented for visual observations; however, it was said during the audit that some outfalls with flow are not tested as the flow from these outfalls are assumed to be base flow. Consequently, though the City has a test kit, the test kit is said to not be brought to dry-weather screenings as it is never used.

Though it hasn't occurred in recent years, if a screening showed signs of a potential illicit discharge², Faber said he would attempt to locate the source and notify Maggie Wagner (the City's Director of Public Works/City Engineer) and/or Rich Wirtz (the City's Chief Engineer). Wagner and Wirtz are ultimately responsible for continuing the investigation and elimination – this includes assigning the most appropriate person to investigate the potential illicit discharge, notify appropriate parties (e.g., neighboring municipalities, DNR, violating party, etc.), documentation, and enforcement.

If an illicit discharge or connection is found, the City may order compliance by written notice of

² In the event of a hazardous substance, Pewaukee Fire Department would be contacted and is responsible for further investigation and elimination.

violation to the responsible person. Enforcement mechanisms include cease and desist within 72 hours, abatement or remediation of storm water pollution or contaminated hazards and the restoration of any affected property, and forfeitures for each day of the violation and costs of prosecution.

Response to Known or Suspected Illicit Discharges

To comply with the permit, the City shall conduct a field investigation in the contributing drainage area within 24 hours after a known or suspected illicit discharge is detected or reported. If the source is found, the City is required to take appropriate action to remove the illicit discharge as soon as practicable but no later than 30 days. If the source cannot be found, the associated outfall shall be added to the list of priority outfalls for on-going dry weather screening. If indirect sources, such as sanitary leakage or contaminated groundwater are suspected, the City shall develop and implement a strategy to locate and eliminate these sources. If the City plans to conduct a dye test, identifies a spill or release of a hazardous substance which has resulted or may result in the discharge to waters of the state, or identifies an illicit discharge that originates from or discharges to another MS4, they shall notify the Department and/or appropriate municipality.

Noted on past MS4 Annual Reports and discussed during the audit, detection or reports of known or suspected illicit discharges are uncommon. However, the public can report known or suspected illicit discharges by calling the City or filling out an online form – these reports are directed to Wirtz. Wirtz tracks the complaints and writes the summary reports that are submitted to the Department. As with known or suspected illicit discharges found during dry-weather outfall screenings, the City Engineer is the main person responsible for continuing the investigation, elimination, and enforcement.³

Required Actions

After the audit, Department and City staff had further discussions concerning the City's major outfalls with observed flow which are not undergoing field analysis (i.e., tested for indicator parameters and/or conducting a video, smoke, or dye test). Outfall P14-5 was specifically discussed however, other major outfalls may be similar. Through this discussion, it was determined that while the screening location for P14-5 may fit the definition of major, due to hydrological and other physical conditions such as vegetation, it is not the most effective location to screen for potential illicit discharges. Similar to the *submerged outfalls* and *storm water practices* scenarios in the Department's Illicit Discharge Detection and Elimination Guidance⁴, it is recommended screening occur upstream where there is less background influence which may mask the presence of an illicit discharge. The City should re-evaluate screening locations using the considerations provided in Permit Part II.C.1 and the Department's Illicit Discharge Detection and Elimination Guidance. If flow is observed at these revised

³ Local police and fire departments are the primary people responsible for responding to hazardous spills, such as gasoline resulting from a car accident. Discussions pertaining to the City's response (e.g., investigation, elimination, and enforcement) to known or suspected hazardous discharges do not necessarily reflect their response to these hazardous discharges.

⁴ The Department's IDDE Guidance and other publications can be found here: <https://dnr.wisconsin.gov/topic/Stormwater/publications.html>

locations during screening, the City must conduct a field analysis according to the permit to determine the presence of illicit discharges.

Provided in Exhibit E, the City's storm sewer system map does not identify MS4 outfalls. To comply with Permit Part II.H.2, the City must revise their map to identify all MS4 outfalls. Noting that screening locations should be re-evaluated, the Department is requesting the City submit a map identifying the current screening locations. After screening locations have been re-evaluated, a revised map shall be submitted to the Department with the Annual Report as required by Permit Part II.I.2.

CONSTRUCTION SITE POLLUTANT CONTROL PROGRAM

Overview

To comply with MS4 Part II.D, the City is required to implement and enforce a program consistent with all permit conditions. At a minimum, this includes: maintaining inspection and enforcement authority; enforcing permitting requirements, procedures, and fees, reviewing and approving plans with design criteria, standards, and specifications that meet or exceed the technical standards approved by the Department; update and enforce the ordinance to incorporate s. NR 151 Wis. Adm. Code requirements by March 31, 2016; conduct erosion control inspections at all permitted sites according to their program; and maintain records of erosion control inspections and any enforcement actions taken.

The City's requirements for construction site erosion control are located in Section 19.11 of the City's Municipal Code. It includes s. NR 151 Wis. Adm. Code requirements and describes other aspects of the construction program like persons responsible and available enforcement mechanisms. A copy of the ordinance can be in Exhibit D. The City also has a written program procedure which provides much more detail and example templates used to implement the program, a copy of this is provided in Exhibit F.

Applicants intending to develop in the City of Pewaukee can find information on design standards and permitting process on the City's website, the City will also send this information to the applicant. Plans for sites that will disturb one acre or more of soil are sent to the City's Engineering Department where the City's Chief Engineer, Rich Wirtz, reviews plans. If Wirtz has comments about the plan, he electronically marks the plan and sends it back to the developer. After comments have been addressed, Wirtz issues the permit. Pre-construction meetings are usual but do not always occur as part of the permitting process. During the permitting process, the City also informs the applicant to apply for a DNR construction permit.

Consultants from the engineering firm Ruekert & Mielke, Inc. are the main persons responsible for conducting construction site inspections. Inspections occur weekly and after ½ inch rain events. Inspectors submit inspection reports to Wirtz for review and will notify him of any egregious or outstanding noncompliance. If noncompliance issues are noted, the City typically compels compliance using noncompliance letters (NON) followed by notice of violation letters (NOV). The NON identifies the problem(s) to be resolved and a time frame for its resolution and is proceeded with a follow up inspection to verify problem(s) have been addressed. If the problem(s) identified have not been resolved, the City will issue a NOV. The NOV identifies the problem(s) to be resolved in an expected time frame, informs the responsible party that financial penalties are being assessed for each day the problem(s) remain unresolved, and identifies the date which fines will begin. A follow up inspection is also performed to verify problem(s) have been addressed. NON and NOV are typically all that is required to bring a construction site back into compliance, however, the City also has the authority to issue citations and stop-work orders, and perform the necessary work to return the site to compliance charging back the cost to the developer, using the collected security deposit bond, or collecting the costs via a special assessment against the property on the tax roll.

Recommendations

Verified through the audit process and through various WPDES permitted construction site compliance checks completed by the Department, the City is following their written procedure as described. The Department is highly encouraged by the City's construction site pollutant control program and only recommends the City continue current procedures.

POLLUTION PREVENTION PROGRAM

Overview

To comply with MS4 Part II.F, the City is required to implement and enforce a program that is consistent with all permit conditions. In general, pollution prevention activities can be grouped into six areas: inspection, maintenance, and inventory of post-construction storm water management facilities⁵; storm water pollution prevention for municipal garages, storage areas, and other municipal owned sources of storm water pollution; proper management of collected leaves and grass clippings, catch basin cleaning, and street sweeping materials; winter road management, and turf management.

Inspection, maintenance, and inventory of post-construction storm water management facilities

During the audit, it was said City Engineers (Wirtz and/or Brian Leightner), inspect nine BMPs once per year, either in the fall or spring. However, there are more than nine BMPs in the community. In 2010, the City identified approximately 190 BMPs using air photos (inventory is provided in Exhibit G) however, this inventory must still be verified. Deficiencies surrounding required documentation for this permit section (e.g., a verified and complete BMP inventory, long-term maintenance agreement for private BMPs, inspection results such, maintenance logs, etc.) was discussed.

As part of the audit, a City owned BMP, a wet pond located at Wagner Park, was inspected – Department photographs of the inspection are available upon request. Overall, both Department and City staff determined maintenance was required – slumping on the banks need repairing and muskrats must be removed to prevent further damage. While at this pond, Department and City staff discussed the important of maintaining BMPs (i.e., for effective storm water treatment) and the importance of creating a maintenance schedule. In other words, the Department understands the City has multiple matters to attend to and every project cannot be completed immediately, however, a schedule, maintenance plan, or another commitment to action must be in place to provide assurance BMPs, will be maintained. If BMPs are not maintained the City may stand to lose the pollutant reduction credit from the corresponding controls, necessitating the need for construction of additional controls to meet permit requirements.

Storm water pollution prevention for municipal owned sources

The City has one property requiring a storm water pollution prevention plan (SWPPP) – the DPW yard located at W240N3065 Pewaukee Road – adjacent to City Hall. Last updated in 2015, the SWPPP appears adequate for existing site activities – a copy of the original SWPPP with revisions is provided in Exhibit H. Overall, the DPW Yard appeared to be well organized and maintained. Salt is stored inside of a covered storage shed, the majority of equipment is stored inside storage buildings, and materials stored outside are limited (additionally, materials appear to leave the site quickly which limits their potential to generate storm water pollution. Department photographs of the inspection are available upon request.

⁵ Also referred to as storm water management controls or BMPs.

As the City is in the process of constructing a new DPW Yard, the Department provided a few temporary BMP recommendations (e.g., perimeter controls surrounding stockpiled materials) for current site and site activities.

Collected Materials: Leaf Collection, Street Sweeping, and Catch Basin Cleanings

The City of Pewaukee does not collect residential leaves. However, residents can bring leaves to the City Recycling Center (located within the DPW Yard adjacent to City Hall). Though atypical, if residential leaves are found pushed onto the street, the City sends a letter to the property owner requesting the leaves be removed.

Street sweeping in the City occurs three times per year: once after the winter thaw (March or April), a second time in June or July, and a third time in late fall (after leaves drop). During the late fall sweep, the areas around the lake are swept four or five times. Currently, street sweeping material is brought to the DPW Yard for temporary storage before being brought to the Emerald Park Landfill for final disposal. The City has plans to buy a new street sweeper in the near future which will discharge collected material directly to a dumpster, thus eliminating the need to stage material on the ground at the DPW Yard.

The City cleans catch basins at least once per year and, like street sweeping, concentrates on areas surrounding the lake. Since cleaning all of the catch basins is said to take weeks, the City follows a route (similar to a plow or street sweeping route) to track which basins have been cleaned. Catch basin materials are staged and disposed with street sweeping materials.

Winter Road Management

The City Street Superintendent, Matt Stevens, is the main person responsible for winter road management and is responsible for determining application rates (typically starting at 100 pounds per lane mile and may go up to 400 pounds per lane mile) and products (salt, brine, and pre-wetting). Trucks are calibrated each year by the City's mechanic and quantity and type of deicing products used are tracked per storm event. Storm event (e.g., duration, event type, temperature) are also tracked which Stevens uses to better determine application rates and products for each storm.

Turf Management

Required under Permit Part II.F.8, nutrient management plans based on appropriate soil tests are required on all municipally controlled properties (e.g., parks, athletic fields, golf courses, lawns, etc.) over five acres of pervious area which receive fertilizer. The City contracts with TruGreen to apply fertilizer once per year.

Required Actions

To comply with the MS4 permit, the City's program shall be consistent with permit conditions listed in Part II.F. The City's areas of non-compliance are listed below.

Storm Water Management Facilities Inspection and Maintenance

The City must inspect, maintain, and inventory post-construction management facilities (BMPs) according to permit conditions. As indicated by the submitted materials (e.g., revision to the 2010 inventory, copies of existing maintenance agreements, as-builts, etc.), the City is aware of

the documentation deficiencies and has begun gathering missing information. The Department recommends the City focus their efforts on BMPs utilized in their pollutant reduction analysis (i.e., the BMPs the City is utilizing for “credit”) first and requests the City provide the name, type, year built, location, last date of inspection, ownership (if privately-owned, confirmation if long-term maintenance agreement exists) for these BMPs.

As previously discussed, City staff recognize maintenance is needed on BMPs. To provide reasonable assurance the BMPs will be maintained, the City should develop a schedule, a maintenance plan, or other form of commitment to BMP maintenance. If BMPs are not maintained, the City may stand to lose the pollutant reduction credit from the corresponding controls, necessitating the need for construction of additional controls to meet permit requirements.

Recommendations

Collection Services: Street Sweeping and Catch Basin Cleanings

Street sweeping and catch basin cleaning are best management practices to remove pollutants carried by storm water. Consequently, this collected material should be stored in a manner that prevents stormwater runoff to surface or ground water. Ultimately, the Department recommends these materials be staged in a location that eliminates the potential to generate storm water pollution (e.g., covered or immediately disposed) and/or discharges to sanitary sewer (i.e., staged on an impervious surface that drains to sanitary or stored in liquid tight container and decanted into sanitary). However, as the City has plans to purchase new equipment that eliminates the need for staging and will be constructing a new DPW Yard, the Department’s recommendation is to continue their practice of temporary staging⁶ and incorporate best management practices for collected materials at the new DPW Yard.

Winter Road Management

The Department recognizes communities must consider multiple factors for winter road management: predicted forecasts and changing weather conditions, maintaining public safety, reducing storm water pollution, balancing the cost and staff time with other public work functions, etc. Given these complexities and obvious challenges, the Department is encouraged by the City’s actions to evaluate and reduce their salt usage. The Department recommends the City continue to track, evaluate, and update their winter road management procedures. As procedures are updated, the Department recommends the City update their written road management plan and provide training to staff to ensure they are implementing the procedure as planned.

Turf Management

Though the City applies fertilizer to turf areas over five acres, the fertilizers applied do not contain phosphorous. Thus, the Department recommends the City develop a written program which includes language that a nutrient management plan based on appropriate soil test will be conducted if fertilizers containing phosphorous are applied to turf areas over five acres.

⁶ Based on site observations, Department staff found the duration of temporarily staged collected materials sufficient.

TABLE 1

Permit WI-SO50105-3	Observations (A – Required Action*, B – Recommended Action) <i>*necessary to maintain compliance with referenced permit condition</i>
Illicit Discharge Detection and Elimination	A.1 Re-evaluate screening locations for major outfalls. A.2 Submit map with identifying all MS4 outfalls. <i>Noting that outfall screening locations should be re-evaluated, the Department requests the City submit a map identifying the current screening locations.</i>
Pollution Prevention	A.3 Identify BMPs utilized in their pollutant reduction analysis and submit the following information for said BMPs in a tabular format: BMP name, type, year built, location, last date of inspection, ownership (if privately-owned, confirmation if long-term maintenance agreement exists). A.4 Develop a schedule, maintenance plan, or other form of commitment to City owned or operated BMP maintenance. B.1 Continue to update written road management plan and provide training to staff to ensure procedures are implemented as planned. B.2 Develop a turf management written program which includes language that a nutrient management plan based on appropriate soil test will be conducted if nutrients containing phosphorous are applied to turf areas over five acres.

Attachment F

Draft Wagner Park Pond Retrofit Plans

WAGNER PARK POND RETROFITS 90% PLANS - DRAFT

CITY OF PEWAUKEE
PEWAUKEE, WI
JANUARY 25, 2023



PROJECT
WAGNER PARK
POND RETROFITS

CLIENT
CITY OF PEWAUKEE

W240 N3065 PEWAUKEE ROAD
PEWAUKEE, WI 53072
TELE: 262-691-0770

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414.944.6080 tel 414.944.6081 fax
www.aecom.com

REGISTRATION

ISSUE/REVISION

I/R	DATE	DESCRIPTION

KEY PLAN

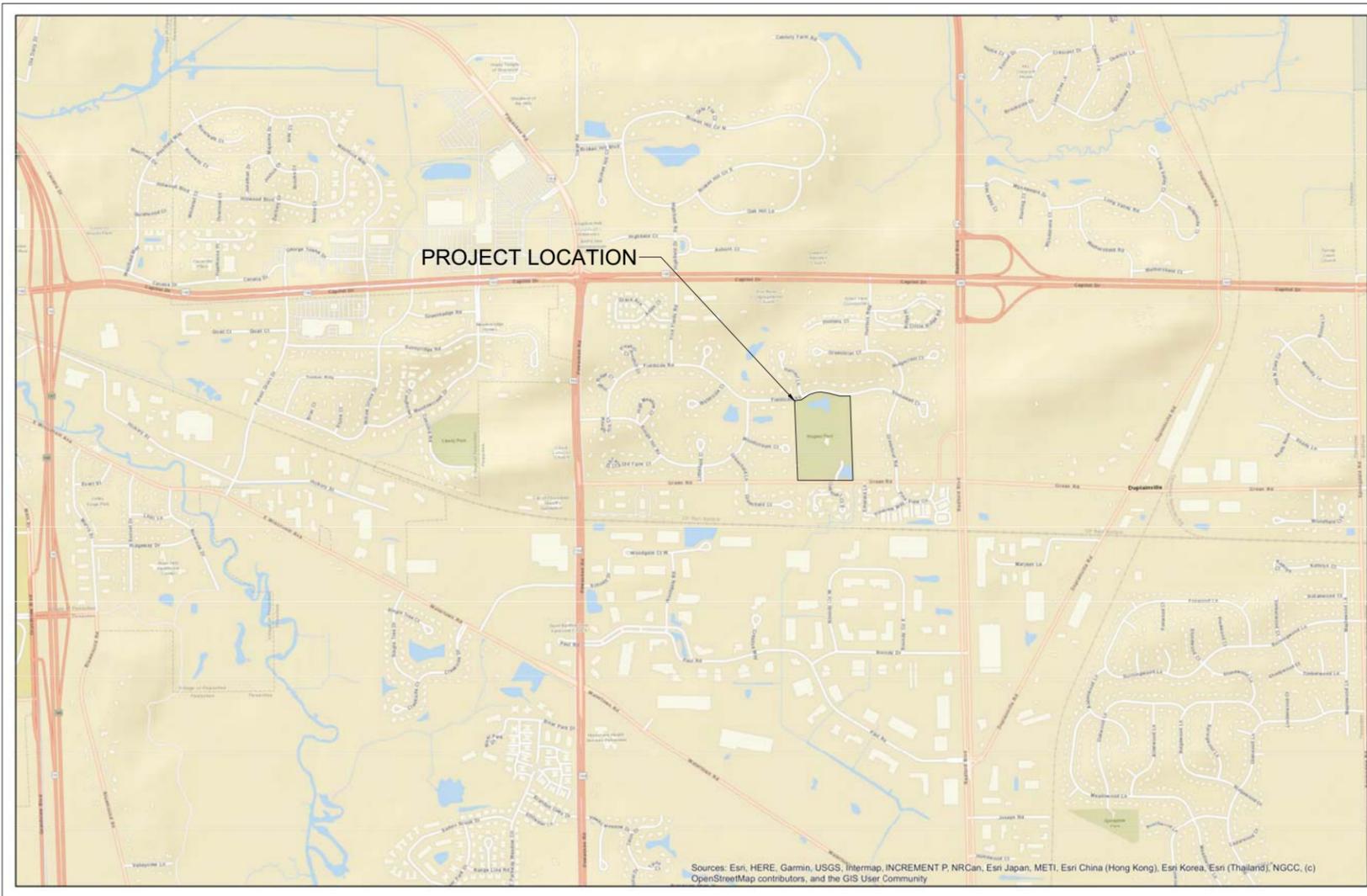
PROJECT NUMBER
60339891

SHEET TITLE
COVER SHEET

SHEET NUMBER
1

INDEX OF DRAWINGS

SHEET NO.	DESCRIPTION
1	COVER SHEET
2	LEGEND AND PROJECT INFORMATION
3	SITE PLAN OVERVIEW
4-6	EXISTING CONDITIONS PLANS
7-8	DETAILS



NOTE: MAP NOT TO SCALE

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SPECTRUM:
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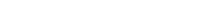
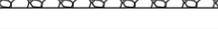
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 (262) 896-7427
 tc1657@att.com

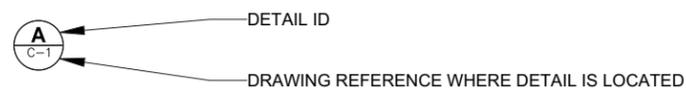
ABBREVIATIONS

B.M.	BENCH MARK
CB	CATCH BASIN
CL	CENTER LINE
C.O.	CLEAN OUT
CONC	CONCRETE
CP	CONTROL POINT
DB	DRAINAGE BASIN
EL	ELEVATION
EX	EXISTING
I.E.	INVERT ELEVATION
L.F.	LINEAL FEET
MH	MANHOLE
PVC	POLYVINYL CHLORIDE PIPE
R	RIM ELEVATION
RCP	REINFORCED CONCRETE PIPE
R/W	RIGHT OF WAY
PPOL	POWER POLE
SAN	SANITARY SEWER
SB	SOIL BORING
SS	STORM SEWER
STA	STATION
TEMP	TEMPORARY
TC	TOP OF CURB
UD	UNDERDRAIN
UG	UNDERGROUND
WDNR	WISCONSIN DEPARTMENT OF NATURAL RESOURCES
WISDOT	WISCONSIN DEPARTMENT OF TRANSPORTATION
WM	WATER MAIN

LEGEND

	SANITARY MANHOLE		PROPOSED 1' CONTOUR
	CONCRETE END SECTION		PROPOSED 5' CONTOUR
	HYDRANT		EXISTING 1' CONTOUR
	WATER VALVE		EXISTING 5' CONTOUR
	POWER POLE		SANITARY SEWER LINE
	GUY WIRE		STORM SEWER LINE
	ELECTRIC METER/PEDESTAL		OVERHEAD ELECTRIC LINE
	TELEPHONE PEDESTAL		UNDERGROUND ELECTRIC
	SIGN		UNDERGROUND PHONE
	BIRD HOUSE POST		CENTERLINE ROAD
	PROPOSED STORM MANHOLE		EDGE OF GRAVEL
	FOUND IRON PIPE		CENTERLINE OF DITCH
	FOUND REBAR		TREELINE/BRUSH LINE
	AECOM TRAVERSE POINT		LANDSCAPE AREA
	BUSH		CULVERT LINE
	DECIDUOUS TREE		DATA PRODUCED FROM SUBDIVISION PLAT
	CONIFEROUS TREE		REMOVE & SALVAGE RIPRAP
	ROCK		REVEGETATION OF EMBANKMENT
	EX STORM SEWER INLET		INSTALL RIPRAP
	EX STORM SEWER CATCH BASIN		INSTALL TOPSOIL, SEED, AND EMAT
	EXISTING RUMBLE (BROKEN CONC.)		ENGINEERED SOIL AREA
	REMOVE TREE		

DETAIL REFERENCE SYSTEM



PROJECT
**WAGNER PARK
 POND RETROFITS**

CLIENT
CITY OF PEWAUKEE

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 PEWAUKEE, WI 53072
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KEY PLAN

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SHEET TITLE

LEGEND AND PROJECT
 INFORMATION

SHEET NUMBER

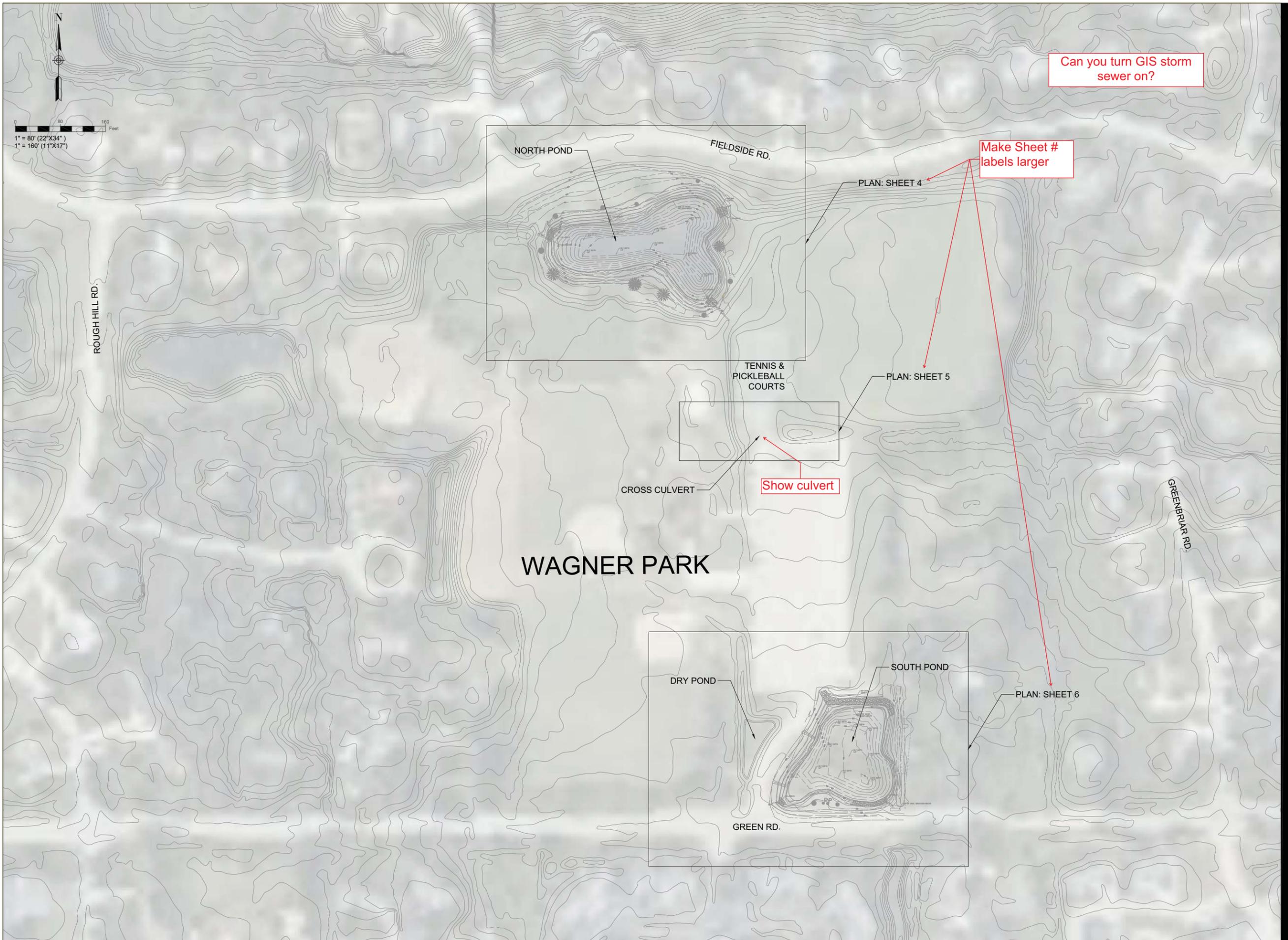
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I/R	DATE	DESCRIPTION

60339891

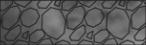
OVERVIEW

3



I/R	DATE	DESCRIPTION



-  REMOVE, SALVAGE, AND INSTALL RIPRAP
-  REVEGETATION OF EMBANKMENT
-  INSTALL TOPSOIL, SEED, AND EMAT
-  REVEGETATION OF EMBANKMENT

RESET ENDWALL AND 2 PIPES UPSTREAM.
 INSTALL STORM SEWER TIES.
 INSTALL RIPRAP.

REMOVE AND SALVAGE RIPRAP
 ABOVE HALF OF PIPE DIAMETER.

REMOVE BOULDERS
 LARGER THAN 18" DIAMETER
 AND RELOCATE TO LOCATION
 IDENTIFIED BY PARKS DEPARTMENT

OUTLET CONTROL STRUCTURE,
 SEE DETAIL **XX**.

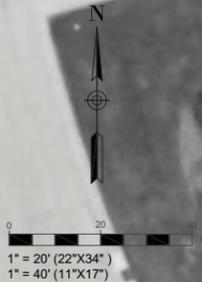
REMOVE & REPLACE **XX** OF
 EXISTING 18" CMP WITH 18" PVC.
 MATCH EXISTING INVERTS.

SEE DETAIL ON SHEET **XX**
 FOR MANHOLE WORK

REMOVE CONE SECTION.
 REPLACE WITH NEW CONCRETE
 FLAT TOP AND RESET CASTING.

RESET ENDWALL AND
 INSTALL STORM SEWER TIES.
 INSTALL RIPRAP.

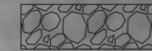
FIELD SIDE RD.





0 10 20 Feet
 1" = 10' (22"x34")
 1" = 20' (11"x17")

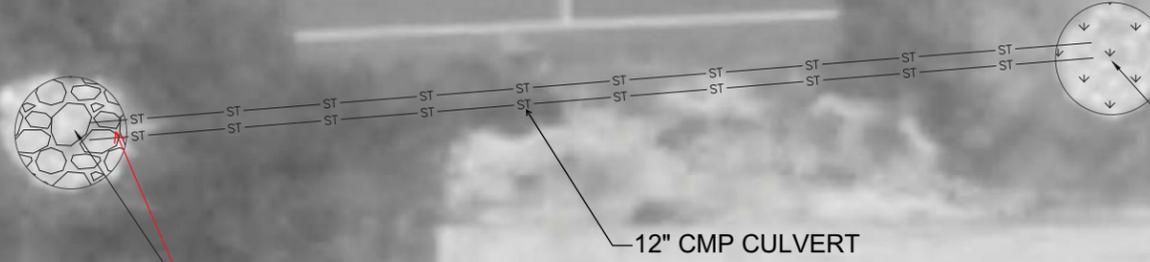
TENNIS & PICKLEBALL COURTS



INSTALL RIPRAP



INSTALL TOPSOIL, SEED, AND EMAT



REMOVE ENDWALL AND
5' OF CULVERT.
REINSTALL END WALL.

12" CMP CULVERT

REMOVE EXISTING RIPRAP
AND REPLACE WITH TOPSOIL,
SEED, AND EMAT.



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SHEET TITLE
 PROPOSED CONDITIONS CROSS
 CULVERT

SHEET NUMBER
 5



0 20 40 Feet
 1" = 20' (22"x34")
 1" = 40' (11"x17")

Add hatching



REMOVE, SALVAGE, AND INSTALL RIPRAP



ENGINEERED SOIL AREA



INSTALL RIPRAP WITH SOIL FILL AND SEED

INSTALL RIPRAP SWALE PER DETAIL C/7

SEE FLUME DETAILS ON SHEET XX

REMOVE AND REPLACE ~5' OF 4" HDPE UNDERDRAIN

Dry Pond

South Pond

SEE DRY POND DETAILS ON SHEET XX

REMOVE EXISTING CLAYEY TOPSOIL TO 12" DEPTH AND REPLACE WITH ENGINEERED SOIL, SEED AND EMAT.

INSTALL RIPRAP SLOPE PROTECTION, SOIL FILL AND SEED PER DETAIL _/7

REMOVE EXISTING 6" PVC PIPE AND BERM AND RESTORE WITH ENGINEERED SOIL, SEED AND EMAT

REMOVE & REPLACE XX' OF EXISTING 21" CMP WITH 21" PVC. MATCH EXISTING INVERTS.

21" RCP

OUTLET CONTROL STRUCTURE, SEE DETAIL XX

GREEN RD.



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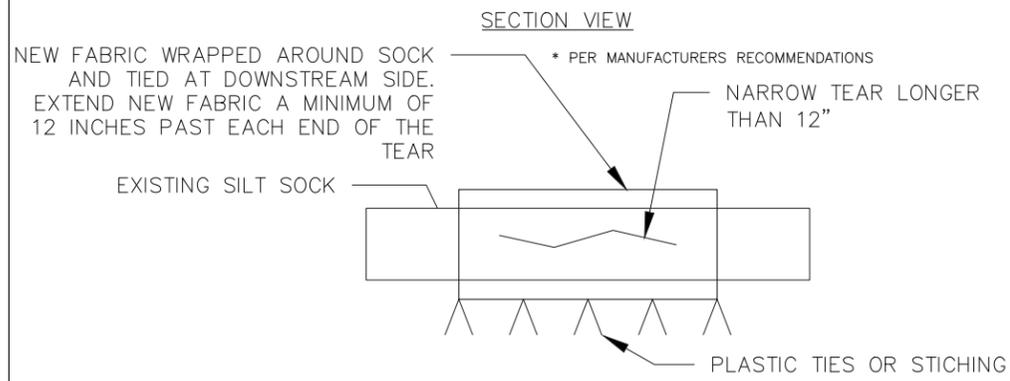
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SHEET TITLE
 PROPOSED CONDITIONS SOUTH AND DRY PONDS

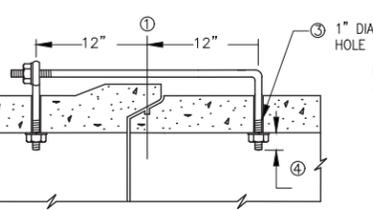
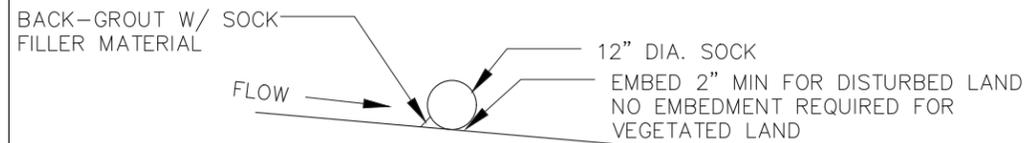
SHEET NUMBER
 6

File name: C:\ONEEDRIVE\AECOM\BWM REVIEWS - DOCUMENTS\PEWAUKEE\22.6 WAGNER PARK POND\PEWAUKEE_POND_P&F_V2_V2_90%.DWG Last saved by: TRUJILLOD Last Plotted: 2023-01-25

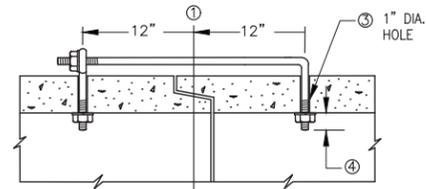
IR	DATE	DESCRIPTION



REPAIR DETAIL – TEAR GREATER THAN 12 INCHES



(MODIFIED BELL PIPE) LONGITUDINAL SECTION

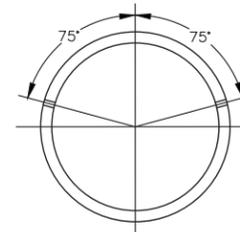


(TONGUE & GROOVE PIPE)

EYE BOLT DIMENSION TABLE

PIPE SIZE	L = LENGTH	
	TONGUE & GROOVE PIPE	MODIFIED BELL PIPE
12" TO 15"	3 3/4"	5 3/4"
18" TO 24"	4 1/2"	6 1/4"
36"	5 1/2"	7"
48"	6 1/2"	*
54"	*	*
60"	*	*

NOTE: JOINT TIE THE NEW ENDWALL AND THE EXISTING 15" PIPE SECTION TOGETHER. SEE DETAIL.



TRANSVERSE SECTION

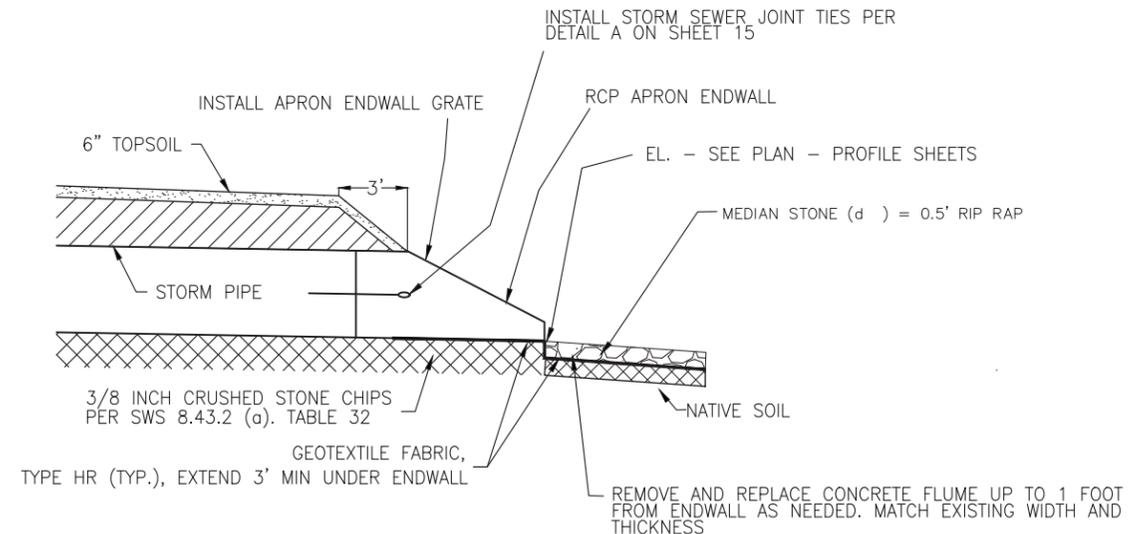
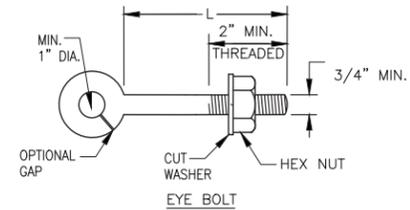
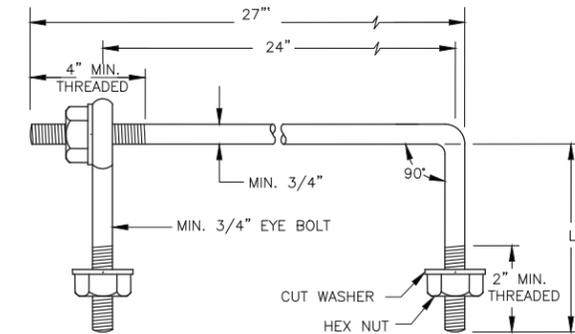
NOTE: TWO EYE BOLTS MAY BE USED WITH A 30" LONG THREADED ROD IN LIEU OF THE 90° BENT TIE ROD.

EYE BOLT AND TIE ROD

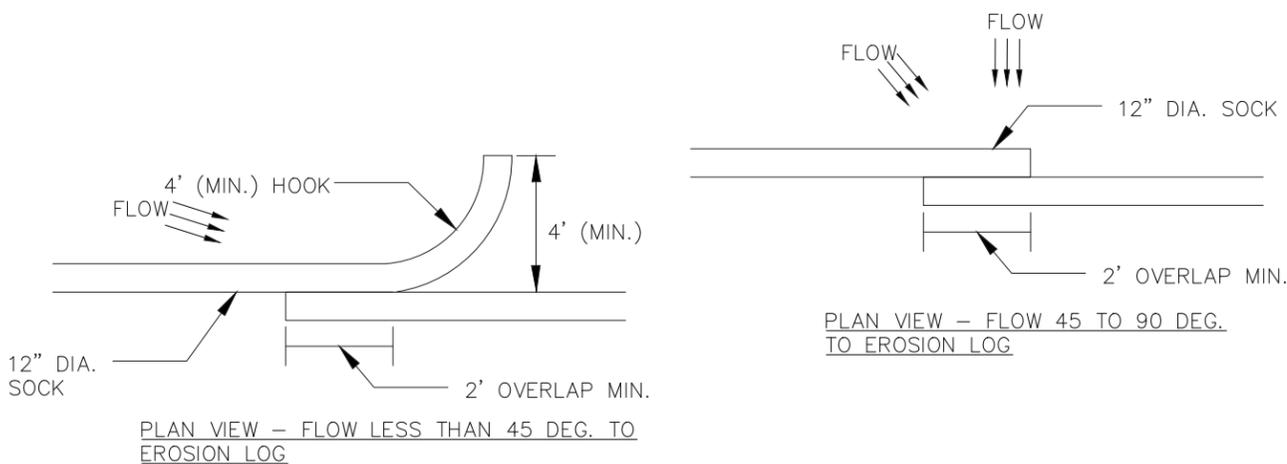
UNLESS OTHERWISE STATED IN THE CONTRACT, THE MATERIALS, FABRICATIONS AND WORK NECESSARY TO TIE REINFORCED CONCRETE PIPE WILL BE CONSIDERED INCIDENTAL TO OTHER ITEMS OF WORK.

- ① C OF TONGUE AND GROOVE OR BELL AND SPIGOT JOINTS.
- ③ HOLES SHALL BE CAST-IN-PLACE OR DRILLED 12" FROM C OF TONGUE AND GROOVE.
- ④ BOLT PROJECTION INSIDE OF PIPE SHALL NOT EXCEED 2".

A JOINT TIE DETAIL
 NOT TO SCALE

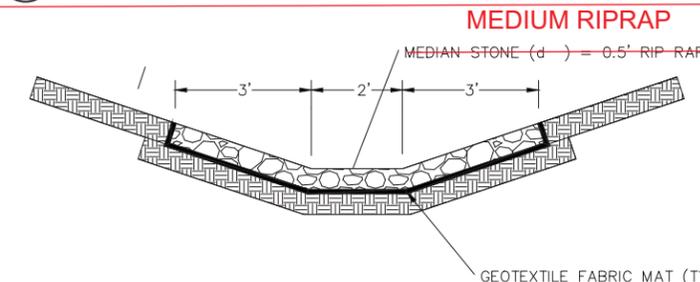


C APRON ENDWALL DETAIL
 NOT TO SCALE



D EROSION LOG INSTALLATION DETAIL
 NOT TO SCALE

Add details for:
 1. Dry Pond Section (12" Engineered Soil, seed, and Class I, Urban, Type B Emat
 2. Riprap Slope Protection (Medium Riprap, soil filled, seed, and Class I, Urban, Type B Emat, 3:1 Max slope)



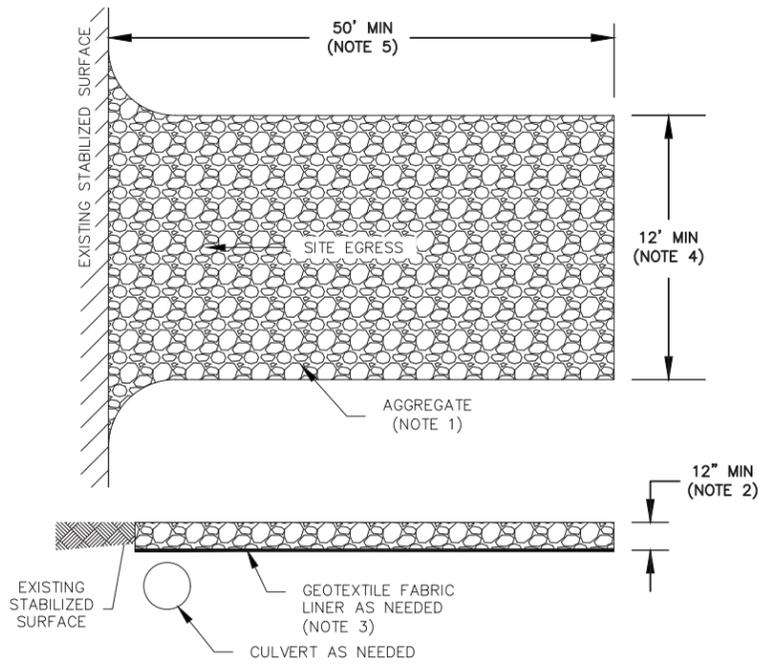
B RIPRAP DETAIL
 NOT TO SCALE

IR	DATE	DESCRIPTION

60339891

DETAILS

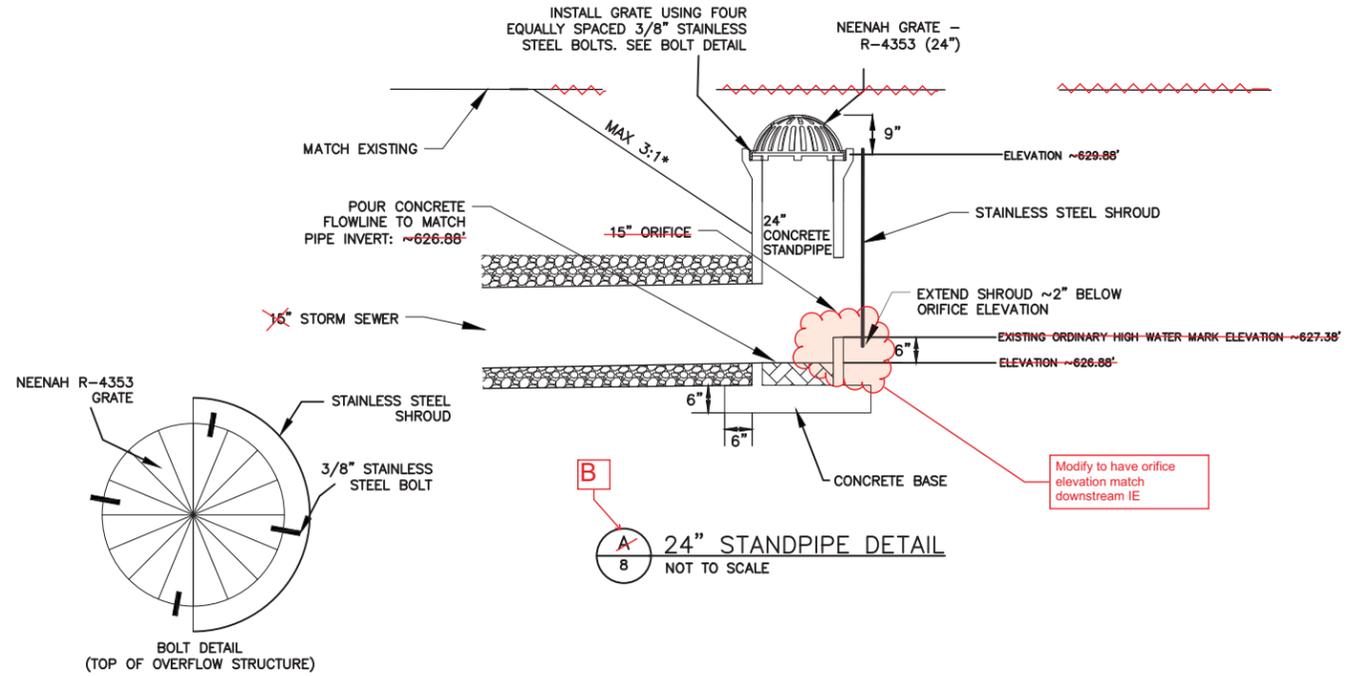
8



NOTE:

1. USE HARD, DURABLE, ANGULAR STONE OR RECYCLED CONCRETE MEETING THE GRADATION IN TABLE 1 OF WDNr TECHNICAL STANDARD 1057.
2. SLOPE THE STONE TRACKING PAD IN A MANNER TO DIRECT RUNOFF TO AN APPROVED TREATMENT PRACTICE.
3. SELECT FABRIC TYPE BASED ON SOIL CONDITIONS AND VEHICLES LOADING.
4. INSTALL TRACKING PAD ACROSS FULL WIDTH OF THE ACCESS POINT, OR RESTRICT EXISTING TRAFFIC TO A DEDICATED EGRESS LANE AT LEAST 12 FEET WIDE ACROSS THE TOP OF THE PAD.
5. IF A 50' PAD LENGTH IS NOT POSSIBLE DUE TO SITE SITE GEOMETRY, INSTALL THE MAXIMUM LENGTH PRACTICABLE AND SUPPLEMENT WITH ADDITIONAL PRACTICES AS NEEDED.
6. IN LIEU OF A STONE TRACKING PAD, CONTRACTOR MAY UTILIZE OTHER TRACK OUT CONTROL PRACTICES IN ACCORDANCE WITH THE WDNr TECHNICAL STANDARD 1057.

A
8 **STONE TRACKING PAD**
NOT TO SCALE



SEEDING SPECIFICATIONS:

TEMPORARY:

1. USE ANNUAL OATS AT 3.0 LB/1,000 SF FOR SPRING AND SUMMER SEEDING.
2. USE WINTER WHEAT OR WINTER RYE AT 3.0 LB/1,000 SF FOR FALL SEEDING AFTER SEPTEMBER 15.

PERMANENT:

1. TURF GRASS SEED MIX: USE REINDERS INC DELUXE 50 SEED MIX AT 125 LB/ACRE

FERTILIZING SPECIFICATIONS:

TEMPORARY AND PERMANENT:

1. USE WISDOT "SOWING METHOD" TYPE A OR B AT 5.5 LB/1,000 SF

GRADING AND EROSION CONTROL NOTES

1. FOLLOW CONSTRUCTION SEQUENCE NOTED ON THIS PAGE UNLESS OTHERWISE DIRECTED IN THE FIELD BY THE OWNER, OWNER'S REPRESENTATIVE OR WDNr REPRESENTATIVES.
2. CONTRACTOR IS REQUIRED TO CONDUCT AND RECORD A MINIMUM OF WEEKLY EROSION CONTROL INSPECTIONS AND WITHIN 24 HOURS OF RAINFALLS OVER 0.5 INCHES. ALL MAINTENANCE SHALL BE CONDUCTED WITHIN 24 HOURS. RECORDS OF INSPECTIONS AND MAINTENANCE SHALL BE KEPT ON SITE AND MADE AVAILABLE UPON REQUEST.
3. EROSION CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR UNTIL FINAL ACCEPTANCE OF THIS PROJECT. EROSION CONTROL MEASURES SHOWN ARE THE MINIMUM PRECAUTIONS REQUIRED. ADDITIONAL MEASURES, AS REQUESTED BY OWNER, OWNER'S REPRESENTATIVE AND/OR WDNr REPRESENTATIVES SHALL BE INSTALLED/REPAIRED WITHIN 24 HOURS.
4. INSTALL TRACKOUT CONTROL PER WDNr TRACKOUT CONTROL PRACTICES #1057 AND PERIMETER CONTROLS PRIOR TO ANY LAND-DISTURBING ACTIVITIES. CONTRACTOR SHALL REMOVE ANY SEDIMENT TRACKED ONTO ADJACENT ROADS BY MEANS OF CONTAINED STREET SWEEPING (NOT BROOMING OR FLUSHING) AT A MINIMUM OF THE END OF EACH WORK DAY OR MORE AS NEEDED.
5. LOCATION(S) OF SOIL STOCKPILES, INCLUDING TOPSOIL, STORED ON SITE SHALL BE SUBJECT TO APPROVAL OF OWNER. SILT FENCE SHALL BE PLACED ON THE DOWNSTREAM SIDES OF THE STOCKPILE. SOIL STOCKPILES STORED FOR MORE THAN 7 CONSECUTIVE DAYS SHALL BE TEMPORARILY STABILIZED (E.G. TEMPORARY SEEDING, MULCHING, TARPING, EROSION MATTING, ETC).
6. DEWATERING - FOLLOW WDNr TECHNICAL STANDARD DEWATERING #1061 AND THE CITY OF PEWAUKEE TECHNICAL STANDARDS. NOTIFY WDNr IF DEWATERING IS SCHEDULED TO OCCUR IN AREAS OF SOIL AND/OR GROUNDWATER CONTAMINATION, OR IF DEWATERING WILL OCCUR FROM A HIGH CAPACITY WELL (70 GPM OR MORE). DEWATER ONLY AFTER THE APPROPRIATE WDNr DEWATERING DISCHARGE PERMIT HAS BEEN APPROVED. PROVIDE ANTI-SCOUR PROTECTION AND MAINTAIN NON-EROSIVE FLOW DURING DEWATERING. ALL PUMPED EFFLUENT FROM DEWATERING OPERATIONS (TRENCH DEWATERING OR OTHERWISE) SHALL BE DISCHARGED TO A GEOTEXTILE FILTER BAG. THE GEOTEXTILE BAG SHALL BE PLACED ON VEGETATED/STABILIZED GROUND AND DISCHARGE TO A SEDIMENT BASIN OR TRAP. SHOULD NO BASIN EXIST, THE GEOTEXTILE BAG SHALL BE PLACED ON TYPE R GEOTEXTILE FABRIC AND SURROUNDED BY A SEDIMENT BALE BARRIER CONFORMING TO WDNr TECHNICAL STANDARD SEDIMENT BALE BARRIER #1055. THE TYPE R GEOTEXTILE FABRIC SHALL BE BROUGHT UP THE SIDES AND OVER THE TOP OF THE SEDIMENT BALES AND SECURED. DISCHARGE SHALL NOT BE ALLOWED TO FLOW OVER UNPROTECTED GROUND. IN NO CASE SHALL PUMPED WATER BE DIVERTED OUTSIDE THE PROJECT LIMITS PRIOR TO SEDIMENT REMOVAL.
7. SEED, FERTILIZER, AND EROSION MAT SHALL BE APPLIED WITHIN 7 DAYS AFTER FINAL GRADE HAS BEEN ESTABLISHED. IF DISTURBED AREAS LEFT INACTIVE FOR 14 DAYS SHALL BE STABILIZED WITH TEMPORARY SEED AND MULCH.
8. NON-CANNELIZED DISTURBED LAND AREAS: PROVIDE CLASS I, URBAN, TYPE B EROSION CONTROL MATTING AND INSTALL AND MAINTAIN PER WDNr TECHNICAL STANDARD NON-CANNEL EROSION MAT #1052 IMMEDIATELY FOLLOWING FINAL GRADING, PREPARATION, AND SEEDING.
9. CHANNELIZED DISTURBED LAND AREAS: PROVIDE CLASS I, URBAN, TYPE B OR CLASS II, TYPE C EROSION CONTROL MATTING AS SHOWN ON THE PLANS OR DIRECTED IN THE FIELD AND INSTALL AND MAINTAIN PER WDNr TECHNICAL STANDARD CHANNEL EROSION MAT #1053 IMMEDIATELY FOLLOWING FINAL GRADING, PREPARATION, AND SEEDING.
10. DUST CONTROL: FOLLOW WDNr TECHNICAL STANDARD DUST CONTROL #1068 TO MINIMIZE EXCESSIVE DUST BY SPRINKLING WATER, APPLYING TACKIFIERS, OR APPLYING SOIL STABILIZERS AS NECESSARY.

Attachment G

Comprehensive Storm Water Management Plan Proposal

PROPOSAL FOR

Comprehensive Storm Water Management Plan

Submitted to City of Pewaukee,
Department of Public Works Engineering Division

August 1, 2022

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the G

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6. Budget	31

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Submittal Cover Letter



1. Submittal Cover Letter

August 1, 2022

City of Pewaukee
Attn: Magdelene Wagner, PE, Director
Department of Public Works, Engineering Division
W240N3065 Pewaukee Road
Pewaukee, WI 53072

SUBJECT: Comprehensive Storm Water Management Plan

Dear Ms. Wagner,

AECOM Technical Services, Inc. (AECOM) is prepared to develop a storm water management plan (SWMP) with recommended alternatives for each drainage basin to help the City of Pewaukee (the City) achieve its hydraulic and hydrologic (H&H) performance and water quality goals. The plan will comply with the City's storm water requirements and with the current Wisconsin Department of Natural Resources (WDNR) guidelines for conducting city-wide water quality analysis in Total Maximum Daily Load (TMDL) areas, in preparation of the Fox River (Illinois) TMDL guideline release.

AECOM has a proven approach for this project, based on a combination of the knowledge and experience embodied in our extensive storm water planning portfolio. Helping the City achieve its goals for its Municipal Separate Storm Sewer System (MS4) is paramount to AECOM and will be accomplished by providing a team that is:

 **INVESTED** As part of the local community, we take a stewardship approach in delivering successful storm water modeling projects throughout southeast Wisconsin using our offices in Milwaukee and Middleton. Our project manager, Steve Parse, has extensive knowledge of the project area and the City's scope of work. This knowledge will provide efficient navigation of the City's processes and procedures to meet the project's schedule of submitting a final, completed SWMP by September 2024.

 **SKILLED** There will be no learning curve with our team. AECOM understands the critical role of effective data processing and management of the City's storm water assets. Our proposed Senior Technical Lead, Ashley Leisgang, has been the technical lead on nearly identical scoped projects throughout Wisconsin and the US. In addition, we have composed a team of storm water modelers that have created XPSWMM models and WinSLAMM models for a number of our clients including previous City of Pewaukee projects. This experience and knowledge will provide a cost benefit to the City.

Although this proposal highlights our qualifications and experience, we are most interested in demonstrating our commitment to you and your staff through responsive service that produces project deliverables of which we can all be proud. This commitment specifically includes respecting schedule constraints and working diligently to serve proactively as advocates for your storm water program. Thank you for giving us this opportunity to be considered for this important work. Steve Parse will be this project's point of contact, and he can be reached at 414.944.6147.

Sincerely,

AECOM Technical Services, Inc.



Steve Parse, PE
Project Manager (Single Point of Contact)
1555 N. RiverCenter Drive, Ste 214
Milwaukee, WI 53212
T: 414.944.6147
E: steve.parse@aecom.com



Ross Hillsman, PE
Principal in Charge (Authorized Signatory)

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Methodology



2. Methodology

For AECOM, locally committed leadership means we will be responsive to all project needs. We are your neighbors as well as stakeholders in this project, and therefore we are both professionally and personally vested in Pewaukee’s success.

Project Understanding

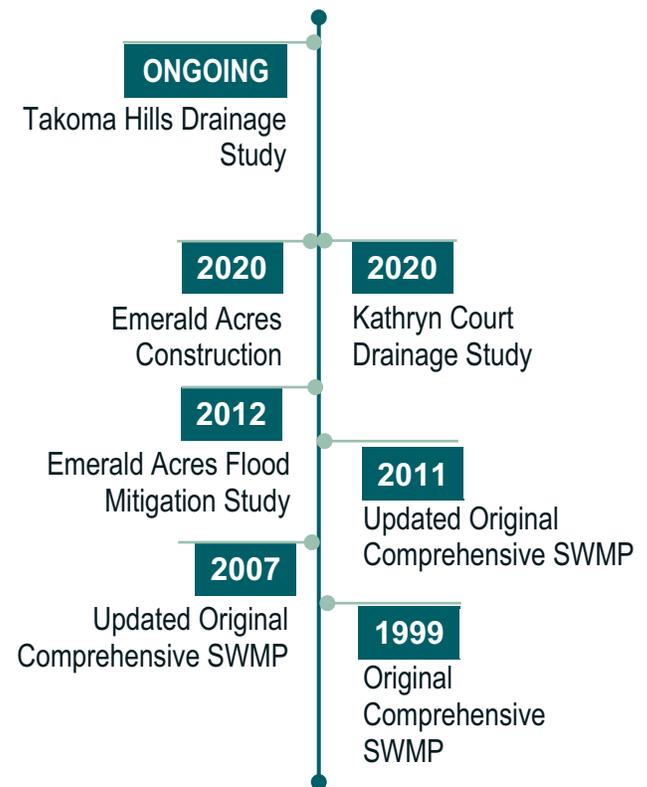
In 1999, the City of Pewaukee (the City), with AECOM, completed a comprehensive SWMP addressing the city-wide storm water quantity and quality. The planning effort looked to: establish a set of project objectives; describe the data compiled to characterize the study area and to perform the required analysis; detail the H&H analysis; detail the water quality analysis; identify critical sources of nonpoint pollution and flooding; formulate and evaluate alternatives; prepare an implementation plan; and prepare a report documenting the methods, analysis and findings of the planning effort. This study also concluded the City was achieving an approximate 28% reduction in total suspended sediment (TSS) loading. The plan also contained recommendations for improvements throughout the City.

The plan was since updated in 2007 and 2011 by AECOM, to update the water quality analysis and prepare program components of the City’s Wisconsin Pollutant Discharge Elimination System (WPDES) permit. Since the City systematically implemented many recommendations in the past 10 years, the WinSLAMM analysis revealed the City achieves a 59% TSS reduction, primarily through storm water management ponds and roadside grassed swales. Because of modeling limitations at the time, these two storm water control practices were not able to be modeled in series. However, updates to the WinSLAMM model allows for these storm water control practices to be modeled in combination. The following scope of work incorporates those changes into the storm water quality analysis. In addition, this study incorporates the total phosphorous reduction for these practices.

A small-scale study was prepared by AECOM in 2012 to analyze and provide recommendations to mitigate flooding within the Emerald Acres Region along Green Road. Planning efforts by the Southeastern Wisconsin Regional Planning Commission (SEWRPC) include the Pewaukee River Watershed Protection Plan (CAPR 313), the Lake Management Plan for Pewaukee Lake (CAPR 58), Pebble Creek Watershed Protection Plan (CAPR 284) and a Comprehensive Plan for the Fox River Watershed (Planning Report No. 12).

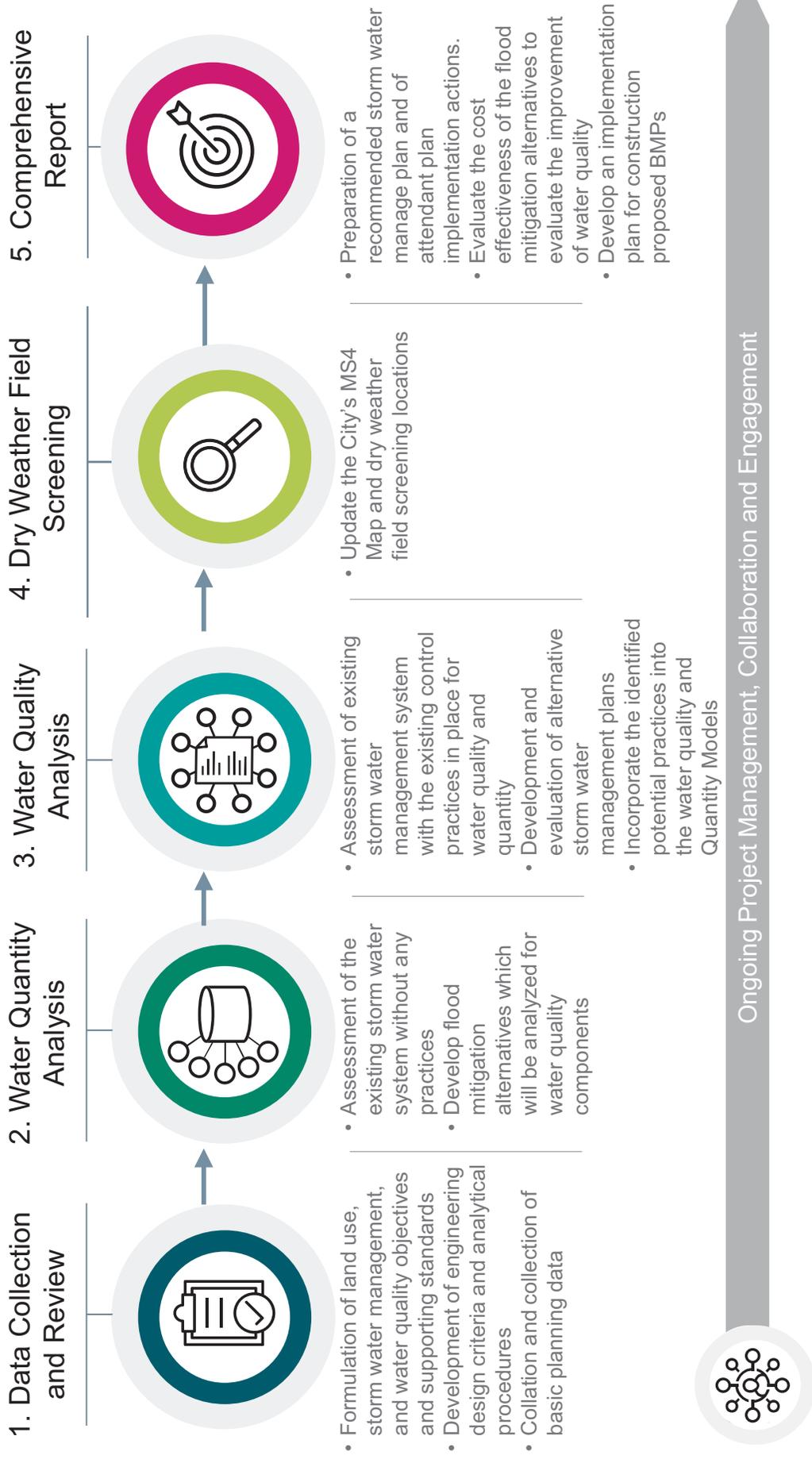
AECOM supported the City with previous SWMP efforts. Our team is well versed in this type of work and recent experience developing flood mitigation and TMDL focused storm water plans throughout Wisconsin will allow the City to accomplish the desired goals for this project.

Leveraging our history of more than 23 years working with the City of Pewaukee, our team will provide the necessary expertise for this project, carefully factoring proven approaches based on past successful projects.



The City has five major components they would like analyzed as part of this study. This study will weave between water quality and quantity, prioritizing projects that improve both aspects.

Figure 1. Proposed Workflow and Objectives



Scope of Work



Task 1 – Data Collection and Review

Task 1.1 - Data Collection

AECOM will review the past citywide SWMP Update project, previous subbasin drainage studies, and existing city Geographic Information System (GIS) data and then obtain any data needed for the project. The data to be used will be reviewed for the city-wide water quality loading analysis and the city-wide flood mitigation study.

Regarding water quality, the input data and WDNR modeling guidance to be used for the TMDL analysis differs slightly from the data used for the original MS4 permit analysis. The TMDL analysis will follow the WDNR document “TMDL Guidance for MS4 Permits: Planning, Implementation, and Modeling Guidance”.

The following GIS shapefiles are needed for use in the analysis:

- Municipal Boundary
- Watershed Boundaries
 - Watershed boundaries provided by WDNR will be updated to align with city watershed boundaries, storm sewer mapping, and more precise topographic information.
 - Existing city subbasin data will also be updated based on current storm sewer system mapping and municipal limits. AECOM will then group the subbasins into the WDNR watersheds.
 - This determination will be based upon 1 foot contour data created from the digital terrain model originating from the 2015 (or most recent) Waukesha County wide LIDAR project. Contour elevations are from the Waukesha County data are referenced to North American Datum of 1988. Significant internally drained areas which do not contribute runoff to downstream areas will also be identified.
- Storm Water Conveyance Mapping
 - Review and update the storm water conveyance system consisting of swales, roadside ditches, storm sewers, culverts, and channels (both natural and constructed).
 - Update the outfall classification for illicit discharge
- Soils
 - The USGS Soil Survey data will be used as a starting point to create a soils layer with the hydrologic soil group needed for the WinSLAMM analysis.
- Land Use
 - Water Quality Modeling
 - Existing Data on the existing land use in the City will be based off of the 2020 aerial photo. The existing 2015 land use provided by the City will be used as the starting point. Land use to characterize areas outside of the City’s municipal boundary that drain into the City will be based on existing 2020 aerial photography and the Waukesha County Development Plan.
 - Water Quantity Modeling
 - CN Values will be assigned to the standard land use designations for use in the hydraulic model.
 - 2050 Neighborhood Plan and city development standards will be evaluated and incorporated into the GIS file for storm water quantity modeling only. Recommendations to city development standards will be provided.

- **Optional Excluded Areas for Water Quality Modeling**

The following land use will be categorized and excluded from the water quality modeling per WDNR guidance. However, this land use will be included in the hydrologic and hydraulic modeling.

- Undeveloped/agricultural lands
- Industrial permitted lands
- Riparian lands
- Internally drained areas
- County/state right-of-way areas within the municipal boundary land use.

There is guidance for optional and mandatory TMDL excluded areas which is slightly different from the original MS4 analysis. In general, unless management measures improve water quality above the required reductions, areas that are allowed to be excluded should be removed from the analysis. WDNR is taking greater measures to review and confirm excluded areas than it had in the past. It is important that the areas identified for exclusion be confirmed with owning agencies to the extent possible at this step to avoid over- or under-recognizing land for the analyses. AECOM will conduct this analysis in accordance with the Administrative Code and current WDNR guidelines.

- **Climate**

- Climate data will be obtained from SEWRPC, the National Oceanic and Atmospheric Administration (NOAA), and other relevant resources. The climate in the vicinity of the study area will be characterized. This characterization will include temperature, precipitation, snow cover, and frost depth. Seasonal variations will be identified as necessary.

- **Water Quality Indicator Selection**

One meeting will be held with AECOM, city staff, and potentially WDNR during this task.

After each of the individual GIS files are finalized, they will be merged into one single feature class within a Geodatabase. This singular large file (**base file**) will contain specific coding for individual polygons which will be used for the WinSLAMM loading analysis and further refined for the H&H analysis.

Task 1.2 - Data Review - Review SEWRPC Studies and Summarize

Previous SEWRPC studies have contributed to an understanding of basin flood management needs for the City's water bodies. The previous studies will be used to generate a working knowledge of possible areas of deficiency in the City and aid in determining any additional data needs. AECOM's project team is experienced and proficient at reviewing prior watershed studies, and our familiarity with a variety of modeling software allows us to extract the necessary information and discover possible deficiencies.

The major waters within the City shall be derived from the WDNR designations and goals for the surface water, water use, and the objectives and standards developed by SEWRPC under the Pewaukee River Watershed Protection Plan (CAPR 313), the Lake Management Plan for Pewaukee Lake (CAPR 58), the Pebble Creek Watershed Protection Plan (CAPR 284) and A Comprehensive Plan for the Fox River Watershed (Planning Report 12) planning efforts. The reports will be evaluated and summarized for:

- **Description and Assessment of Existing Storm Water Management Systems**
 - Description of Streams and Watercourses
 - Engineered Storm Water Management Facilities
 - Wetlands
 - Nonpoint Source Water Pollution Control Facilities
 - Description and Assessment of Biological Conditions
 - Legal and Institutional Measures
 - Storm Water Drainage Problems



Task 2 – Water Quantity Analysis

Task 2.1 - XP-SWMM Model Development

The watershed delineation, land use designation, and storm water conveyance systems created in Task 1 will be used for the model hydrology development. The GIS files will be further evaluated to calculate the necessary data for hydraulic modeling. Flow paths, CN values, and other factors will be prepared for each subbasin.

Following the hydrology development, a hydraulic model will be constructed to analyze the flood extents in existing conditions. The City has indicated XP-SWMM 2D version 2020.1 or later, shall be considered for use. Because of the 2D size limitations in XP-SWMM, the City of Pewaukee's watersheds will be managed through multiple models separated by watersheds. We will build a Digital Terrain Model (DTM) for each of the models using the available LiDAR data for the City. If necessary, the interconnection between the watersheds will be evaluated and incorporated into the bounding watersheds. In addition, the City's right-a-way file, and land use files will be used to import pervious area, roads, and impervious area into the 2D portion of the XP-SWMM model.

Data described in the existing conveyance system of pipes, ditches, culverts, and the creek within the project areas will be assembled and evaluated. Storm sewers equal to and greater than 15 inches and culverts 18 inches and greater, will be included in the model. Components will generally include road crossing culverts regardless of size, in critical areas. Private storm sewer and culverts are excluded from the analysis. In areas with many driveway culverts, generalization may be applied to the model. Where the GIS data are incomplete with pipe inverts, diameter, or material, assumptions will be made based on the surrounding pipes. Since the DTM built within the XP-SWMM model does not pick up detailed elevations of ditches and creeks, these will be entered using the XP-SWMM 1D analysis process. The City's ditches will be evaluated and categorized up to five (5) types, matching the grassed swale infiltration testing. These types will then be entered into the XP-SWMM Model as 1D and connected to the 2D grid. Engineered storage/detention areas will be modeled using XP-SWMM's 1D algorithms and the top of the pond will be connected to the 2D surface. The twenty-six (26) public BMPs will be incorporated into the existing conditions model, along with the thirty-six (36) Private Site Storm Water Control practices with maintenance agreements.

We will develop tailwater conditions for each navigable stream to apply the outfalls of the modeled system and account for the impact on conveyance of elevated river stages on the performance of the system. The FEMA Flood Insurance Studies (FIS) for each of the waterbodies will be researched. The base flood elevation to be applied for the respective waterbodies will be discussed with City staff and applied at the watershed outfalls. It is typical to apply a 10-year flood elevation for the 100-year storm event. The 2-year flood elevation will be considered for the 10-year storm event. Normal water level conditions will be applied for the 1 and 2-year storm events.

The model will then be executed for the 1-year, 2-year, 10-year and 100-year storm events, for the 24-hour duration. Rainfall data to be used in conjunction with TR-55 methodology will be Atlas 14 precipitation depths for the 24 hour duration storm and the NRCS Wisconsin MSE 3 Precipitation distribution.

- 1-year, 24-hour: 2.38 inches
- 2-year, 24-hour: 2.69 inches
- 10-year, 24-hour: 3.80 inches
- 100-year, 24-hour: 6.17 inches

After the Existing Conditions models are finalized, we will incorporate the planned land use into the existing conditions. The future land use with existing infrastructure will be the basis of the flood mitigation alternative evaluation.

Figures illustrating the existing flood extents will be developed to illustrate the maximum extent of flooding during each storm event for each of the eight (8) watersheds like. For example, Figure 2 demonstrates the existing conditions results for the 25-year, 30-min storm event for a watershed in Oshkosh. We will utilize the figures created for the City's Existing Conditions to evaluate critical points within the watershed. Depending on the scaling, multiple watersheds maybe combined on the Figures. After the watersheds are analyzed, we will meet with the City to determine if the results match historic knowledge, and the 10 most critical sites will be selected based on discussions with the City. From there possible flood mitigation alternatives will be discussed. The proposed improvements will be incorporated into the model to determine their benefit. Figure 3 illustrates the surface flooding after the improvements have been proposed for the watershed.

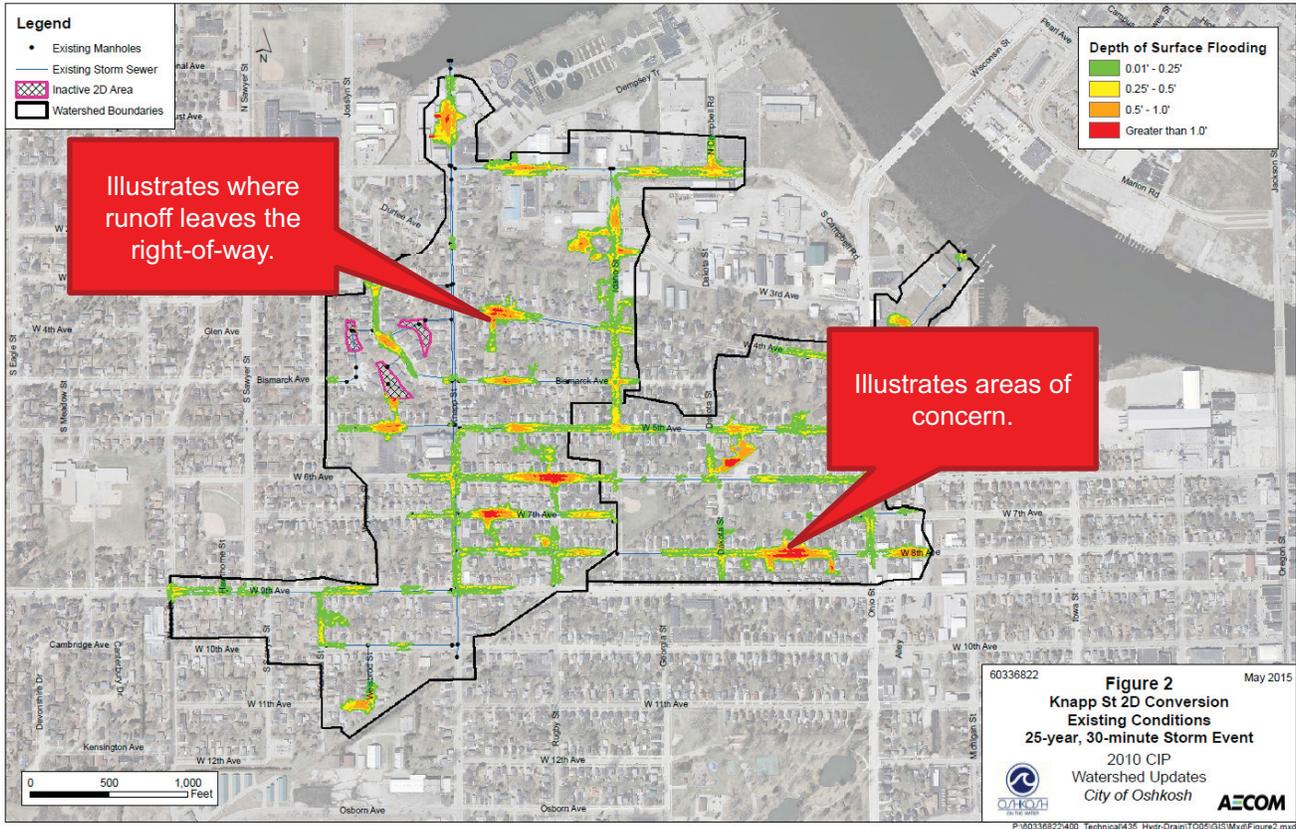


Figure 2. Example Existing Conditions Figure. City of Oshkosh, 25-year Storm Event.

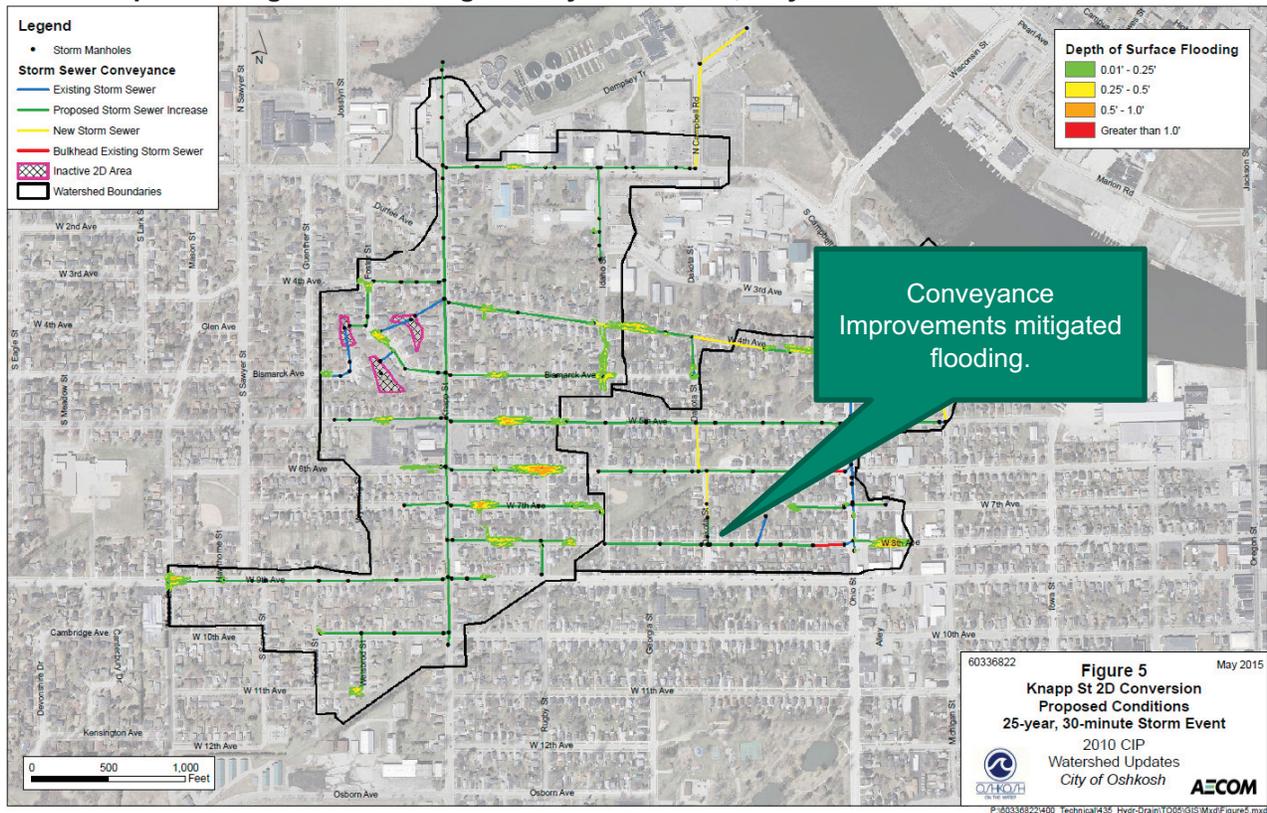


Figure 3. Example Proposed Conditions for the Knapp Street Watershed, City of Oshkosh 25-year Storm Event.

The selected alternative from the four (4) prior planning projects will be incorporated into the Existing Conditions model. These projects include the:

- Hill-n-Dale Drainage Improvement Project located in the SE1/4 of Section 12, T7N, R19E; the
- Kathryn Court Drainage Improvement Project located in the NE1/4 of Section 13, T7N, R19E; the
- Emerald Acres Flood Mitigation Project located in the NE1/4 of Section 14, T7N, R19E; and the
- Takoma Hills Drainage Project in the SW1/4 of Section 25, T7N, R19E.

Depending on implementation schedule and discussions with the City, one or more of these projects may be incorporated into the existing conditions models.

Task 2.2 - Flood Mitigation Alternatives Analysis

The City has clear goals for the solutions proposed in the SWMP. These goals will:

- Eliminate street flooding throughout the watershed for rainfall events up to a 10-year design storm.
- Prevent significant property damage and safety hazards during the 100-year, 24-hour storm event.

The existing conditions XP-SWMM model will be used as a starting point for the development of flood mitigation alternatives. It is assumed up to ten (10) critical flooding areas will need to be addressed. Previous studies and designs will be reviewed and incorporated into the model where appropriate. The evaluation will include sizing the storm water peak flow control practices with water quality in mind. Practices will be developed using a mix of green infrastructure where appropriate to enhance water quality, especially in areas that are near riparian zones or directly discharging to an impaired water body.

A list of potential flood mitigation components will be developed and refined in coordination with the City. This component list will be comprised of detention storage sites, potential replacement/relief sewer alignments, and other possible storm water management measures. Constraints such as wetlands, property boundaries, and known conflicting utilities, right-of-way/land ownership, and planning level cost estimates developed as part of the study will also be considered in the component listing. Our team will look for opportunities to mesh flood control structures with green spaces in parks for water quality improvements.

The alternatives for the minor storm water drainage systems will consist of new or replacement components sized with the ability to store and/or convey the runoff from the 10-year recurrence interval storm. All storm sewers shall have a minimum cover to the top of the pipe of 3-ft unless otherwise approved by City Engineer.

The alternative evaluations for the major storm water drainage system will utilize the 100-year recurrence interval. The proposed solutions will be checked to confirm the peak flows flowing overland maintain a 15-foot horizontal separation and 2-foot vertical separation from buildings. In addition, the proposed detention and infiltration ponds shall maintain 1-foot of free board for the 100-year water surface elevation and the crest elevation of the emergency spillway.

Another opportunity for flood mitigation would be to implement green infrastructure within the right-of-way (ROW). Medians could be converted to opportunities for infiltration, by installing biofilters or infiltration basins. Figures will also be developed to clearly present the alternatives and their impacts.

Dollars are limited, and cost of new infrastructure is always a paramount consideration. The cost effectiveness of alternatives will be at the forefront of AECOM's evaluations. Our cost estimating activities will be based on recent projects completed for the City. We will collaborate with the City to develop appropriate cost information to be applied to the alternatives analyzed for this project.

The proposed study is a planning study will identify alternatives for management of storm water and present a recommended plan. AECOM recognizes the alternatives recommended in the plan will need to progress to design and then ultimately construction in the future. Therefore, the recommended solution must be based on sound engineering design considerations and must be constructible. Our team has extensive experience in financial planning and developing optimized capital plans for storm water utilities, as well as associated infrastructure, such as, BMPs including green infrastructure. AECOM will perform the necessary conceptual engineering design in order to determine constructability and accurately model any proposed improvements. For example, based on past watershed level planning studies, preliminary design contours for a wet pond would need to be developed along with the location and inverts of the outlet structure. We follow a step-by-step process that collects the necessary data to help the City make informed and optimal financial and capital reinvestment decisions at the right time.

Figures illustrating the existing flood extents will be developed to illustrate the maximum extent of flooding during each storm event for each of the eight (8) watersheds. The results will also be documented, and a detailed report will be prepared clearly describing the analysis methods, results, and sequencing recommendations for each of the

watersheds. The report will be organized for clarity and ease of use in proceeding to the next stages of project development and implementation.

The project schedule includes review time to allow iterations between AECOM and the City for document refinements. Our intent is that the SWMP adequately documents existing conditions and recommendations in order to support future preliminary engineering, design, and other related activities such as land acquisition.

Assumptions

Only the following land use combinations will be modeled:

- Existing Conditions Model with Existing Land Use
- Existing Conditions Model with Future Land Use
- Proposed Conditions with Future Land Use

It is assumed ten (10) storm water improvements will be evaluated as potential locations for future storm water control practices, along with conveyance improvements. The future land use condition will be the only land use condition analyzed for the proposed alternatives. A meeting with City staff will be conducted to get input on any potential locations. Pertinent local storm water management planning documents will also be reviewed for any applicable BMP recommendations to include in this analysis.

Up to ten (10) conceptual figures will be creating and documenting the proposed storm water practice type, location, and invert information. Practices will need further evaluation during the design phase.

The evaluation will include additional information available from existing public files including wetland information, depth of storm sewer entering/exiting the proposed location, size of proposed storm water control practice and land availability. We will use data that is readily available (such as the WDNR Surface Water Data Viewer or the City's GIS information). Field investigations (such as soil borings or wetland delineations) are not included in this evaluation.



Task 3 – Water Quality Analysis

After the base layers are finalized in Task 1, we will also begin the TDML no-controls loading analysis using WinSLAMM v10.4 or later. This step generates the pollutant loading the City is producing without considering the storm water best management practices that are currently implemented throughout the city for each reachshed. The following scope of work will utilize available information from the prior plan and updates. The modeling will be revised to follow the TMDL guidance, opposed to the MS4 modeling guidance used for the last water quality calculation. The Fox River (IL) Basin does not have a TMDL at this time, however one is currently in development. The City’s MS4 system area will be analyzed following the current WDNR guidelines for conducting city-wide water quality analysis in TMDL areas to prepare the city for when the TMDL is released.

Task 3.1 - Establish No-Controls Load by Reachshed (TSS and TP)

The first step will be to generate the no-controls loading for each of the four (4) reachsheds for Total Suspended Solids (TSS) and Total Phosphorous (TP). We will:

- Create WinSLAMM Standard Land Use Files
 - The GIS base file will be used to create the multiple WinSLAMM standard land use files that correspond to each specific code that was identified. These WinSLAMM files represent the no-controls loading scenario in the city.
- Calculate TMDL No-Controls Load
 - The loading results from the WinSLAMM files will be linked to the GIS base file to calculate the no-controls loading for TSS and TP by reachshed.
- The efforts and results of the preceding tasks will be consolidated into the report which will:
 - Summarize the current water quality regulations and requirements, document modeling methodology, compile the TSS and TP pollution loading results for no controls load.

In general, the no-controls analysis represents the urban storm water pollution with the desired exclude areas removed from the analysis and the existing water quality best management practices not considered (street cleaning, detention basins, etc.). This establishes the “benchmark” against which TSS and TP reductions are measured.

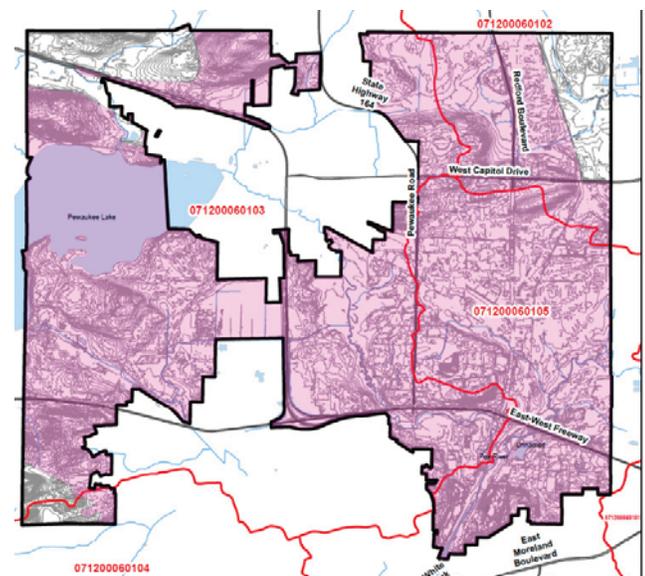


Figure 4 City of Pewaukee Reachsheds

Task 3.2 - Establish with Controls Load by Reachshed (TSS and TP)

Following the no-controls loading, AECOM will analyze the pollution reduction achieved by the storm water best management practices that are currently implemented in the City. In prior planning effort, this was referred to as Existing Conditions. The following steps are used to determine the current reduction percentages of TSS and TP achieved by the existing storm water BMPs:

Public BMPs

We will evaluate and incorporate the twenty-six (26) publicly owned storm water BMPs and non-structural BMPs into the WinSLAMM model. This will include, street cleaning, catch basin cleaning, storm water basins, grassed swales, and any potential green infrastructure practices such as: permeable pavers, asphalt, concrete, rain gardens, bioswales, constructed wetlands, etc. All existing BMPs will also be analyzed for their potential to be retrofitted to increase storm water pollutant removal efficiencies (i.e., converting a dry pond to wet pond).

Private Storm Water BMP's (with Maintenance Agreements)

We will incorporate the privately owned storm water practices that the City has maintenance agreements with. These practices include storm water basins, green infrastructure practices such as: permeable pavers, asphalt, concrete, rain gardens, bioswales, constructed wetlands, etc.

It is assumed that credit will only be taken for private BMPs with documented maintenance agreements (assuming 36) with the City. These sites will be categorized in a table to include the practice and efficiency listed in the storm water management plan. The efficiency will then be applied to the geodatabase by parcel. It is assumed that the WinSLAMM models created by the Developers from the site storm water management review process will be used for this analysis. No models will need to be created for these private sites. Since the storm water management plans do not all have the TP referenced, the original model submitted with the development will be opened and the TP function will be turned on and then run to get the TP efficiency. These efficiencies will be summarized by address in a table.

Utilizing the WinSLAMM models created for each BMP, AECOM will calculate the with-controls reduction in annual loadings for TSS and TP by reachshed all of the City's current BMPs achieve. The efforts and results of the preceding tasks will be consolidated into a report which will summarize the pollution control, TSS and TP reductions achieved by existing best management practices. The loading results will also be summarized in a graphical format as shown in Figure 5. Displaying the results in a graphical way is useful to understand which basins are producing the greatest pollutant load and is also a visual way to begin to understand where to implemented new storm water practices, which will have the greatest return on investment by focusing on areas with greater loadings.

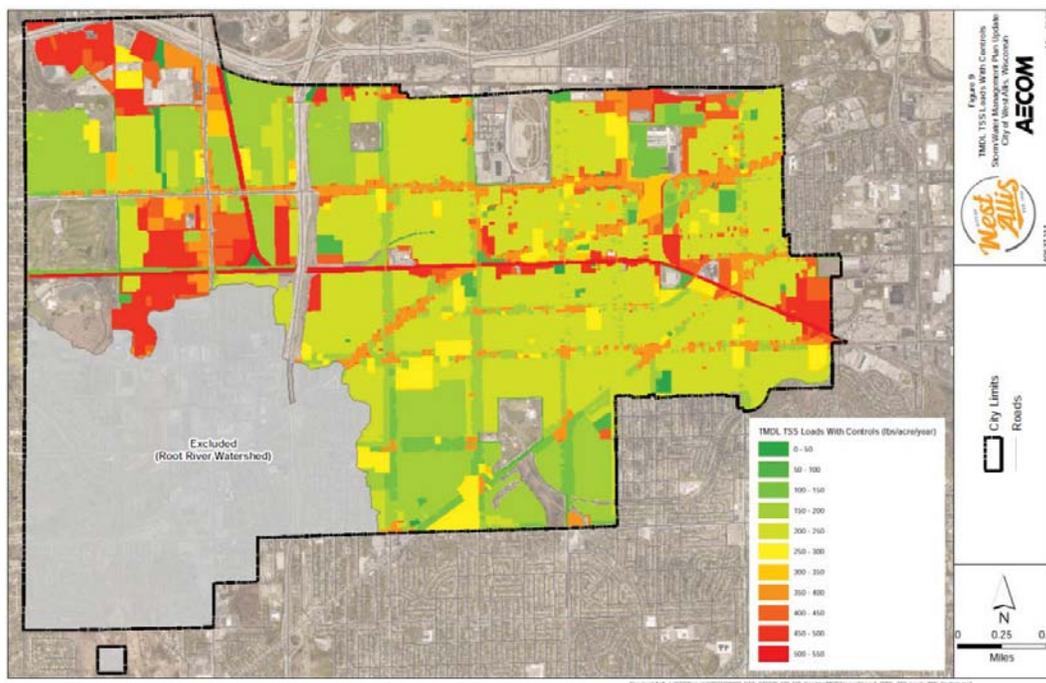


Figure 5 Example With Controls Loading (City of West Allis)

Assumptions

- It is assumed that a WinSLAMM file will need to be created for each Public BMP to determine the TSS and TP removal efficiencies. In order to model each BMP in WinSLAMM the individual site storm water management plans, associated models, or civil plan sets will be utilized if available from the City.
- If no previous SWMP, plan set, or modeling is available AECOM will have a survey crew available to obtain additional information needed for modeling such as BMP surface area, outlet structure inverts, and storm sewer sizes. This scope of services assumes if additional data is needed to be obtained from survey, a change order will be provided at that time.
- It is assumed the City provides a list and location of BMPs. This task does not include, reading through and locating old storm water management plans that the City may have.
- It is assumed 26 city owned BMPs will be modeled and 36 privately owned BMPs will be incorporated, for a total of 62 BMPs.

Task 3.3 - Establish with Future Controls Load by Reachshed (TSS and TP)

Recommended measures from the previous studies that were not implemented as well as the flood control structures identified in Task 2 will be evaluated. We will create WinSLAMM Models for the identified proposed Storm Water Control Practices to calculate the TSS and TP efficiencies. These practices may be modified slightly to balance increasing water quality benefits with flood control measures.

A review of WDNR wetland indicators and other potential inhibitors (new development, soil contamination and navigable waterways) will be researched prior to finalizing the selected sites for consideration. Wetlands need to be considered when planning storm water management facilities. Coordination and approval by permitting agencies when working in and around wetland areas can be a time consuming and costly process. These factors are increasingly causing delays in permitting new facilities and, at a minimum, adding significant cost and increasing implementation time.

Sites that are identified for inclusion in the evaluation will be modeled for TSS reduction and TP reduction on an annual basis. Cost estimates will be developed with information from the most recent bid tabs and estimates from other storm water projects within the City and surrounding area. This will be aggregated with hydraulic alternatives into a comprehensive alternatives comparison matrix that can be used to discern the best mix of alternatives through a review of quantitative and qualitative items.

Assumptions

- This scope assumes no more than ten (10) sites that will ultimately be modeled for their proposed TSS and TP reductions. Other pollutant removal effectiveness values for site specific or broader practices will be estimated based on supplemental information/research sources and engineering judgement.



Task 4 – Dry Weather Field Screening Mapping

As a part of the planning effort, AECOM will update the City's MS4 map and provide a re-evaluation of the dry weather field screening locations as a part of the City's IDDE program. Recommendations for screening locations and the screening frequency shall utilize WDNR Guidance Document #3800-2012-01,

Illicit Discharge Detection and Elimination Guidance

The updated MS4 map will incorporate the drainage facilities mapped and inventoried under a previous planning effort. GIS files of the inventoried facilities will be provided to AECOM. The MS4 map will identify:

1. All waters of the state including name and classification of the receiving water(s), identification of the receiving water as an ORW, ERW or listed as an impaired water under s. 303(d) of the Clean Water Act, storm water drainage basin boundaries for each MS4 outfall and the municipal separate storm sewer system.
2. All known municipal storm sewer system outfalls discharging to waters of the state or other municipal separate storm sewer system.
3. Major outfalls (36 inch in diameter or industrial land use) shall be uniquely identified. Priority outfalls for annual screening under the City's IDDE program shall also be uniquely identified.
4. The location and permit number of any known discharge to the municipal separate storm sewer system that has been issued WPDES permit coverage by the Department.
5. The location of structural storm water facilities including detention basins, infiltration basins, and other manufactured treatment devices. Any privately owned facility for which the City will be taking credit for pollutant removal must be separately identified from other privately owned facilities.
6. Publicly owned parks, recreational areas, and other open lands.
7. The location of municipal garages, storage areas and other public works facilities.
8. Streets and roadways.

Deliverables

The data will be organized and compiled into an ESRI ArcGIS compatible format along with an accompanying shapefile for each component. The data will be created such that City staff will be able to import the information directly into ArcGIS. The data will be provided to the City in a digital format on a portable flash drive. Two sets of hard copy maps shall be provided to the City at a scale of 1-inch equals 400-feet including the aforementioned data overlain on the 2020 aerial photo. The map sizes shall be 36-inches x 48-inches. A table of the major outfalls and the priority outfalls will be provided showing the: outfall identification, the subwatershed and subbasin the outfall is located in, the quarter section the outfall is located in, the nearest street or highway, receiving stream, type of pipe, pipe size, outfall invert elevation, tributary area, and dominant land use.



Task 5 –Comprehensive Report

Through the duration of the project, the evaluation results will be integrated into a comprehensive SWMP. This plan will summarize the existing and recommended storm water nonpoint source pollution, and storm water drainage and flooding. The plan will include an approach for the City to follow that implements storm water flooding improvements in a strategic manner. A series of figures that graphically represent the process and results of the study will be developed for the water quantity and quality analysis.

Planning level cost estimates will be developed for the selected proposed storm water control practices. The cost estimates will be developed with information from recent bid tabs for other storm water quality projects within the city and surrounding area or other sources. The cost estimates will include a contingency to address engineering and other unknown cost items. Potential sources of funding for any recommended facilities will be identified and suggested cost sharing between the City, state and the private sector will be provided.

The SWMP will clearly identify major and minor storm water management facilities, along with the costs associated with the proposed improvements. Figure 6 illustrates the future BMP cost analyses that will be performed.

Proposed BMP ID	BMP Type	Incremental Annual TSS Reduction (tons/yr)	Incremental Annual TP Reduction (lbs/yr)	BMP Construction Cost	Estimated Land Acquisition Cost	Maintenance Costs Over 20-years at 3% Cost Increase	Straight Line Depreciation Value Over 20-years (assumes 100-yr life)	Total 20-Year Annualized Cost	Annualized Cost/Ton TSS Removed	Annualized Cost/Pound TP Removed
Lapham St Median	Bioretention	0.38	2.52	\$290,000	-	\$78,000	\$58,000	\$6,800	\$17,800	\$2,800
Milwaukee Mile Ponds	Wet Ponds	91.99	477.34	\$10,950,000	-	\$4,920,000	\$2,190,000	\$355,500	\$3,900	\$800
Orchard St	Underground Storage	0.65	3.09	\$550,000	-	\$148,000	\$110,000	\$12,900	\$19,800	\$4,200
Redev Opp	Redevelopment	0.60	2.26	-	-	-	-	-	-	-
S 53rd St & Burnham St	Redevelopment	0.00	0.00	-	-	-	-	-	-	-
Vacant Lot 1	Redevelopment	0.03	0.17	-	-	-	-	-	-	-
Vacant Lot 2	Underground Storage	0.76	4.37	\$550,000	-	\$148,000	\$110,000	\$12,900	\$17,100	\$3,000
VisABILITY Center	Redevelopment	0.96	2.58	-	-	-	-	-	-	-
Walker Elementary	Underground Storage	2.34	12.94	\$1,400,000	-	\$377,000	\$280,000	\$32,850	\$14,100	\$2,600
WE Energies Corridor 2	Wet Pond	1.48	8.94	\$430,000	\$100,000	\$194,000	\$106,000	\$15,000	\$10,200	\$1,700

Figure 6 Example Future BMP Cost Analysis (City of West Allis)

A draft implementation schedule for the potential BMPs will be developed. This implementation schedule will be based on conversations with the City and prioritized with flood control in mind. This implementation schedule will be included in the SWMP and can be used as a roadmap for meeting the City’s goals and capital improvement planning.

The report will also contain figures displaying the results of the modeling, existing BMP locations, excluded areas, soil conditions, watersheds, and the potential locations of proposed BMPs. AECOM has included the effort to formulate a response and address comments from the WDNR into this project. The formal comment document and response to the WDNR modeling comments will be included in an appendix of the report. Digital and hard copies of the report will be provided for the City and for distribution to the WDNR. The digital files will include report components, WinSLAMM database model files, XP-SWMM files, and GIS shapefiles for use by the City for future planning and for WDNR.

Deliverables

Draft SWMP

In the end the City will have a Comprehensive Citywide SWMP that will:

- Document the assessment of prior SEWRPC Studies for:
 - Stream and Watercourses
 - Water Quality Conditions
 - Biological Conditions
 - Legal and Institutional Measures
- Document modeling methodology;
- Document the results of the H&H analysis;
- Compile annual no controls TSS and TP loadings for the proposed TMDL conditions;
- Document the pollution control achieved by existing management measures for proposed TMDL conditions;
- Identify the potential new storm water practices for efficiency, flood reduction benefits, and cost; and
- Develop implementation recommendations for each of the eight (8) watersheds.

AECOM will provide two (2) hard copies and one (1) PDF copy of the Draft SWMP to the City for review. A meeting will be scheduled to coordinate and discuss the City's comments. Comments from the City will be incorporated into a final SWMP. At that point in time the report will be sent to the WDNR for review for the water quality modeling components.

Final SWMP

Upon approval by the WDNR, AECOM will provide a total of five (5) copies of the report to the City, in addition, to an electronic (PDF) copy of the final report. AECOM will also provide all additional electronic files develop as part of the project including: GIS shapefiles, geodatabase, WinSLAMM modeling files, and Microsoft Excel and Word documents. Individual digital and hard copy maps shall be prepared for each alternative and recommended plan that is developed for each hydrologic unit. The maps shall be prepared on a 2020 digital orthophoto base map at a scale such that the entire map fits on an 8.5-inch by 11-inch sheet, or if necessary, an 11-inch by 17- inch sheet. A complete legend shall be included.

Individual digital and hard copies of land use maps; subwatershed, hydrologic unit and catchment area maps; shall be provided at a scale such that the entire map fits on a full size (36-inch by 48-inch) sheet. All input and output data developed for the hydrologic, hydraulic, and nonpoint source models shall be provided to the City in electronic format. Digital copies of the WinSLAMM and XPSWMM models will be provided. Files shall be named in such a manner that the alternative or recommended plan condition analyzed can be readily identified by file name. Comments that clearly describe the conditions for which the data in each file are developed shall be included in the electronic files. Additional supporting calculations necessary to supplement the model information, including hand calculations or electronic spreadsheets, shall be provided in hard copy or electronic format, whichever is most appropriate.



Ongoing Project Management, Collaboration and Engagement

Meetings

The City's representatives have a far greater understanding of the needs of the City, of the characteristics of the watershed, and of previous relevant studies than any consultant can hope to have. Furthermore, the City's representatives have their own knowledge and ideas for potential solutions to the flooding problems within the watersheds. Therefore, AECOM recognizes the importance of working in concert with the City's representatives as the proposed study proceeds.

To facilitate a collaborative approach, AECOM will conduct a series of meetings with the City staff at appropriate junctures of the project to share ideas and exchange information. Six (6) meetings are included in this scope of work including a kickoff meeting and five (5) interim meetings throughout the project to discuss milestones and project status updates. Outside of these formal in-person meetings, our goal is to maintain very close communications with the City. The management style of AECOM's Project Manager, Steve Parse, is very hands on – he appreciates regular and involved communication during execution of the project. This additional communication will be accomplished through web meetings, email, and informal meeting opportunities.

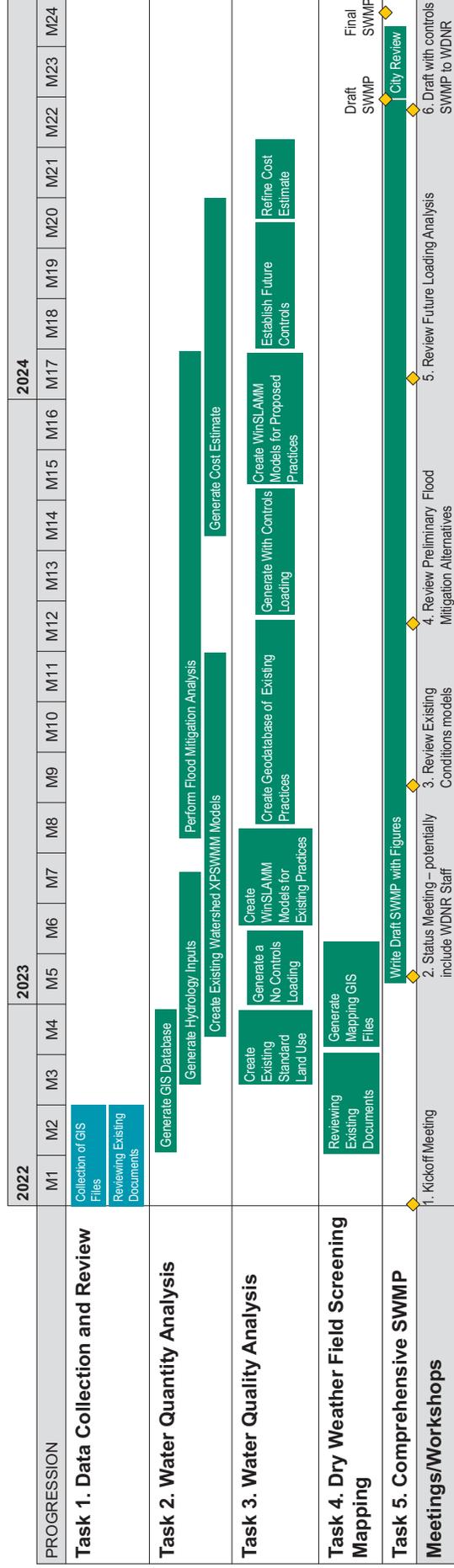
Timeline



3. Timeline

The schedule is organized with a stream workflow that follows the scope of services for this project. It is anticipated that the water quantity analysis will be initiated first, followed by the water quality analysis. After the Existing Conditions GIS files are finalized for the XP-SWMM models, it would be possible to create parallel work streams for the XP-SWMM hydraulic analysis and WinSLAMM water quality analysis. The future WinSLAMM analysis will be developed after the alternatives are selected for the XP-SWMM model alternatives.

Figure 7 Project Timeline



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Qualifications and Experience



4. Qualifications and Experience

Working together throughout the last 23 years, AECOM and the City have developed and maintained storm water management plans to keep the community safe.

As flooding increases across the country, innovative solutions to mitigate risks are in demand. Our team of storm water professionals have extensive and relevant experience in storm water quality and quantity modeling, planning, and design. We have assembled an experienced project team to lead efforts for the watershed plan.

In our planning process, we integrate GIS with H&H computer models and water quality computer models so that our engineers have more time to develop sound structural and non-structural solutions to storm water management problems.

Regardless of what the current driver is for storm water management in a community, strategic thinking can maximize potential opportunities. AECOM’s approach to evaluating and ranking potential storm water control measures (SCMs) keeps the focus on practical, cost-effective solutions in a consistent and scientific manner to aid in the formulation of recommendations. Our plans are approved and implemented with a minimal amount of opposition because of the involvement of municipal staff and key stakeholders, and timely review and acceptance of WDNR in the planning process. The following pages contain project write-ups for six recent, relevant projects.

Table 1. A snapshot of AECOM’s relevant project experience in all project components.

	Project Components										
	Drainage Delineation	Data Management	Survey	TMDL Loading	Future Planning	Implementation Plan	H&H	Permitting	Civil Plan Set	Native Vegetation	Const. Admin.
① Lincoln Street Storm Water Management Facility	●	●					●	●	●	●	●
② Kathryn Court Drainage Improvements Project	●	●	●				●	●	●	●	●
③ Emerald Acres Flood Mitigation Project	●	●	●			●	●	●	●	●	●
④ SWMP and Green Infrastructure Design	●	●	●	●		●	●	●	●	●	●
⑤ (a) City-wide SWMP Update, West Allis	●	●	●	●	●	●					
⑤ (b) City-wide SWMP Update, St. Francis	●	●	●	●	●	●					
⑤ (c) City-wide SWMP Update, Grafton	●	●	●	●	●	●					
⑤ (d) City-wide SWMP Update, Cedarburg	●	●	●	●	●	●					
⑥ Stringham Watershed and South Park Design	●						●	●	●	●	●



City of Pewaukee Emerald Acres project (left). City of Oshkosh South Park Design Project (center) City of West allis Parking Lots with Green Infrastructure (right).

1 Lincoln Street Storm Water Management Facility

Verona, WI

Completion Date: 2021

Staff: Rick Eilertson

Owner Contact: City of Verona | Theran Jacobson, PE | 608.848.6801 | Theran.Jacobson@ci.verona.wi.us

Description: The purpose of the project was to improve water quality in Badger Mill Creek for areas of City that developed prior to storm water treatment being required and to allow redevelopment opportunities and total suspended solids (TSS) credit purchasing. The project included diverting low flows (up to approximately the 1-year, 24-hour rainfall event) from an urban channel through an offline storm water management facility (including wet pool, bioretention area, and outlet structure) for an approximately 700-acre watershed. Flows in excess of the 1-year event bypass the facility over the diversion dam and continue into the existing channel. The WDNR classified the diversion dam and berm surrounding a portion of the facility a small dam. Additionally, groundwater was high in the project area, requiring a groundwater mitigation system.

The City of Verona originally contracted with another consultant to complete the design of the project. However, AECOM was brought into the project during preliminary design to provide specialty technical services, including hydraulic modeling, dam design and permitting, and design of a groundwater mitigation system. AECOM provided the following services on the project:

- Responsible for hydraulic modeling of the facility using XP-SWMM, setting the elevation of the diversion dam and designing the outlet structure to only treat the flows necessary to achieve water quality treatment. Summarized in Hydraulic Analysis report.
- Performed Subsurface Exploration and Geotechnical Engineering Analysis, including dam seepage and stability analysis using GeoSlope, SEEP-W and analysis of groundwater and recommendation for geocomposite drainage layer groundwater mitigation system to drawdown groundwater levels where they are high.
- Designed dam and groundwater mitigation system including plans, special provisions, quantities and cost estimate, and construction support.
- Prepared WDNR dam permit application materials and worked with WDNR to secure permit for project.
- Prepared operation and maintenance plan for dam and groundwater mitigation system.

Relevancy to the City of Pewaukee: Hydraulic Modeling, Design Drawings, Technical Specifications.



Left. Lincoln Street Storm water Management Facility under construction in September 2021.
(Photo credit: City of Verona)

2 Kathryn Court Drainage Improvements Project Pewaukee, WI

Completion Date: 2022

Staff: Steve Parse, Rick Eilertson, Ashley Leisgang

Owner Contact: City of Pewaukee | Rich Wirtz | 262.691.0804 | wirtz@pewaukee.wi.us

Description: A hydrologic and hydraulic (H&H) analysis using XP-SWMM, a software program, was conducted by AECOM for the City of Pewaukee. This analysis specifically focused on an area north of Foxwood Lane and along Kathryn Court. The water flows west to east and discharges to the storm sewer system along Springdale Rd.

During storm events, storm water ponds southwest of the Kathryn Court cul-de-sac and north of Foxwood Lane in a localized low spot in an existing ditch (Foxwood ditch). The localized ponding has not impacted the street or neighboring houses; however, local residents have complained of smell and insects as result of standing water. In general, surface water runoff comes from a mix of urban and agricultural areas which drains from the west to the localized low spot southwest of Kathryn Court. In 2019, the City contracted with AECOM to evaluate alternatives that would improve storm water drainage away from the low spot and ultimately to the Springdale Road storm sewer system.

The H&H analysis found the ditch conveyed storm water from an approximately 275 acres of a mix of residential, commercial, crop land, and undeveloped land. This was discovered through field investigation and survey. Since this area was owned by the railroad company, the City records were incomplete as existing. Culverts were found on the railroad properties that connected the ditches drainage area. Further, the analysis found prior to the construction of Kathryn Court (Briarwood Homesite) in the 1980's, the Foxwood ditch conveyed flow directly to Springdale Road but was rerouted to a storm water outlet north of Kathryn Court. This outlet is used to control flow released into a 48-inch storm sewer located within the Springdale Road right of way which conveys flow approximately 1 miles south to the Fox River. Therefore, the improvement will need to mitigate the ditch ponding without overloading the Springdale Road storm sewer and maintaining the operations of the outlet.

The project began construction in May 2022 includes approximately 2,000 feet of 12-inch pipe from the low spot in the Foxwood Ditch to the 48-inch storm sewer on Springdale Road through the Kathryn Court Outlot and includes a bioswale to reduce the City's total suspended solids loading.

Relevancy to the City of Pewaukee: Hydrological & Hydraulic Analysis, WDNR permitting, Civil Plan Set and Project Manual, Native Vegetation Design and Seeding, Construction Administration and Documentation



New culvert (left), erosion control (middle), and trench for new low flow storm pipe and structure (right).

3 Emerald Acres Flood Mitigation Project Pewaukee, WI

Completion Date: 2021

Staff: Rick Eilertson, Ashley Leisgang

Owner Contact: City of Pewaukee | Rich Wirtz | 262.691.0804 | wirtz@pewaukee.wi.us

Description: The Emerald Acres Neighborhood in the City of Pewaukee was experiencing frequent flooding during moderate to extreme rainfall and snowmelt events. The City hired AECOM in 2010 to prepare a hydrologic and hydraulic (H&H) analysis of the neighborhood to identify recommendations to reduce the frequency of flooding within the neighborhood without creating further issues for properties downstream. This study was completed in 2012 and identified numerous recommendations for both storm water detention and conveyance improvements.

Project Challenges: The H&H results identified the biggest constrictions in conveyance leading to the flooding concerns were: 1) an existing 5.4' wide by 4.6' tall deteriorating hand formed concrete culvert under the busy Canadian Pacific Railroad (CP Rail) and 2) a 54" RCP storm sewer on private property south of the railroad. Neither of these properties had public access. Significant negotiations with both CP Rail and the private property owner were required to secure the necessary permits. Additionally, the unnamed stream conveying storm water through this area was determined to be a navigable stream with significant wetland areas that triggered a detailed practicable alternatives analysis to be prepared for approval of permits by both the Wisconsin Department of Natural Resources and the Army Corps of Engineers.

Project Accomplishments: After all the necessary permits and permissions were obtained, AECOM and the City were able to bid the project in October 2019 to enable winter construction from November 2019 through Spring 2020. The new 1,120 lf. of 60" RCP storm sewer was able to be installed on the private property south of CP Rail; however, the three 72" steel casing pipes to be bored and jacked under the Canadian Pacific Railroad were delayed due to new concerns they had with winter construction. AECOM and the contractor revised the track monitoring and construction procedures to address CP Rail's concerns and delayed construction until frost came out of the ground in March 2020. The contractor also revised the dewatering plan to address the spring thaw and increased storm water flows as well as added wood mats through the haul routes along the private property access. Substantial completion was achieved in June 2020 and final completion was authorized during November 2021 after the private property owner provided acceptance of the restoration.

Relevancy to the City of Pewaukee: Hydrological & Hydraulic Analysis, WDNR and Army COE permitting, Railroad Crossing Permitting and Track Monitoring, Civil Plan Set and Project Manual, Stream Restoration, Native Vegetation Design and Seeding, Construction Administration and Documentation



Flooding in North Branch Ecorse Creek (left). Ecorse River (right).

4 Storm Water Master Planning and Green Infrastructure Design West Allis, WI

Completion Date: Ongoing

Staff: Ashley Leisgang, Jimmy Platz, Rick Eilertson, Steve Parse

Owner Contact: City of West Allis | Rob Hutter | 414.302.8373 | rhutter@westallis.gov

Description: The City contracted with AECOM to conduct a Storm Water Management Plan (SWMP) Update. The SWMP assessed TMDL pollutant reduction requirements of West Allis. The plan included existing BMPs, future BMPs, an implementation plan, and a discussion on incorporating bacteria screening to the IDDE Program.

This project documented the water quality analysis conducted for the City of West Allis following the TMDL analysis guidelines prescribed by the WDNR for a municipal-wide storm water quality management plan. This report developed water quality loading estimates using the WinSLAMM computer model to develop loads under no-controls conditions and with-controls conditions. This will be done for the areas tributary to the Milwaukee River following the TMDL analysis guidelines. It also identified potential future BMPs available to the City to reduce storm water pollutant loadings and move towards compliance with TMDL targets.

Through this analysis AECOM has worked with the City and redevelop existing city owned parking lots in poor shape to integrate storm water management practices, such as, permeable pavers, biofilters, and rain gardens. AECOM has assisted the City in designing three of these redeveloped parking lots with a mix of asphalt, permeable pavers as well as two bioretention facilities.

AECOM refined the citywide drainage mapping and hydrologic/hydraulic modeling to quantify storm water runoff quantities and rates for compliance with City of West Allis and MMSD storm water rules. A WinSLAMM storm water quality model was also developed to quantify nonpoint pollution reduction as required by City of West Allis and WDNR rules for TSS reduction for redevelopment sites. Storm water quantity and quality management requirements were achieved through simple system of specifically designed storm sewer piping to control runoff rated, and grassed swales to reduce nonpoint pollution loadings. AECOM developed and submitted a SWMP in compliance with City of Milwaukee requirements. AECOM also developed the construction drawings, technical specifications, and bid documents for the three municipal parking lots.

Relevancy to the City of Pewaukee: Drainage Delineation, BMP Design, Infiltration, TMDL Loading, Future Planning, Implementation Plan



West Allis parking lot with two biofilters and permeable pavement (left). West Allis parking lot with permeable pavement and rain gardens (right).

5 City-wide Storm Water Management Plan Update West Allis, St. Francis, Grafton, Cedarburg, WI

Completion Date: 2018-2022

Staff: Ashley Leisgang, Jimmy Platz, Rick Eilertson, Steve Parse

Owner Contact: City of West Allis | Rob Hutter | 414.302.8373 | rhutter@westallis.gov

Owner Contact: City of St. Francis | Melinda Dejewski | 414.481.2300 | melinda.dejewski@stfranwi.org

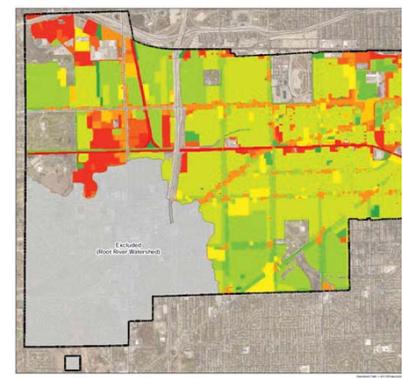
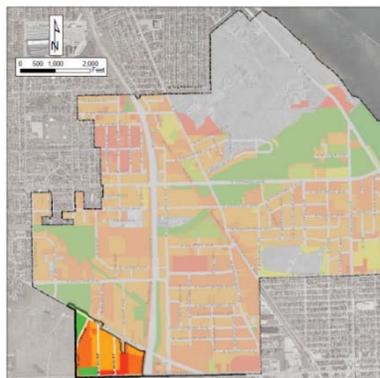
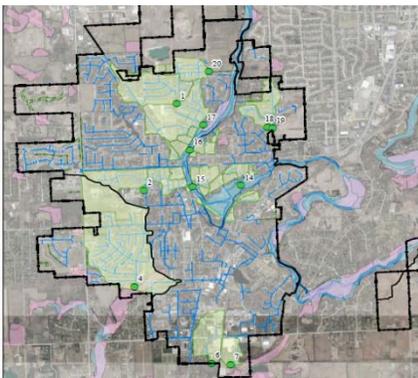
Owner Contact: Village of Grafton | Amber Thomas | 262.375.5330 | athomas@village.grafton.wi.us

Owner Contact: City of Cedarburg | Mike Wieser | 262.375.7610 | mwieser@ci.cedarburg.wi.us

Description: AECOM was selected by various municipalities in southeastern Wisconsin to update their comprehensive community wide SWMP. The SWMP updates were completed on time for each client and accepted by the WDNR. The updates were built upon previous planning efforts and developed to assess compliance with MS4 pollutant reduction requirements based on WDNR modeling guidance and TMDL pollutant reduction requirements of the Milwaukee River Basin TMDL. The projects inventoried each client's existing land use and BMP data, then calculating their existing loading results for MS4 and/or TMDL modeling parameters. Key steps for the projects included:

- Updating GIS data including land use, watershed boundaries, curb and gutter and swale drainage areas, riparian areas and county-owned parcels, and state right-of-way based on the latest WDNR guidance for MS4 and TMDL areas.
- Developed no controls TSS and TP pollutant loadings utilizing WinSLAMM to model annualized loads per acre for each land use and soil type combination in the City.
- Inventoried the client's existing best management practices including grass swales, street cleaning, wet detention basins, catch basin cleaning, bioretention devices, permeable pavement, and other manufactured devices. Previously modeled TSS efficiencies were used for BMPs that had SWMPs developed. BMPs with no existing SWMP data were modeled in WinSLAMM to obtain their TSS and TP pollutant control effectiveness.
- Determined existing pollutant reduction percentages by applying "with controls" storm water control practice efficiencies to the no controls loads. Where applicable, the values were compared with those required by the TMDL to determine how much additional pollutant reduction will be needed to meet all TMDL requirements.
- Analyzed potential future BMPs for reachsheds where the City was not in compliance with pollutant load reduction requirements. This included a variety of potential expanded measures such as retrofitting existing wet pond outlet structures, adding forebays to existing channels or wet ponds, underground storage units, biofiltration, permeable pavement, and other practices.
- Developed cost estimates for future BMPs and ranked based on costs per ton of TSS removed and pound of TP removed and identified practices for potential inclusion in future water quality improvement efforts.
- Assisted clients with developing a 20-year implementation plan that consisted of annual steps for continued permit compliance and water quality improvement as well as major planning, design, and capital construction efforts for new projects to guide future water quality benchmarking efforts.

Relevancy to the City of Pewaukee: Drainage Delineation, Data Management and Maintenance, Assessing MS4 permit and TMDL Requirements, BMP Modelling, TMDL Loading, Implementation Plan



Future Water Quality BMPs Figure for the City of Cedarburg's SWMP Update (left). Existing 2016 TP Conditions Figure for City of St. Francis' SWMP Update (middle). Example With Controls Loading for the City of West Allis (right).

6 Stringham Watershed and South Park Design Oshkosh, WI

Completion Date: 2018 and 2022

Staff: Ashley Leisgang, Dulay Trujillo

Owner Contact: City of Oshkosh | James Rabe | 920.236.5065 | jrabe@ci.oshkosh.wi.us

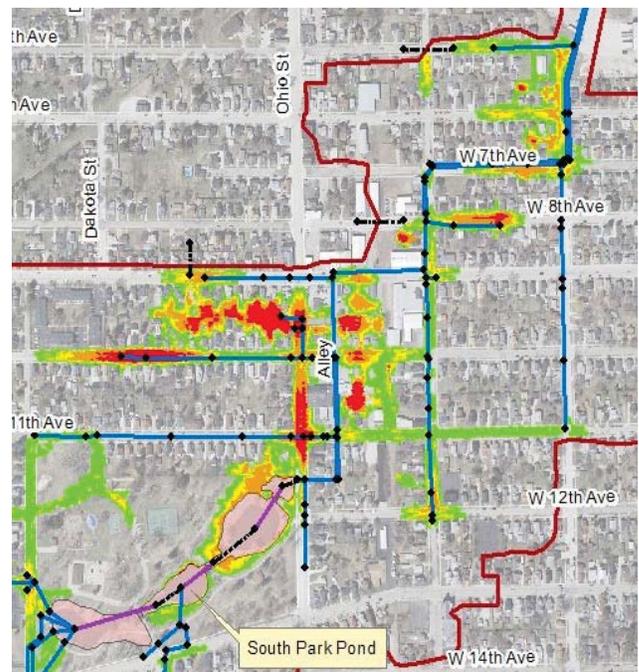
Description: The Stringham Creek Watershed is located in the south central area of the City of Oshkosh. Certain neighborhoods within this watershed experience severe flooding during moderate to heavy rainfalls. This watershed outfalls into the Fox River through a box culvert, which was reduced in size when the culvert's top slab was modified during past repair efforts. This, in addition to the high tailwater elevation on the Fox River which is influenced by Lake Winnebago during rain events, greatly affects the culverts discharge capacity. As a result, there is severe localized flooding in areas of the watershed.

An existing conditions model was developed to evaluate the existing conditions surface flooding, using XP-SWMM™ 2D. The XP SWMM™ 2D model included storm sewers equal to or greater than 18-inches in diameter and utilized LiDAR data to create the surface model. Open channel conveyance systems were also included. In locations where it was deemed important, storm sewers smaller than 18-inches were included, primarily in the areas downstream of the existing storm water management facilities that are incorporated into the model.

Development plans and land use changes were incorporated into the model. After calibration of the model, the existing conditions flood results were used to evaluate various mitigation alternatives. The ultimate goal is to eliminate street flooding throughout the watershed for rainfall events up to a 10-year design storm and to maintain street drivability for storm events up to a 25-year design storm, to the extent practical. A variety of flood mitigation alternatives, such as flood water storage, increased capacity for existing storm sewers, creating new storm sewer where existing storm sewer did not exist, increased capacity of storm sewers through the use of a pump station, and combinations of the first four methods, were evaluated. Several sites in the watershed were identified for potential storage along with increasing the existing pipe diameter for various tributary lines. The project has led to a set of recommended improvements that include flood storage expansion of the lagoons in South Park, a central feature of this watershed and an important local park for the City.



Historic pedestrian bridge, a remnant from the original park design. (left). Existing Conditions for the 100-year Storm Event. The project goal was to lower surface ponding downstream of South Park Lagoons, to keep it within the right-of-way limits.(right).



Relevancy to the City of Pewaukee: Technical Coordination, Study Design, Project Management, Construction Document Preparation and Bidding, Engineering and Scientific Analysis, Geotechnical Investigation, Stakeholder Engagement, 100-year Flood Analysis and Mitigation, Storm Water Detention Basins, Watershed Planning

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Project Personnel



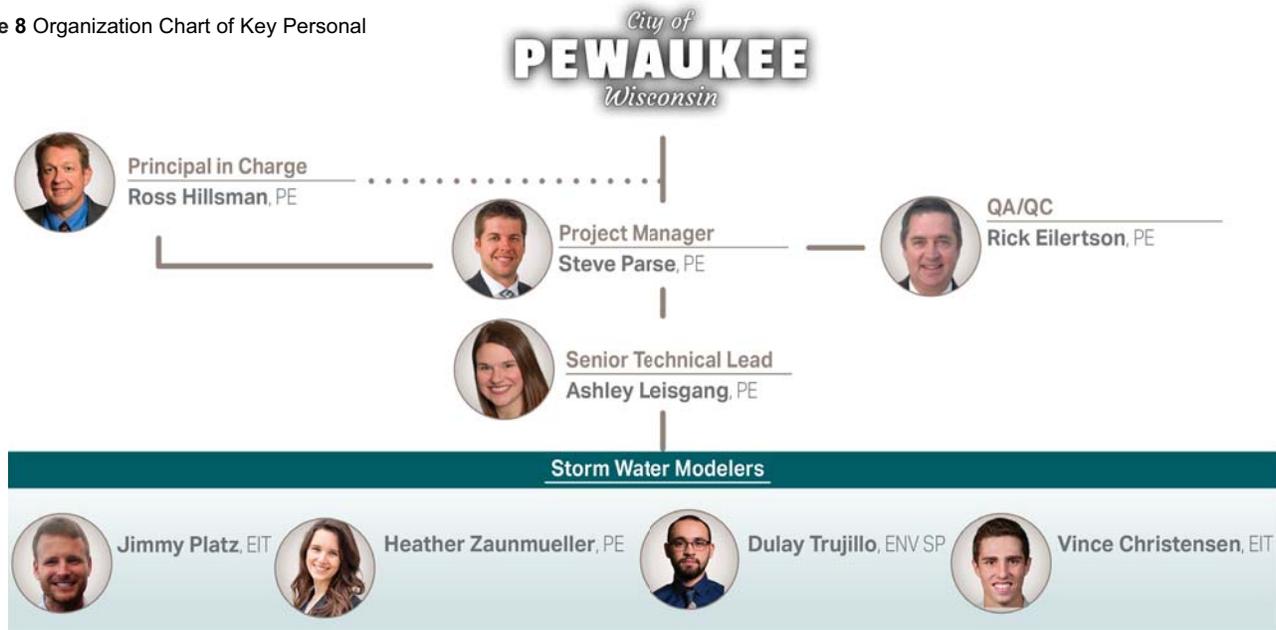
5. Project Personnel

We are proud to offer well-qualified and highly motivated team members to perform all tasks required in developing the storm water models for the City of Pewaukee.

Organizational Chart of Key Personal

Our Milwaukee-based project team is made up of skilled, experienced staff members, familiar with local and state regulations, storm water permit compliance expectations, WDNR regulation guidance, and the software and approaches necessary to successfully accomplish this project.

Figure 8 Organization Chart of Key Personal



Key Personnel	Individual Areas of Responsibility for this Project
Steve Parse Project Manager	Steve will actively communicate with the City to align the SWMP analysis with the City’s current control practices and to provide recommendations that adhere to the City’s overarching storm water management objectives.
Rick Eilertson QA/QC	Rick specializes in leveraging geospatial and asset management technologies, tools, and data to support engineering and planning projects, with a focus on storm water infrastructure. Rick will lead the project quality assurance according to the current standards and regulations to provide an accurate, compliant SWMP completed in accordance with industry best practices.
Ashley Leisgang Senior Technical Lead	Ashley has extensive experience developing SWMPs throughout Wisconsin and is a lead engineer in the state for SWMP updates regarding MS4 and TMDL compliance. Her practical experience and skills in design and modeling of BMPs help to make the planning process more relevant for future implementation purposes.
Jimmy Platz Storm Water Modeler	Jimmy will work closely with staff to create WinSLAMM models for existing and future BMPs, evaluate TSS and TP loadings, and summarize the data in one complete SWMP. He will support Steve and Ashley in efficiently driving this project forward.
Dulay Trujillo Storm Water Modeler	Dulay will work closely with staff to create XPSWMM models for existing and future conditions and summarize the data in the SWMP. He will support Steve and Ashley in efficiently driving this project forward.
Heather Zaubmueller Storm Water Modeler	Heather has successfully obtained recent WDNR approval of numerous similar projects including TMDL WinSLAMM modeling. Her experience on SWMP projects ranges from refining complex details to enhancing the overall planning efforts.
Vince Christensen Storm Water Modeler	Vince will work closely with staff to create XPSWMM models for existing and future conditions and summarize the data in the SWMP. He will support Steve and Ashley in efficiently driving this project forward.
Ross Hillsman Principal in Charge	Serves as the Water/Wastewater Department Manager for the upper Midwest. In this role, he is responsible for ensuring staff and other resources are available to complete this project.

Steve Parse, PE

Project Manager

Education

Masters, Business
Administration
BS, Civil Engineering

Licenses/Registrations

Professional Engineer: WI

Years of Experience

10

Key Skills

- WinSLAMM modeling
- Storm water management planning
- BMP and site design
- Surface water H&H modeling



Steve has more than 10 years of experience assisting clients with permit compliance, storm water management, TMDL action planning and storm water design. He will serve as the main point of contact and will leverage his experience with other SWMP programs and familiarity with Pewaukee to help the City continue to implement an effective program.

Kathryn/Foxwood Ct Drainage Study, Pewaukee, WI. Steve served as a drainage engineer and deputy project manager for a drainage study to determine the cause of a reported drainage issue and analyze three alternatives to correct the issue. The study involved collecting existing storm sewer data including survey information, collecting the data in a GIS file, and creating a XP-SWMM model to analyze the drainage area of approximately 290 acres of urban and rural land uses. The study produced three alternatives to correct the drainage issues and associated cost estimates.

Kenosha Water Utility Parcel F Sewer Relocation, Kenosha, WI. Steve served as the lead design engineer and deputy project manager for a relocation of approximately 1,200 feet of sanitary sewer in the downtown area of Kenosha. Steve's design tasks include sizing the sewer for proposed capacities, laying out their proposed routing, and producing the plan sheets and specifications.

WisDOT I-39/I-90 Reconstruction – South Segment Design, WisDOT. Steve served as a drainage engineer for the reconstruction of 12 miles of interstate highway and two local roads. Steve's design tasks include using XP-SWMM to analyze and design proposed drainage system and using WisDOT standard to determine proposed inlet spacing and provide details for plan set.

New MDOT I-75 Pump Station Discharge Analysis at George W Kuhn Retention and Treatment Basin Facility, Oakland County, MI. Steve served as a design engineer and deputy project manager for the analysis and design of the discharge routing of a proposed MDOT pump station in Oakland County, MI. Steve used XP-SWMM to determine the discharge location of a proposed pump station considering "dirty" first flush storm water and "clean" post-first flush water to a combined sewer system, combined sewer system storage and treatment basin, and a storm sewer bypass. A weir structure and discharge pipe were designed from the analysis.

1st Ave. Biofilter Design, Grafton, WI. Design engineer responsible for the design, modeling, cost estimating, and specification writing for a series of biofilters installed within the median of a divided roadway. The design of the biofilters included five different median area with approximately 200-300 square feet of engineered soil. The roadway was designed to drain to the biofilters via curb cuts before existing inlet locations. WinSLAMM models were created to determine TSS and TP removal efficiencies and HydroCAD was used to develop hydraulic models for each biofilter.

City-wide SWMP Update – City of Cedarburg, WI. Technical lead. Developed potential BMPs and used WinSLAMM to determine storm water pollution quantities (Total Suspended Solids and Total Phosphorus) for the City of Cedarburg to comply with WDNR MS4 and Milwaukee River Basin TMDL Permits. Based on required TMDL targets, future BMPs were proposed and modeled in WinSLAMM. This allowed the City to accurately gauge the amount of additional storm water control needed to meet the TMDL requirements. Existing and future condition modeling results were then summarized, and recommendations and results were presented in a final report with accompanying figures created in ArcGIS.

Rick Eilertson, PE

QAQC



Education

BS, Civil & Environmental Engineering

Licenses/Registrations

Professional Engineer: WI

Years of Experience

30

Key Skills

- Storm Water Facility Planning
- Inspection and Maintenance
- Municipal Infrastructure
- Public Involvement

Throughout his professional experience, Rick has worked closely with municipal governments in planning, evaluating, designing, and constructing municipal infrastructure systems. Rick's specialties include storm water conveyance design and construction; storm water utility management, roadway design and construction; municipal water and sanitary sewer system design, including planning and construction, municipal sewer system evaluation and rehabilitation; and sustainability initiatives. Planning for these projects included estimating, scheduling, coordination with funding programs, as well as permitting and correspondence with state and local governmental agencies.

Emerald Acres Flood Mitigation Project, Pewaukee, WI. Project Manager. Coordinated design modifications, ACOE/WDNR permit application documents, CP Rail Crossing permit application, bidding, and construction administration for storm water system improvements to alleviate flooding issues within the Emerald Acres residential subdivision in Pewaukee, Wisconsin.

Kathryn/Foxwood Ct Drainage Study, Pewaukee, WI. Rick served as a drainage engineer and project manager for a drainage study to determine the cause of a reported drainage issue and analyze three alternatives to correct the issue. The study involved collecting existing storm sewer data including survey information, collecting the data in a GIS file, and creating a XP-SWMM model to analyze the drainage area of approximately 290 acres of urban and rural land uses. The study produced three alternatives to correct the drainage issues and associated cost estimates.

Fitchrona Road Stormwater Improvements, City of Fitchburg, WI. Project manager for the modeling and recommendations for providing storm water improvements to reduce flooding on Fitchrona Road between Nesbitt Road and Lacy Road. Modelling included HydroCAD for hydrology parameters and XP-SWMM for hydrology and hydraulic analysis.

Storm Water Management Plan Update and IDDE Report Services, City of Cedarburg, Cedarburg, WI. Served as Project Manager for updating Cedarburg's Storm water Management Plan (for Total Suspended Solids and Total Phosphorus) to meet WDNR MS4 permit and Milwaukee River Basin TMDL requirements. The updates also included revising Cedarburg's Storm water Management ordinances and grant reimbursement documentation. Served as Project Manager for Illicit Discharge Detection and Elimination services provided to Cedarburg by AECOM.

Storm Water Management Plan Update and IDDE Report Services, Village of Grafton, WI. Served as Project Manager for updating Grafton's Storm water Management Plan (for Total Suspended Solids and Total Phosphorus) to meet WDNR MS4 permit and Milwaukee River Basin TMDL requirements. The updates also included revising Grafton's Storm water Management ordinances and providing grant reimbursement documentation. Served as Project Manager for Illicit Discharge Detection and Elimination services provided to Grafton by AECOM.

Nine Springs Creek Watershed Master Plan, City of Fitchburg, WI. Project Manager. Coordinated grant application and administration, consultant selection, public involvement, and recommendations for future stormwater facility improvements for the entire 3,600-acre Nine Springs Creek watershed. This project included cooperation with the adjacent Cities of Madison and Monona, as well as the Towns of Madison and Blooming Grove. Concept Plans for over 10 potential large-scale stormwater facilities were prepared and prioritized into the City's 10-year Capital Improvements Program Plan. Coordinated research, planning and design analysis, recommendations and a final report for stormwater facility and program improvements for the Nine Springs Creek Watershed. Work included numerous stakeholder meetings, three public involvement meetings, along with walking, biking, bus, and trolley tours through the watershed.

Ashley Leisgang, PE

Senior Technical Lead



Education

BS, Civil and Environmental Engineering

Licenses/Registrations

Professional Engineer, WI

Years of Experience

15

Key Skills

- Project Management
- Storm Water Management Planning
- Hydraulic and Hydrologic Modeling
- BMP and Site Design
- Municipal Infrastructure
- WinSLAMM Modeling

Ashley is a senior engineer with extensive experience in storm water planning, modeling, and design. The experience includes urban nonpoint source pollution modeling for storm water management plans and surface water hydrologic and hydraulic modeling. She conducts pollutant load reduction analyses for storm water management planning as well as H&H analyses for existing and proposed bridge and culvert replacements. She is proficient with WinSLAMM, ArcGIS, XPSWMM, XPSWMM 2D, HEC-RAS, AutoCAD, and software.

City-wide SWMP Update, City of West Allis, City of St. Francis, City of Greenfield, Village of Grafton, WI. Project Manager. Gathered required information and used WinSLAMM to determine storm water pollution quantities (Total Suspended Solids and Total Phosphorus) for various communities throughout southeastern Wisconsin for WDNR MS4 and Milwaukee River Basin TMDL Permits. This information included: best management practice locations and modeled removal efficiencies, watershed boundaries, prior and current land use, curb and gutter vs. swale drainage areas, and riparian areas. Existing model results were then interpreted and compared to TMDL targets. Based on required TMDL targets, future BMPs were proposed and modeled in WinSLAMM. This allowed the communities to accurately gauge the amount of additional storm water control needed to meet the TMDL requirements. Existing and future condition modeling results were then summarized, and recommendations and results were presented in a final report with accompanying figures created in ArcGIS.

Kathryn/Foxwood Ct. Drainage Study and Design, Pewaukee, WI. Ashley served as a senior reviewer for the drainage study to determine the cause of a reported drainage issue and analyze three alternatives to correct the issue. The study involved collecting existing storm sewer data including survey information, collecting the data in a GIS file, and creating a XP-SWMM model to analyze the drainage area of approximately 290 acres of urban and rural land uses. The study produced three alternatives to correct the drainage issues and associated cost estimates. After the planning study, she helped lead the review of the construction documents.

City of Manhattan Beach, Storm Drain Master Plan, Manhattan Beach, CA. Lead Engineer to perform hydrologic and hydraulic (H&H) modeling to find the existing problem areas within entire City using XPSWMM 2D. The existing model was developed and used to determine the flooding issues for the three design storms. Once the problem areas were identified, we worked with City staff to develop the best solutions to mitigate the surface flooding in the City. Alternatives were evaluated to properly size the proposed conveyance and storage basins. The plan identified the projects, along with the costs associated with the improvements. These were then summarized into a CIP plan.

City of Oshkosh, South Park Master Plan and Lagoon Design, Oshkosh, WI. Project Manager and Lead Engineer to perform hydrologic and hydraulic (H&H) modeling to find the existing problem areas within the watershed. From there, she worked with the City to determine the best solutions to mitigate the surface flooding in the watershed. Alternatives were evaluated to properly size the proposed conveyance and storage basins. XPSWMM 2D was the software used. The plan determined that the watershed needed improvements to the existing storm system, upgrades/retrofits to current wet detention basins, and new dry detention basins. One of the retrofits was to redesign the current wet detention basins in the heart of the watershed, which is upstream of a neighborhood with significant historical flooding. These basins were in a park called, South Park. In existing conditions, there were three lagoons that are formed and controlled by three existing weir structures. The hydraulic structures are nearing the end of their design life and do not restrict flow to create dynamic flood storage in the lagoons. Performed hydrologic and hydraulic (H&H) modeling to find the existing flood water surface elevation and then modeled the proposed improvements to maximize flood storage and water quality enhancement.

Jimmy Platz, EIT

Storm Water Modeler



Education

MS, Civil & Environmental Engineering
BS, Geological Engineering

Licenses/Registrations

Engineer in Training, WI

Years of Experience

3

Key Skills

- WinSLAMM modeling
- Storm Water management planning
- BMP and site design
- Surface water H&H modeling

Jimmy is a water resources engineer in the Milwaukee office. His technical expertise includes urban nonpoint source pollution modeling, BMP design, and storm water management planning for TMDL and WDNR MS4 permit compliance. His experience also includes surface water hydrologic and hydraulic modeling, roadway drainage design, and construction oversight on water resource and environmental projects. He is proficient with WinSLAMM, ArcGIS, HydroCAD, XPSWMM, HEC-RAS, and AutoCAD software.

City-wide SWMP Update – City of West Allis, Village of Grafton, and City of Cedarburg, WI. Technical Support. Gathered required information and used WinSLAMM to determine storm water pollution quantities (Total Suspended Solids and Total Phosphorus) for various communities throughout southeastern Wisconsin for the WDNR MS4 and Milwaukee River Basin TMDL Permits. This information included: best management practice locations and modeled removal efficiencies, watershed boundaries, prior and current land use, curb and gutter vs. swale drainage areas, and riparian areas. Existing model results were then interpreted and compared to TMDL targets. Based on required TMDL targets, future BMPs were proposed and modeled in WinSLAMM. This allowed the communities to accurately gauge the amount of additional storm water control needed to meet the TMDL requirements. Existing and future condition modeling results were then summarized, and recommendations and results were presented in a final report with accompanying figures created in ArcGIS.

Parking Lot Reconstruction Design, City of West Allis, WI. Technical Support. Assisted with the design of two parking lot reconstructions between 71st-72nd Street and 73rd-74th Street that incorporated bioretention devices and interlocking concrete permeable pavement to help the city achieve their storm water quality goals. Put together design alternatives, plan sheets, specs, cost estimates, and used HydroCAD and WinSLAMM to evaluate and model the BMP efficiencies.

Foxwood-Kathryn Court Drainage Study & Design, City of Pewaukee, WI. Stormwater Modeler. Assisted with developing HydroCAD and XPSWMM 1D models to analyze an urban area with existing drainage issues. Also used WinSLAMM software to analyze removal efficiencies for bioretention alternatives and help the city achieve their storm water quality goals.

Citizen Park Storm Water Management Plan, City of Manitowoc, WI. Technical Support. Assisted with a storm water management plan for a development in Manitowoc, WI to comply with WDNR requirements. Prepared alternatives to reduce pollutant loads, used HydroCAD to assess the hydrology, and used AutoCAD to delineate drainage areas and create project figures.

Site Review, City of West Allis, WI. Technical Support. Assisted with the review of a redevelopment site located south of National Avenue in the City of West Allis. Reviewed the WinSLAMM and HydroCAD models to check that the pollutant load reductions and hydrology aligned with Wisconsin Department of Natural Resources (WDNR) and Milwaukee Metropolitan Sewerage District (MMSD) requirements.

Drainage Study for the Village of Plover, WI. Stormwater Modeler. Assisted with developing a 1D XPSWMM model for a residential neighborhood that experienced flooding in the Spring of 2019. Developed conveyance alternatives to remediate the existing drainage problems and used ArcGIS to delineate drainage areas and create project figures.

Illicit Discharge Detection and Elimination (IDDE) – City of Cedarburg, Village of Grafton, Village of Hales Corners, City of Racine, City of Saint Francis, City of South Milwaukee, and City of West Allis, WI. Technical Lead. Performs the collection and analysis of storm water samples to comply with WPDES permit requirements. Pollutants tested for include ammonia, chlorine, copper, detergents, fluoride, phenols, and potassium. pH and bacteria levels are also evaluated. Starting at an outfall, if pollutants are found above the action limits, investigation is performed upstream in the storm sewer network in attempt to isolate the source. Data is compiled in an annual report and submitted to the municipality and WDNR for review.

Dulay Trujillo, ENV SP

Storm Water Modeler

Education

MS/BS, Civil and
Environmental Engineering

Licenses/Registrations

Envision Sustainability
Professional

Years of Experience

2

Key Skills

- WinSLAMM & XPSWMM modeling
- Storm water management planning
- Storm sewer modeling
- Surface water H&H modeling



Dulay is a civil engineer with a background in water resources and environmental engineering. He has experience working with a variety of audiences and public outreach. He is newly familiar with XPSWMM, XPSWMM 2D, HEC-RAS, WinSLAMM, AutoCAD, and ArcGIS software.

Kathryn Court Drainage Improvements for the City of Pewaukee, WI. Construction Inspector. Dulay's role is assisting in documenting daily construction observation on behalf of the City of Pewaukee, track quantities, coordinate with the contractor, and document weekly erosion control inspections.

St. Francis Storm Water Pollution Prevention Plan (SWPPP), St. Francis, WI. GIS Modeler. Assisted in developing a SWPPP for the City of St. Francis. Project included identifying potential sources of contamination and proposing possible best management practices (BMPs) to the City. ArcMAP was the software used to develop figures for the report presented to the client.

Johnson and Stingham Modeling City of Oshkosh, Oshkosh, WI. Storm Water Modeler. The City Oshkosh is conducting a detailed hydrologic/hydraulic (H&H) and storm water quality analysis for each watershed in the City. Certain neighborhoods within the Johnson Ave and Stringham watershed experience severe flooding during large rainfall event. The watersheds H&H modeled was conducted using XPSWMM. The existing conditions were evaluated using a variety of storm events. Following the evaluation of existing flooding conditions, the study areas were reviewed to identify potential locations for flood management measures which included: improvement to existing storm sewers, new storm sewers, and channel/ditch improvement. Alternative were evaluated using XPSWMM.

Milwaukee Metropolitan Sewerage District - Green Infrastructure Outreach. Fresh Cost Intern. Assisted in promote green infrastructure (GI) technologies, in English and Spanish, to private property owners while an intern at Milwaukee Metropolitan Sewerage District's (MMSD). The work gave him an opportunity to engage with community members and communicate practical small-scale and large-scale GI knowledge and support small scale workshops and installations.

CORE/EI Centro – Community and Public Outreach. Program Assistance/Land Steward. Dulay was involved in planning, organizing, and coordinating community events for adults, young adults, and children from the near southside of Milwaukee. The community events subject ranged from themes that included, but not limited to, healthy lifestyle, environmental stewardship, gardening, and apiculture. All the events were presented in English with Spanish translations when needed. In addition, Mr. Trujillo also managed the clock shadow building rooftop garden, community garden, and rooftop beehive while at the same time educating visitors.

Heather Zaubmueller, PE

Storm Water Modeler



Education

BS, Civil Engineering

Licenses/Registrations

Engineer in Training, WI

Years of Experience

4

Key Skills

- H&H Modeling
- Water Quality Modeling

Heather is an Engineering-in-Training with four years of experience specializing in water resources. She has experience in storm water quality modeling for storm water management planning, hydraulic modeling for bridge replacement projects, FEMA floodplain modeling and mapping, and storm water drainage modeling and design. Heather is proficient in ArcGIS and HEC-RAS and familiar with HydroCAD, AutoCAD, WinSLAMM, and XPSWMM software.

City-wide SWMP Update, Upper Fox/Wolf River TMDL, Fond du Lac County, Towns of Fond du Lac, Friendship, and Taycheedah, WI. Primary Modeler. Gathered required information to determine the total storm water pollution quantities (Total Suspended Solids and Total Phosphorus) using WinSLAMM for the Upper Fox/Wolf River TMDL Permit. This information included: BMP locations and modeled removal efficiencies, watershed boundaries, land use designations, curb and gutter vs. swale drainage areas, as well as riparian areas and areas that drain to another MS4. Model results were then interpreted and compared to TMDL targets and compiled into report format with accompanying figures created in GIS. Future recommendations were offered for steps to meeting the TMDL requirements.

Wisconsin Department of Transportation, Southeast Region TS4 Permit Storm water Mapping, Various Locations, WI. Modeling Lead. Provided modeling and GIS mapping support for statewide water quality modeling to comply with the reporting requirements of the WDNR transportation separate storm sewer system (TS4) permit for storm water management. Organized and adapted spatial data to model pollutant loading for total suspended solids and total phosphorus.

Wisconsin Department of Transportation, USH 51 Segment 3 Hydrologic and Hydraulic (H&H) Modeling and Water Quality Analysis, City of Stoughton, WI. Deputy Project Manager & Primary Stormwater Modeler. Modeled existing and proposed flows and volumes entering a closed basin using XP-SWMM software. Provided stormwater treatment solutions to reduce flows and water surface elevations in the closed basin due to highway reconstruction. Computed water quality loadings for final design alternative. Summarized analysis in a stormwater report.

Portage County Highway Department, CTH R Hydrologic and Hydraulic (H&H) Modeling and Water Quality Analysis, Plover, WI. Primary Modeler. Performed H&H analysis for drainage conveyance along CTH R using XP-SWMM software. Reviewed spatial data to delineate drainage basins, classify land uses, calculate Times of Concentration, calculate and CN values. Evaluated two proposed alternatives in XP-SWMM, one with a rural cross section and another with an urban cross section. Computed water quality loadings for final design alternative. Summarized analysis in a stormwater report.

City of Verona, CTH M/CTH PB Intersection Improvements, Middleton, WI. Permitting Support. Compiled applications and supporting documentation for the WDNR notice of intent permit and Verona erosion control permit for improvements at the intersection of CTH M and CTH PB. Documentation included USLE calculations (soil loss & sediment discharge calculation tool) and existing site maps including WDNR wetland inventory, topography, and soils.

Village of Weston, Crestwood Acres Neighborhood Street Reconstruction Design Project, Weston, WI. Primary Modeler. Performed H&H analysis for drainage conveyance along in the Crestwood Acres Neighborhood using XP-SWMM software. Reviewed spatial data to delineate drainage basins, classify land uses, calculate Times of Concentration, calculate and CN values. Ensured no backsliding of water quality treatment under the municipal separate storm sewer system (MS4) permit held by the village.

Wisconsin Department of Transportation, Roadway Design, Somerset, WI. Reviewer. Provided quality control (QC) of stormwater analysis for 90% roadway design submittal. Reviewed modeling data including drainage area delineations, Time of Concentration calculations, and CN calculations. Reviewed Autodesk Storm and Sanitary Analysis (SSA) model and plans.

Vincent Christensen, EIT

Storm Water Modeler



Education

BS, Environmental
Engineering

Licenses/Registrations

Engineer in Training, WI

Years of Experience

2

Key Skills

- WinSLAMM modeling
- Storm water management planning
- Potable water main leak detection
- Surface water H&H modeling

Vincent is a water resources engineer-in-training. His technical expertise includes urban nonpoint source pollution modeling, potable water main leak detection, and storm water management planning for TMDL and WDNR MS4 permit compliance. His experience also includes surface water hydrologic and hydraulic modeling, roadway drainage design, CIPP rehabilitation, and construction oversight on water resource and municipal projects. He is proficient with AutoCAD, MicroStation, ArcGIS, WinSLAMM, HydroCAD, XPSWMM, WISE, and HEC-RAS software.

Foxwood-Kathryn Court Drainage Study & Design, City of Pewaukee, WI. Storm Water Modeler. Assisted with developing drainage system upgrades to an urban area with existing drainage issues. AutoCAD was utilized to create sheet sets which contained storm sewer layouts, surface grades, engineered soil area, and other project construction information.

Milwaukee Airport Rail Station Phase 2 Second Platform, Milwaukee WI. Storm Water Modeler. Developed 1D XPSWMM, HydroCAD, Hydraulic Toolbox, and WinSLAMM models to check that pollutant load reductions, H&H aligned with Wisconsin Department of Natural Resources (WDNR) and Milwaukee Metropolitan Sewerage District (MMSD) requirements. Helped to create a storm water management report, plan sheets, and specifications.

Beuchel Development, Town of Sheboygan, WI. Storm Water Modeler. Assisted with the creation and review of a development site located in the Town of Sheboygan. Created the WinSLAMM and HydroCAD models to check that the pollutant load reductions and hydrology aligned with Wisconsin Department of Natural Resources (WDNR) and Sheboygan storm water requirements.

Texas Department of Transportation - Houston District, SH 35 Roadway Widening Drainage Impact Study and S&E, Houston, TX. Storm Water Modeler. Assisted with developing a 1D XPSWMM model for proposed drainage system upgrades to SH 35 in Alvin, TX. Developed conveyance alternatives to remediate the existing drainage problems and used ArcGIS to delineate drainage areas and create project figures.

US Federal Emergency Management Agency, Risk Map 2014-2021 - FY20 Region 6 Regional Task Orders, Various Locations, Multiple States. Project engineer assigned a drainage area with approximately 485 miles of stream. Utilizing proprietary software, as well as ArcGIS and HEC-RAS 5.0.5, flood areas were modeled for the 100-yr and 500-yr events for all the streams in the basin.

Illicit Discharge Detection and Elimination (IDDE) – City of Cedarburg, Village of Grafton, City of Saint Francis, and City of South Milwaukee, WI. Field Surveyor. Performed collection and analysis of storm water samples to comply with WPDES permit requirements. Pollutants tested for include ammonia, chlorine, copper, detergents, fluoride, phenols, and potassium. pH and bacteria levels are also evaluated. Starting at an outfall, if pollutants are found above the action limits, investigation is performed upstream in the storm sewer network in attempt to isolate the source. Data is compiled in an annual report and submitted to the municipality and WDNR for review.

Budget



6. Budget

The compensation table as shown in Figure 9, summarizes our estimate of fees to complete the scope of services described. Because of the complexity of the project our proposed project fee is \$408,000, which is higher than the allocated budget for FY 2022, of \$350,000. If the City would like to keep to the allocated budget, our Team proposes most of Task 3 – Water Quality be removed from the scope of work at this time. The remaining water quality task consists of creating WinSLAMM models for the proposed storm water alternatives generated in Task 2. The items in the figure with the red box next to the task, illustrate the scope items that can be delayed. The remaining Scope Items will cost \$330,600.

Figure 9. Compensation Table

Scope of Work	Labor Costs	Direct Costs	Total Costs
1 Data Collection and Review			\$ 35,100
Update TMDL Watershed/Reachshed Boundaries	\$ 2,310	\$ -	\$ 2,300
Storm Water Conveyance	\$ 7,470	\$ -	\$ 7,450
Create Soils Data	\$ 2,090	\$ -	\$ 2,100
Land Use	\$ 7,970	\$ -	\$ 7,950
Excluded Areas (not sure what guidance to use)	\$ 4,780	\$ -	\$ 4,800
Climate	\$ 1,210	\$ -	\$ 1,200
Water Quality Indicators	\$ 1,950	\$ -	\$ 1,950
Review SEWRPC Studies	\$ 7,360	\$ -	\$ 7,350
2 Water Quantity			\$ 239,400
2.1 - XP-SWMM Model Development			
Construct Watershed Characteristics	\$ 31,920	\$ -	\$ 31,900
Construct Conveyance Network plus channel dimensions	\$ 54,960	\$ -	\$ 54,950
Add Public (26 Public BMPs (8 hours each), 36 Private BMPs @ 2 hrs each)	\$ 26,400	\$ -	\$ 26,400
Add Four Projects (Hilldale, Kathryn Ct, Emerald Acres, and Takoma)	\$ 3,230	\$ -	\$ 3,250
Boundary Condition Definition - 10 year floodplain tailwater conditions	\$ 3,420	\$ -	\$ 3,400
Execute Modeling - Run 10 and 100-year, 24-hour Events	\$ 2,990	\$ -	\$ 3,000
Incorporate 2050 Land Use Data	\$ 12,380	\$ -	\$ 12,400
Existing Conditions Figures	\$ 8,360	\$ -	\$ 8,350
Problem Area Identification in each Watershed	\$ 18,300	\$ -	\$ 18,300
2.2 - Flood Mitigation Alternatives			
Evaluate Prior Recommended and new SCM/System Improvement Analysis for each Watershed (10 Storm Water Practices - 40 hours per watershed)	\$ 43,260	\$ -	\$ 43,250
Conceptual Figures (Up to 10 Concept Figures)	\$ 12,040	\$ -	\$ 12,050
Selected Alternative	\$ 14,020	\$ -	\$ 14,000
Prepare Cost Estimate	\$ 8,150	\$ -	\$ 8,150
3 Water Quality			\$ 77,300
3.1 - Establish TMDL No Controls Conditions Load by Reachshed			
Create WinSLAMM Data Files	\$ 2,980	\$ -	\$ 3,000
Calculate TMDL No-Controls Load	\$ 5,640	\$ -	\$ 5,650
3.2 - Establish TMDL With Controls Conditions Load by Reachshed			
Update Street Cleaning/Swailes	\$ 5,570	\$ -	\$ 5,550
Evaluate Catch Basins	\$ 4,860	\$ -	\$ 4,850
Evaluate With Controls City Owned BMPs (26 City Owned) assuming 4 hours each	\$ 11,620	\$ -	\$ 11,600
Evaluate with Controls Private BMPs - Private SWMP. Mix of modeling and just clicking TP (assumed 36 @ 2 hr each)	\$ 8,700	\$ -	\$ 8,700
Calculate With-Controls Conditions TMDL Load	\$ 6,260	\$ -	\$ 6,250
Summarize Existing TMDL Results	\$ 5,940	\$ -	\$ 5,950
Compile Methodology and Results	\$ 5,090	\$ -	\$ 5,100
3.3 - Evaluation of Potential Future Storm Water Control Practices for Purposes of TMDL Compliance			
Proposed Storm Water Control Practice Evaluation (10 sites @ 4 hr each)	\$ 10,260	\$ -	\$ 10,250
Develop Stormwater Control Practice Cost Estimates and Funding Mechanisms	\$ 7,260	\$ -	\$ 7,250
Develop Implementation Schedule	\$ 3,140	\$ -	\$ 3,150
4 Dry Weather Field Screening			\$ 5,900
Desktop Analysis	\$ 5,860	\$ -	\$ 5,850
5 Recommended Comprehensive Storm Water Management Plan			\$ 34,100
Summarize Data Review	\$ 3,160	\$ -	\$ 3,150
Summarize H&H Study	\$ 9,500	\$ -	\$ 9,500
Compile No-Controls	\$ 3,180	\$ -	\$ 3,200
Compile With-Controls	\$ 3,180	\$ -	\$ 3,200
Compile Future Conditions	\$ 3,900	\$ -	\$ 3,900
Summarize Cost Estimate	\$ 4,640	\$ -	\$ 4,650
Develop Implementation Schedule	\$ 6,460	\$ -	\$ 6,450
6 Meetings			\$ 16,200
Meeting (6)	\$ 16,120	\$ 100	\$ 16,200
Total	\$ 407,890	\$ 100	\$ 408,000

Scope items that can be authorized at a later date.

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About AECOM

AECOM is the world's trusted infrastructure consulting firm, delivering professional services throughout the project lifecycle – from planning, design and engineering to program and construction management. On projects spanning transportation, buildings, water, new energy and the environment, our public- and private-sector clients trust us to solve their most complex challenges. Our teams are driven by a common purpose to deliver a better world through our unrivaled technical expertise and innovation, a culture of equity, diversity and inclusion, and a commitment to environmental, social and governance priorities. AECOM is a *Fortune 500* firm and its Professional Services business had revenue of \$13.3 billion in fiscal year 2021. See how we are delivering sustainable legacies for generations to come at aecom.com and [@AECOM](https://twitter.com/AECOM).

Contact

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Attachment H

Waukesha County Contracted Program Summary Report & Three-Year Public Education and Outreach Plan

INFORMATION AND EDUCATION LEDGER OF ACTIVITIES

Target --from workplan	Req #	req2	req3	Program Name	Activity	Month	Year	Date	Where	# People	Additional Description or Information
General Public	1				displays and handouts	Jan	2022	1-1to 5-21	Pewaukee	100	storm sewer display with Adopt a Drain information at City Hall during tax time
General Public	7				social media	Jan	2022	1-7-22		1	salt awareness post reached 2875 with 169 engagements
General Public	7				social media	Jan	2022	1-10-22		1	salt awareness week post reached 1573 people with 147 engagements
General Public	7				press release	Jan	2022	1-18-22		1	press release for Salt Awareness Week
General Public	7				social media	Jan	2022	1-21-22		1	social media for Salt Awareness at Bark N Brew for Janboree with133 reached and 2 engagements
General Public	2	7			displays and handouts	Jan	2022	1-22-22	Waukesha	75	outreach table at Minooka Beer Garden, "Bark n Brew" event to get out info on salt use and pet waste and promote Salt Awareness Week
General Public	2	3	5	water resources	presentation	Jan	2022	1-22-22	virtual	18	program for a group of teenagers associated with SEWA non profit group
General Public	7				social media	Jan	2022	1-24-22		1	social media post for Salt Awareness Week with 377 reached and 13 engagements
General Public	7				presentation	Jan	2022	1-24-22		361	webinar on Environmental Toll of Salt
General Public	7				social media	Jan	2022	1-25-22		1	social media post for Salt Awareness Week with 54 reached
General Public	7				presentation	Jan	2022	1-25-22		519	webinar on salt in our drinking water
General Public	7				presentation	Jan	2022	1-26-22		421	webinar on what happens to water softener salt
General Public	7				presentation	Jan	2022	1-27-22		280	webinar on acitivities to teach about salt
General Public	7				presentation	Jan	2022	1-28-22		95	webinar panel discussion on salt reduction efforts across the state
General Public	7	2		morning blend	TV media	Feb	2022	2-2-22		1	Segment on Morning Blend TV show covering wise salt use and picking up after your pet
Teachers and Students	1	3	5	I Live	presentation	Feb	2022	2-2-22	Waukesha	65	I live in a Watershed program for Banting Elementary 2nd grade
Teachers and Students	2	3	5	I Live	presentation	Feb	2022	2-3-22	Retzer	55	I Live in a Watershed at Retzer for Brookfield Academy 6th grade
Contractors, Dev. & Consul	7				workshop	Feb	2022	2-3-22	virtual	40	Smart Salting for Parking Lots and Sidewalks virtual training
Teachers and Students	2	3	5	I Live	presentation	Feb	2022	2-7-22	Pewaukee	9	watershed program at Asa Clark Middle school in Pewaukee for environmental club
General Publid	3	7		Splash and Trash	workshop	Feb	2022	2-16-22	Wi Dells	7	Splash and Trash talk with nutrient and snow/salt management for school facilities managers
General Public	2				social media	Feb	2022	2-26-22		1	social media post for National Tell a Fairy Tale Day--Poop Fairy isn't real....pick up after your dog!
General Public	5				press release	Mar	2022	3-1-22		1	press release for spring workshop with soils class
General Public	5	2	3	Water Cycle	presentation	Mar	2022	3-2-22	Retzer	16	Outdoor Classroom on Water Cycle- emphasis on decreasing runoff
General Public	5			morning blend	TV media	Mar	2022	3-2-22		1	appearance on Morning Blend TV show to promote spring workshops--soils
General Public	9				volunteer appreciation	Mar	2022	3-5-22	Retzer	24	volunteer appreciation for Stream Monitors
Teachers and Students	2	3	5	career	presentation	Mar	2022	3-11-22	New Berlin	50	career day for Poplar Creek elementary
General Public	5			Soils	presentation	Mar	2022	3-12-22	Retzer	46	spring workshop session on Soils with emphasis on infiltration with healthy soils
General Public	1				press release	Mar	2022	3-21-22		1	Press Release for Adopt a Drain new communities
General Public	1				social media	Mar	2022	3-22-22		1	social media post for World Water Day launch of Adopt a Drain campaign in Sussex
General Public	3				social media	Mar	2022	3-28-21		1	social media post for National Weed Appreciation Day about chemical use
General Public	7			morning blend	TV media	Apr	2022	4-6-22		1	appearance on Morning Blend TV show promoting greening your laundry room--optimize your water softener
General Public	2				social media	Apr	2022	4-11-22		1	social media post for National Pet Day about picking up after your dog
General Public	2	3	5	Green Home	presentation	Apr	2022	4-12-22	Pewaukee	11	Green Home Makeover program for Pewaukee Public Library
Contractors, Dev & Consul	6	8			workshop	Apr	2022	4-13-22	virtual	195	annual stormwater workshop
Contractors, Dev & Consul	6	8			workshop	Apr	2022	4-14-22	virtual	195	annual stormwater workshop
Teachers and Students	2	3	5	I Live	presentation	Apr	2022	4-14-22	Genesee	32	program for 4th grade as part of Earth Day event
Teachers and Students	3	5		Healthy Soils	presentation	Apr	2022	4-14-22	Genesee	30	program for 5th grade as part of science day event
Teachers and Students	7			WAV	training	Apr	2022	4-19-22	Genesee	15	trained Carrolll University Aquatic Ecology students to collect data for SWIMS/WAV
General Public	5			composting	presentation	Apr	2022	4-19-22	New Berlin	15	Home Composting training for New Berlin Library
General Public	5			healthy sols	e-mail	Apr	2022	4-19-22		46	Follow up to Soils Workshop in March with slake test info and reminder about planted undies
Teachers and Students					displays and handouts	Apr	2022	4-21-22	Oconomowoc	200	staffed booth at Parklawn Elementenary STEM event
Teachers and Students	2	3	5	career	presentation	Apr	2022	4-22-22	New Berlin	102	career day for Orchard Lane Elementary
Teachers and Students	2	3	5	career	presentation	Apr	2022	4-22-22	Mukwonago	31	career day at Parkview Middle School
General Public	2	3	5	water action hike	presentation	Apr	2022	4-23-22	Retzer	20	water action hike highlighting stream life and actions you can take at home to protect it
General Public	2			green cleaning	presentaiton	Apr	2022	4-26-22	Muskego	60	green cleaning workshop at Inpro
Teachers and Students	2	3	5	I Live	presentation	Apr	2022	4-27-22	Muskego	7	program for Muskego Environmental Club
Teacher and Students	2	3	5	career	presentation	Apr	2022	4-29-22	New Berlin	61	career day at Elmwood Elementary School
Teachers and Students	2	3	5	water resources	presentation	Apr	2022	4-29-22	Pewaukee	200	program for all 5th grade students before Camp Whitcomb
General Public	5			morning blend	TV media	May	2022	5-2-22		1	appearance on Morning Blend TV show talking about greening your lawn--topdress with compost for more water infiltration.
General Public	2	3	5	WAV	training	May	2022	5-7-22	Genesee Depot	7	training for WAV program at Prairie Springs Environmental Center
Teachers and students					presentation	May	2022	5-11-22	Genesee Depot	38	program for kindergarten from Big Bend Elementary
Teachers and Students					presentation	May	2022	5-12-22	Genesee Depot	38	program for 2nd grade, Big Bend Elementary
Teachers and Students					presentation	May	2022	5-13-22	Genesee Depot	38	program for kindergarten from Big Bend Elementary
Teachers and Students	2	3	5	career	presentation	May	2022	5-13-22	Sussex	75	career day for Richmond School, Sussex
General Public	9			benchmark	WAV monitoring	May	2022	5-13-22	Pewaukee	2	benchmark for Pewaukee River at the junction with Fox
General Public	5				social media	May	2022	5-16-22		1	social media post about composting kitchen scraps
General Public	9			benchmark	WAV monitoring	May	2022	5-16-22	Genesee	2	benchmark for Genesee Creek and Spring Brook
Teachers and Students					presentation	May	2022	5-17-22	Retzer	90	stream program for Silver Lake Intermediate School from Oconomowoc
General Public	1				displays and handouts	May	2022	5-17 to 6-7	Waukesha	400	Follow the Flow display and handouts at Waukesha Public Library
General Public	9				benchmark	May	2022	5-19-22	Oconomowoc	2	Benchmark for Oconomowoc River at Elm St
General Public	9				benchmark	May	2022	5-22-22	Waukesha	2	Benchmark for Pebble Brook at Oakdale Road
General Public	9				benchmark	May	2022	5-23-22	Pewaukee	2	Benchmark for Pewaukee River at Hwy F
General Public	5			Composting	presentation	May	2022	5-23-22	Retzer	21	Home Composting program

Teachers and Students				presentation	May	2022	5-24-22	Retzer	90	stream program for Silver Lake Intermediate School from Oconomowoc	
General Public	5		Wetlands	presentation	May	2022	5-25-22	Retzer	9	Wonderful Wetlands program for outdoor classroom	
General Public	9			benchmark	May	2022	5-26-22	Dousman	1	Benchmark for Bark River at Genesee Lake Road	
Teachers and Students	4		lake study	presentation	May	2022	5-26-22	Camp Whitcomb	116	Lake study program for Pewaukee 5th graders	
Teachers and Students	4		lake study	presentation	May	2022	5-27-22	Camp Whitcomb	106	Lake study program for Pewaukee 5th graders	
General Public	2	3	5	displays and handouts	May	2022	5-28-22	Waukesha	40	staffed outreach at Minooka Park Beer Garden	
General Public	2	3		e-mail	Jun	2022	6-1-22		168	Adopt a Drain newsletter with articles on grass clippings and pet waste	
Teachers and Students	1	9		field experience	Jun	2022	6-2-22	Eagleville	40	water testing on Jericho Creek with Eagleville Elementary	
General Public	1	5		displays and handouts	Jun	2022	6-6 to 7-7	Sussex	300	Follow the flow display and handouts at Sussex library along with rain barrel diverter kit	
General Public	2	3	5	water resources	Jun	2022	6-7-22	Waukesha	9	program on water resources at Waukesha Public Library	
General Public	2	3	5		presentation	Jun	2022	6-8-22	Eagle	7	program on runoff and rain barrels at public library
General Public	1	3		storm drain disp	Jun	2022	6-8 to 6-27	Pewaukee	300	storm drain display on fertilizer runoff and adopt a drain at Pewaukee Library	
General Public	2	3	5		displays and handouts	Jun	2022	6-10-22	Menomonee Falls	25	staffed outreach at Menomonee Falls Park beer garden
General Public	2	3	5	Crystals Adventure	Jun	2022	6-15-22	Retzer	15	Crystal's Clean water adventure at Outdoor Classroom	
General Public	9			mussel monitoring	Jun	2022	6-21-22	Mukwonago	7	training on mussel monitoring and id	
General Public	2	5		Sustainability	Jun	2022	6-22-22	Retzer	20	BSA Sustainability Merit Badge Class	
General Public	2	3	5	Soil and Water	Jun	2022	6-24-22	Retzer	5	BSA Soil and Water Conservation Merit Badge Class	
General Public	2	3	5		displays and Handouts	Jun	2022	6-25-22	Pewaukee	250	enviroscape and other materials at Clean Water Festival in pewaukee
General Public	2	3	4		displays and handouts	Jun	2022	6-1 to 6-30	Oconomowoc	400	special water themed display at Oconomowoc Public library with many handouts, banner and posters
General Public	3	5		Home Composting	Jul	2022	7-6-22	Mukwonago	7	Home composting program through the Public Library	
General Public	1	3		rain barrels	Jul	2022	7-7-22	Sussex	29	rain barrel program through the Public Library	
General Public	2	3	5		displays and handouts	Jul	2022	7-8-22	Retzer	50	beer garden outreach with handouts and trivia
General Public	1	7			presentation	Jul	2022	7-13-22	Retzer	37	stream program at Retzer for Outdoor classroom
Teachers and Students	1	7			presentation	Jul	2022	7-14-22	Retzer	178	stream program at Retzer for summer school program
General Public	2	3	5	outreach	Jul	2022	7-21-22	Waukesha	40	outreach with watershed model at Waukesha County Fair through 4-H expo	
General Public	2	3	5		presentation	Jul	2022	7-22-22	Retzer	20	water day for Wisconsin Master Naturalist Training at Retzer
General Public				outreach	Jul	2022	7-27-22	Hartland	300	Hartland Kids Fest outreach booth	
General Public	1	2		outreach	Jul	2022	7-1 to 7-31	Oconomowoc	400	stormwater banner with handouts at Oconomowoc Public Library	
General Public	1	3		outreach	Aug	2022	8-2-22	Mukwonago	300	storm drain model for National Night Out	
General Public	1	5		thermodynamics	Aug	2022	8-3-22	Retzer	27	Thermodynamics class for Outdoor Classroom	
General Public	1	3		outreach	Aug	2022	8-3-22	Sussex	300	Storm drain model for National Night Out	
General Public	1	3	5	rain barrels	Aug	2022	8-3-22	Oconomowoc	0	Rain barrel program for Oconomowoc Public Library	
General Public	9			mussel monitoring	Aug	2022	8-4-22	Oconomowoc	7	Asian Clam survey on Oconomowoc River	
General Public	1			outreach	Aug	2022	8-9-22	Oconomowoc	400	outreach booth at Oconomowoc Kids Fest	
General Public	1			outreach	Aug	2022	8-9-22	Vernon	2176	stormwater banner at primary election day	
General Public	1	3		outreach	Aug	2022	8-9-22	Pewaukee	1200	storm drain display at Village of Pewaukee primary election	
General Public	1	2	3	outreach	Aug	2022	8-9-22	Wales	675	Clean Water One Step at a Time display boards at Village of Wales primary election	
General Public	5	2	3	program	Aug	2022	8-16-22	Pewaukee	63	walking rain garden tour hosted by Green Team at Pewaukee Public Library	
General Public	9			field work	Aug	2022	8-20-22	Oconomowoc area	5	Snapshot Day search for invasive species	
Teachers and Students	6	8		sustainable building	Aug	2022	8-24-22	WCTC	13	virtual program for Sustainable Building Class for WCTC	
General Public	5				presentation	Aug	2022	8-24-22	Waukesha	26	Memory café program about fishing and impervious surfaces
General Public	1	2	3	outdoor classroom	Sep	2022	9-7-22	Retzer	0	Clean water capers program with watershed model for outdoor classroom	
Teachers and Students	3	5		Healthy Soils	Sep	2022	9-7-22	Waukesha	36	healthy soils program for Prairie Elementary	
Teachers and Students	1	2	3	water resources	Sep	2022	9-12-22	Waukesha	46	water resources program for Prairie Elementary in Waukesha	
Teachers and Students	3	5		Healthy Soils	Sep	2022	9-13-22	Waukesha	66	healthy soils program for 3 classes at Rose Glen	
Teachers and Students	3	5		Healthy Soils	Sep	2022	9-15-22	Waukesha	38	healthy soils program at Hadfield Elementary	
General Public	1	2	3		displays and handouts	Sep	2022	9-17-22	Retzer	500	staffed outreach with water bugs, water quality and storm drains at Apple Harvest fest
General Public	2	4	5		displays and handouts	Sep	2022	9-16 to 18	North Prairie	3000	unstaffed display at annual Fall Harvest Festival
Teachers and Students	1			career	Sep	2022	9-21-22	virtual	100	virtual career day presentation through Junior Achievement	
Teachers and Students	1	2	3	water resources	Sep	2022	9-22-22	Waukesha	44	program for 2 classes at Lowell Elementary	
Teachers and Students	3	5		Healthy Soils	Sep	2022	9-27-22	Waukesha	20	healthy soils program for Hadfield Elementary	
General Public	7			HHW	Oct	2022	10-5-22		1	Morning Blend appearance about Household Hazardous Waste proper disposal	
General Public	1	2	3	WAV	Oct	2022	10-6-22	Prairie Springs	10	WAV volunteer training at Master Naturalist Summit	
General Public	7				presentation	Oct	2022	10-7-22	Retzer	6	salt awareness training/presentation at Master Naturalist Summit
Teachers and Students	1	3	5	career	Oct	2022	10-13-22	Pewaukee	45	enviroscape model for career day at Pewaukee High School	
Teachers and Students	1	2	3	I Live in	Oct	2022	10-13-22	Waukesha	16	presentation for La Casa 7th grade students	
Teachers and Students	6	8		sustainable building	Oct	2022	10-19-22	Waukesha	18	virtual program for Sustainable Building Class for WCTC	
Teachers and Students	3	5		Healthy Soils	Oct	2022	10-21-22	Waukesha	35	Healthy Soils for Hawthorne Elementary	
Teachers and Students	3	5		Healthy Soils	Nov	2022	11-1-22	Waukesha	30	Healthy Soils for Montessori School	
General Public	1	7			presentation	Nov	2022	11-5-22	Retzer	15	Inside and Outside of Retzer Creek hike/program at Science Fest
General Public					displays and handouts	Nov	2022	11-5-22	Retzer	100	hands on activity table covering
Teachers and Students	1	2	3	career	Nov	2022	11-7-22	New Berlin	10	Career day at New Berlin West	
General Public	7				displays and handouts	Nov	2022	11-8-22	Vernon	4660	Know B4 you Throw Display covering salt use and awareness
General Public	1				displays and handouts	Nov	2022	11-8-22	Wales	1639	Stormwater banner connecting storm drains to lakes and rivers
Teachers and Students	1	2	3	water resources	Nov	2022	11-9-22	Waukesha	45	program for 2 classes at Hawthorne Elementary	
Teachers and Students	1	5			water testing	Nov	2022	11-29-22	Sussex	46	water testing class for AP Environmental Science Students at Hamilton High School

Teachers and Students	1	2	3	career	presentation	Dec	2022	12-2-22	New Berlin	90	career day at Elmwood Elementary School
Teachers and Students	1	2	3	career	presentation	Dec	2022	12-5-22	Wales	47	career day at Kettle Moraine High school
General Public	5				Morning Blend	Dec	2022	12-7-22		1	promo for rain barrel diverter and soil testing as green christmas gifts on the Morning Blend
General Public	1			tax inserts	displays and handouts	Dec	2022		countywide	77000	tax inserts with basic storm drains deliver to streams, keep the water clean message
General Public	1	3	4		displays and handouts	Dec	2022	12-19-22	Pewaukee	400	display for City of Pewaukee during tax payments

MS4 Information and Education 3 Year Plan

Prepared by Waukesha County for the

City of Pewaukee

2023

Key Focus: Yard Waste Management/Composting

Special Emphasis: Riparian owners

Reasoning and Goals: The City chose this topic for the first year to be able to leverage partnering with the Village and Town of Delafield to really target the riparian owners around Pewaukee Lake. With an already established Adopt a Drain program, we can measure citizen engagement through that program for general yard waste. The first goal will be to see 10 new storm drains adopted. The second goal will be to have at least 20 people participate in the shoreline workshop.

Plan Elements:

1. **Social media posts:** County will provide 6 social media posts to highlight seasonal lawn care and waste management. City will post once per month May - October.
2. **Utility bill messaging:** County will, with input from the City, develop messaging for 3 utility bills. City will include in bills typically sent out in April, July and October.
3. **Educational workshop - composting:** County will provide a workshop on yard waste management at the Pewaukee Library. Pewaukee Green Team will be invited to co-host. County will promote the workshop through providing a display banner to the library prior to the workshop. City will promote the workshop by posting the event on their website, at their building, and via a social media post (County to provide).
4. **Educational workshop – shoreline management:** The County will provide a workshop on shoreline management. Pewaukee Green Team and the Pewaukee River Partnership will be invited to co-host. County will promote the workshop through a targeted mailer sent to all riparian owners in the Municipality (City to provide names and addresses). City will promote the workshop by posting the event on their website, at their building, and via a social media post (County to provide).
5. **Outreach:** County will have a staffed yard waste management outreach display at the Clean Water Festival.
6. **Webpage information:** County will create content for a website identifying the EPA's hierarchy of yard and food waste management and providing local resources for the management of organic items. City will provide County terms of current yard waste program available to residents in the City (i.e. curbside/drop off options as available) and will host the final webpage on the City's website for the duration of the 3 year plan.

Implementation Month	Item
January	Webpage information
April	Utility bill message

	Educational Workshop – Composting (proposed)
May	Social media post Summer staff training
June	Social media post Outreach – Clean Water Festival
July	Social media post Utility bill message
August	Social media post Educational Workshop – Shoreline Management (proposed)
September	Social media posts
October	Social media post Utility bill message

2024

Key Focus: Homeowner Association Education

Reasoning and Goals: The City has many aging BMP's spread through many neighborhoods. As the day approaches that maintenance may be required, it is time to start educating the homeowners associations about their obligations, so they can take actions to delay required maintenance and begin budgeting for the inevitable. The goal will be to have at least 10 associations represented at the educational meeting.

Plan Elements:

1. **Social Media:** County will provide one social media post to advertise the workshop, and one social media post addressing maintenance.
2. **Stormwater Billing:** County will, with input from the City, provide an insert for the stormwater billing.
3. **Educational workshop – BMP Maintenance for HOA's:** County will work with the City to provide a fall workshop on BMP maintenance aimed at Homeowners Associations.
4. **Outreach:** County will provide a display and outreach materials for Public Works Day.

Implementation Month	Item
March	Set workshop date and location Display for Public Works Day
September	Social media posts delivered Article for fall newsletter delivered Targeted mailing for workshop invitations
October	Fall workshop on BMP maintenance

2025

Key Focus: Adopt a Drain

Reasoning and Goal: The Adopt a Drain program is a great way to educate and engage residents with measurable results. Because taking care of a storm drain addresses so many of the pollutants it was decided to take extra steps to increase the number of storm drains adopted. The goal will be to have at least 10 new drains adopted in 2025.

Plan Elements:

1. **Social media posts:** County will provide a series of 8 social media posts to promote the Adopt a Drain program. City will post one per month from March to October.
2. **Utility bill messaging:** County will, with input from the City, develop messaging for 2 utility bills. City will include in bills typically sent out in April and July.
3. **Display:** County will coordinate with the Pewaukee Public Library to host the interactive storm drain display during the month of March. The County will deliver, set up, and pick up the display from the library. Display must be plugged in for maximum interaction.
4. **Display:** City will host the interactive storm drain display at City Hall in December during tax payment time. County will deliver, set up, and pick up the display from City Hall. Display must be plugged in for maximum interaction.
5. **Outreach:** County will set up the storm drain display at the Clean Water Festival.
6. **K-12 programming:** – County will work with the Pewaukee School District to include education for 5th grade class during pre-camp presentation.
7. **Outreach:** County will share Adopt a Drain information with Pewaukee Women’s Club to encourage adoptions.

Implementation Month	Item
March	Social media post Display at Library
April	Utility bill message Social media post Display at Spring Elections Outreach to Women’s Club
May	Social media post K-12 programming – present to 5 th grade
June	Social media post Outreach – Clean Water Festival
July	Utility bill message Social media post
August	Social media post
September	Social media post
October	Social media post

Attachment I

Department of Public Works Newsletters and Grass Clippings Flier

Storm Water Pollution—Protecting Our Valuable Water Resources

Storm water pollution prevention is important and begins at home. Pollution in storm water runoff threatens not only our drinking water, but swimming, fishing and other recreational water use. Storm water runoff comes from the rain and melting snow that flows off streets, lawns, parking lots, roof tops, open fields and other areas.

A watershed is the area of land that catches the rain and snow melt, which then drains into a common body of water. The curbs, gutters and drainage ditches that run along your street are the first part of your neighborhood's drainage system within the watershed. The stream or pond that receives storm water drainage from streets of several neighborhoods is part of a larger watershed. That stream in turn flows into a larger stream, lake or river. Unlike sanitary sewers, anything dumped into the storm drain system flows directly into the nearest lake, stream or creek, and ultimately our rivers without any treatment to remove contaminants.

What Can I Do to Help?

- » Don't dump leaves or other yard waste into streams, storm drains, ditches or creeks.
- » Leave grass clippings on the lawn as fertilizer.
- » Pick up pet waste. Bacteria from pet waste are a serious threat to the quality of our water. Carry a plastic bag when you walk your pet and then throw the bag in your trash (not in the storm drain!).
- » Never pour used oil, paint thinner or other chemicals into storm drains, waterways or on the ground. Recycle used oil and dispose of chemicals properly.
- » Use lawn chemicals sparingly, according to directions. Organics are a good alternative.
- » Keep vehicles properly tuned and promptly repair any fluid leaks.
- » Keep litter and recycling contained to prevent it from entering the storm drains.

Adopt a Drain Program

Do you have 15 minutes twice a month to help protect our lakes and rivers? Consider adopting a storm drain. Adopters are asked to clean the surface of their drain twice a month and report the quantity and composition of debris removed. Join this new program now available in the City of Pewaukee. You are only a few steps away from making a difference for our community.

1. Go to <https://www.waukeshacounty.gov/AdoptaDrain>.
2. Find a drain by clicking on the map and complete the requested information. Adopters will receive a storm drain marker, safety vest, and quarterly email reminders and news.
3. Twice a month, clean around your storm drain. Safety first...watch the video on the website.
4. Report your work. The instructions will show you how to report your cleaning and collection activity.

City of Pewaukee Lawn Watering Policy

With the summer watering season just around the corner, this is a reminder that the City of Pewaukee has annual lawn watering restrictions in place between May 15 and September 15. Outdoor irrigation/sprinkling, including lawn and garden watering, is restricted to **every other day** during this time. Customers whose official address ends in an **even** number will be allowed to water only on **even** number calendar days, and those whose official address ends in an **odd** number will be allowed to water only on **odd** number calendar days. (Ord. Sec. 16.0202) For more information contact our office at (262) 691-0804.

PUBLIC WORKS DEPARTMENT

W240N3065 Pewaukee Road

Pewaukee, WI 53072

Office: (262) 691-0804

E: publicworks@pewaukee.wi.us

Regular Hours: Monday-Friday

8:00 am to 4:30 pm

Drop Box Available 24/7 in

City Hall Main Foyer

Engineering Division

Magdelene Wagner, P.E.

Director of Public Works/

City Engineer

Highway Division

Matthew Stevens

Street Superintendent

Water & Sewer Division

Jane Mueller

Utility Manager

RECYCLING CENTER

Open Year Round

Saturdays: 9:00 am to 3:00 pm

Open April thru November

Wednesdays: 1:00 to 6:00 pm

City Recycling Permit Required



2022 PUBLIC WORKS PROJECTS



NEW Department of Public Works Highway Garage

In 2020, the City of Pewaukee completed a review of the Department of Public Works' (DPW) existing condition and space needs. The last improvement to the existing DPW facility was in 1993, which added a three-bay garage but did not include any additional space for staff. Since 1993, the city has grown to approximately 96 miles of public roadway and has added four additional full-time Highway staff. The results of the review of the facilities and space needs found a new DPW building was necessary. In 2020, the city reviewed building a new facility on the existing site. It was determined the existing site was not adequate to accommodate the needs of the department. The city sought and found a new site on Green Road. Construction on the new facility began in fall of 2021. The facility will provide a new Highway garage, mechanics bay, wash bay, lunchroom and lockers for staff. The existing salt shed has reached the end of its useful life and has structural deficiencies which reduced the useable capacity for the last several years. The new facility will include a replacement salt shed, fueling island, and a new recycling yard. Construction is anticipated to be completed in late fall of 2022. Watch for details for an open house in the future.

City Road & Bridge Projects

Questions on City of Pewaukee road and bridge projects may be directed to the Engineering Department at (262) 691-0804, or email publicworks@pewaukee.wi.us. Information can also be found on the city's website at <https://www.cityofpewaukee.us/480/Road-Construction>. Questions regarding County roads (which have a letter designation, e.g. CTH F) and state highways (which have a number designation, e.g. STH 164) should be directed to Waukesha County at (262) 548-7736.

Duplainville Road and Trail

The City is replacing Duplainville Road from the Canadian National railroad tracks to Weyer Road. The new road will be concrete pavement where the road abuts businesses with heavier traffic, and asphalt pavement where the road abuts residential neighborhoods. This project includes adjustments to the road to account for developments in the area made since the road was previously rehabilitated. These adjustments include converting the two-way stop at the intersection of Duplainville Road and Green Road to a four-way stop, installing new storm structures to improve drainage in the area, and adding a multi-use asphalt trail. The project will be bid in April. Affected properties will receive notices in the mail for a public hearing anticipated in May. Construction is planned for summer of 2022. During construction, Duplainville Road will be closed to thru traffic. Please follow posted detour routes.

Lindsay Road Trail

As part of the Duplainville Road project, the city is considering constructing an asphalt trail to connect the Duplainville Road Trail to the Pewaukee Sports Complex. The trail will be parallel to Duplainville Road for the length of the road reconstruction. The City of Pewaukee is working with Waukesha County to make sure the trail will continue through the new intersection of Lindsay Road and Redford Boulevard. It is anticipated that this trail would be constructed concurrently with the Duplainville Road and Trail project in the summer of 2022.

CTH F (Redford Blvd) and Lindsay Road Intersection

Waukesha county has scheduled a safety construction improvement at the intersection of CTH F and Lindsay Road for 2023 with a Highway Safety Improvement Program grant. This construction project has the goals of improving traffic safety around the intersection and connecting future segments of the city's multi-use trail along Lindsay Road. Since this is a county project, all comments and questions concerning this project should be directed to: Nathan Beth, P.E., Waukesha County Department of Public Works, 515 West Moreland Boulevard, Room 220, Waukesha, WI 53188, nbeth@waukeshacounty.gov.

Joseph Road

The Joseph Road reconstruction, water main extension, sanitary sewer extension, and storm sewer project was awarded in 2021. Due to supply chain issues, the construction project was delayed to 2022. This project will extend municipal sewer and water to the adjacent properties. The road will be reconstructed with curb and gutter and new asphalt pavement. The project is planned to begin in mid-April.

Meadowbrook Farms Phase 2

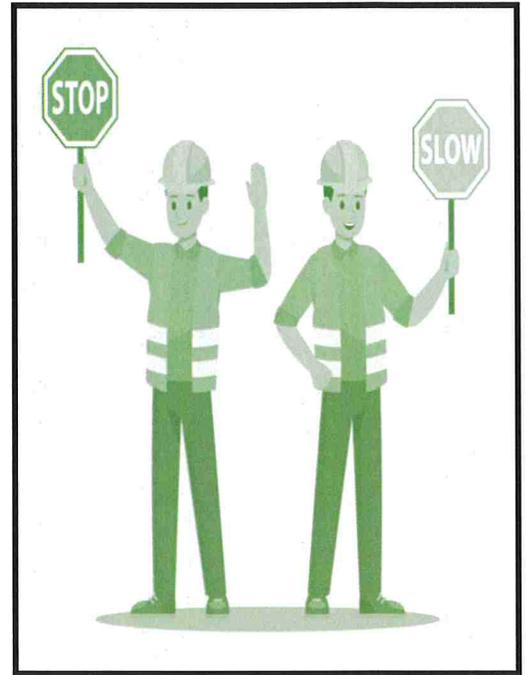
The city is continuing its current phasing to repave the public roads within the Meadowbrook Farms subdivision, with its second phase of work scheduled for 2022. Similar to the previous year's phase, this work will include repaving Cattail Court, Sawgrass Court and Sawgrass Lane, and adjustments to underground utility structures in the area. Notices were mailed to affected residents and a public hearing was held on Monday, March 7th. The project was awarded to Wolf Paving Company. Construction will take place in the summer of 2022.

Northview Road Sidewalk

The city has awarded a sidewalk extension project connecting the existing sidewalk at the intersection of Meadowbrook Road and Northview Road to the city's South Park on Northview Road. The project will include drainage improvements around the area to support the sidewalk. A portion of the sidewalk is being funded by the Impact Fees. Construction will take place in summer of 2022.

Paul Road and Roundy's Business Park

The Paul Road and Roundy's Business Park project includes road rehabilitation on Paul Road, Roundy Circle East, Roundy Circle West, and Roundy Drive, along with a water main relay on Paul Road. The existing pavement will be removed and replaced. Minor storm sewer work and adjusting the intersection and island at Roundy Circle East and Roundy Drive will be completed as part of the project. In 2021, Roundy Drive and Roundy Circle construction was completed. Paul Road construction was delayed due to supply chain issues. The project is planned to begin in mid-April 2022. During construction, the road will be closed to through traffic and a detour will be posted.



Shady Lane and Shady Nook

The city is considering the installation of sanitary sewer and water main along with necessary laterals and services for homes along Shady Lane and Shady Nook within the Hill N Dale subdivision. The installation of these utilities will coincide with the reconstruction of these roads. In addition, this project involves the construction of a new dry pond and other drainage improvements along Hill N Dale Circle. These drainage improvements will help better manage stormwater collected in the neighborhood. The city expects to bid the project in May of 2022. Affected properties will receive a notice of public hearing in the following month at the City's Council Chambers to discuss impacts and improvements to the area.

Busse Road Bridge Replacement

The city will be replacing the Busse Road bridge in 2022. The bridge has reached the end of its useful life and has been weight restricted for several years. This bridge replacement will close the road at the bridge for several months. The bridge will be replaced using city funds and Storm Water Utility Fee funds. Affected property owners will be notified prior to starting construction.

Duplainville Road Bridge Replacement

The Duplainville Road bridge has reached the end of its useful life and is scheduled to be replaced in 2022. The city applied for and received a federal grant to fund 80% of the cost of its replacement. The remaining 20% will be paid for by city funds and Storm Water Utility Fees. The bridge will be widened to accommodate the Duplainville Road Trail project. Construction is planned to begin in late summer. This replacement will close Duplainville Road to thru traffic. Please follow posted detour routes.

Future Road Projects

As part of the Annual Budget process, the Engineering Division reviews road conditions and creates a five-year paving program. This is used to create the annual paving budget during the annual budget process. Several factors are considered when this plan is created. Roads are rated annually using a PASER rating system. A new road is rated a 10 and a road with severely broken asphalt is a 1. In addition to the rating, the staff reviews whether other utilities (sanitary sewer or water main extension) are needed along with other adjacent projects or needs. The full, five-year paving program is available on the City of Pewaukee website at <https://www.cityofpewaukee.us/480/Road-Construction> (see back page of this newsletter for Years 2022-2023). The paving program is reviewed annually and may change depending on other circumstances and budget.

HIGHWAY DEPARTMENT

The Benefits of Street Sweeping

Street sweeping involves the use of specialized equipment to remove litter, loose gravel, soil, pet waste, vehicle debris and pollutants, dust, de-icing chemicals, and industrial debris from road surfaces. Street sweeping equipment can consist of a truck or truck-like vehicle equipped with multiple brushes, pick-up deflector, holding bin, water sprayer, vacuum nozzle and filter, or a combination of some or all of these features.



Street sweeping not only makes the streets cleaner, it is an important part of storm water pollution prevention. It prevents unwanted materials from flowing into the storm drains and causing backups and flooding. It also keeps job sites clean and safe and helps to minimize tire damage.

When done regularly, street sweeping can remove 50-90% of street pollutants that potentially can enter surface water through storm sewers. Street sweepers will also make road surfaces less slippery in light rains, improve aesthetics by removing litter, and control pollutants which can be captured by the equipment. With the many services street sweeping offers, it's easy to see the variety of health and safety benefits for our community.

Health Benefits

The overall health of our city is very important. From the water we drink, to the food we put on our table, to the air we breathe, health is one of the main components defining the well-being of our local community.

- » **Hazardous Materials** – One of the main ways street sweeping helps improve the health of a community is by removing harmful materials from the vicinity of our schools, homes, and streets. These materials can include metals, organics, harmful nutrients and more. It is estimated that an average of 2,000 tons of debris is removed annually per street acre swept.

Safety Benefits

It's no surprise that safety should be a top priority in any community. Another benefit of street sweeping is the safety it provides our neighborhoods. Let's look at a some of the ways it helps keeps us safe:

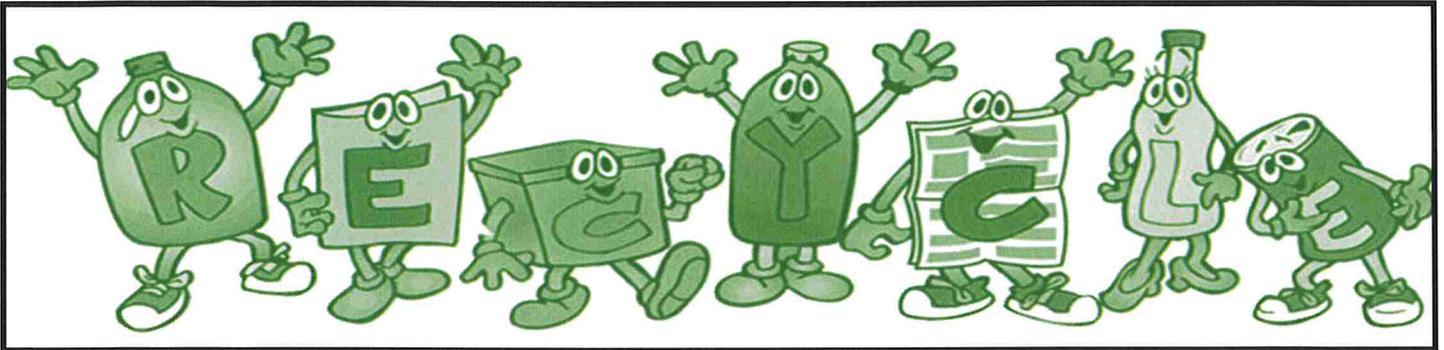
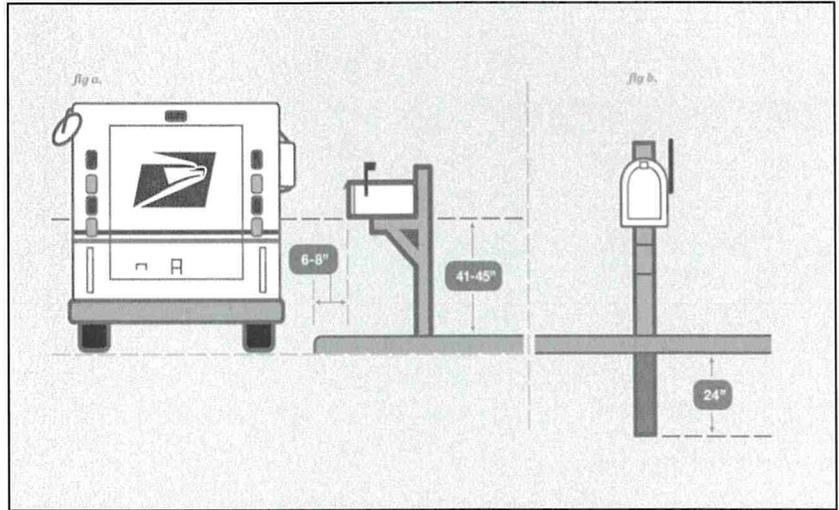
- » **Public Safety** – Public safety should always be a primary concern for all residents, as well as those traveling through or visiting our community. The removal of roadside debris lessens the rate of vehicle accidents and improves safety for drivers, pedestrians, runners and cyclists. Construction and roadway debris can cause unsightly conditions, as well as leave items that may leak into streets or on paved paths. If not swept routinely, this debris can lead to accidents and injuries.
- » **Environmental** – A critical benefit of street sweeping stems from the removal of harmful metals and pollutants that can enter our air emissions. By reducing the amount of road debris, street sweeping helps preserve our local rivers, beaches, and air.
- » **Pavement Protection** – At the end of the day, street sweeping is about protecting and preserving what we have now and for the future. Maintaining a routine sweeping schedule in our community helps remove wearing debris and extends the life of paved roads and pathways.
- » **Wildlife Protection**– Street sweeping helps eliminate the amount of plastics and litter that end up on the sides of roads and can be harmful to our local wildlife.
- » **Preservation** – When thinking of street sweeping, it's often thought about in the short-term; however, when viewed through a different lens, street sweeping plays an important part in preserving the environment around us for years to come.



Street sweeping is a vital service that helps maintain a clean city environment and improves the overall quality of life for our residents. People who live on clean streets are also more likely to make efforts to keep their neighborhoods looking nice. The city's street sweeping is paid for by the Annual Storm Water Utility Fee.

Mailbox Maintenance

It is important for residents and business owners to conduct periodic mailbox inspections and perform routine maintenance on your mailbox. Check for adequate construction of materials and the condition of the mailbox and support post. Mailboxes should be installed and maintained to withstand snow coming off the end of the plow. Summer is the perfect time to get this work done. Remember, the mailbox must be approximately 3'6" above ground grade. Additional guidelines such as post installation, mailbox size, etc. are available on the USPS website: <https://www.usps.com/manage/mailboxes.htm>.



Summer Hours Return at the Recycling Center

The City of Pewaukee's summer schedule for the Recycling Center starts on Wednesday, April 6, 2022. Located behind City Hall, the Recycling Center will be open on Wednesdays from 1:00 p.m. to 6:00 p.m. and Saturdays from 9:00 a.m. to 3:00 p.m., except on holidays. A city recycle permit tag must be displayed in your vehicle when visiting the Recycling Center. City tags can be obtained at no charge from the Clerk's office at City Hall during regular business hours.

For more information, or a list of acceptable items allowed in the Recycling Center, please visit our website at www.cityofpewaukee.us and search for Garbage and Recycling.

Johns Disposal and Special Pick-ups

The City of Pewaukee contracts with Johns Disposal for garbage and recycling pick-up. Residents of the city are required to call to schedule bulky item collections. Any items that do not fit in your garbage or recycling cart must be called in to Johns Disposal at (262) 473-4700, or emailed to office@johnsdisposal.com for a bulk items pick-up. Their office hours are Monday-Friday from 8:00 a.m. to 4:30 p.m., and Saturday from 8:00 a.m. to 12:00 p.m. Bulk items are scheduled regularly throughout the month. You may schedule up to one bulk items collection per month, with a total of 12 per year. Bulk items must weigh no more than 50 lbs. each and can be easily manageable by one person. Visit the city website at www.cityofpewaukee.us and search Garbage and Recycling for the Johns Disposal website link and collection schedule.

Johns Disposal also offers yard waste pick up. Yard waste must be contained in a brown paper yard waste bag and each bag shall not exceed 50 pounds. Each bag must have a collection sticker attached. Stickers are available from Johns Disposal or can be picked up at Pewaukee City Hall for \$1.25 each. Starting January 1, 2022, you must call Johns Disposal at (262) 473-4700 ahead of time to schedule a yard waste pick-up.

Placement of Garbage and Recycling Containers

City residents are reminded to put your garbage and recycling carts in the driveway, **not on the street**. All carts shall be placed in the driveway no earlier than 24 hours before collection, and must be returned to the house no later than 24 hours after collection.

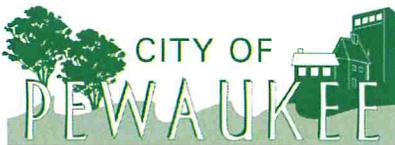
YEAR 2022-2023 PAVING PROGRAM

YEAR 2022 TO 2026 PAVING PROGRAM CITY OF PEWAUKEE

ROAD	<u>YEAR - 2022</u>	RATING	BUDGET ESTIMATE	% ASSBLE	NOTES
<i>Local Collectors</i>					
Duplainville (Tracks to Weyer) (12,150')		4	\$6,700,000.00	0%	Reconstruction (Addn'l \$350,000 in Hike/Bike budget)
<i>Subtotal Local Collectors</i>			<i>\$6,700,000.00</i>		
<i>Subdivision Roads - Maintenance</i>					
Joseph Road (1,020')		1	\$400,000.00	100%	Reconstruction - delayed from 2021 due supply issue
Busse Road Bridge Replacement			\$350,000.00	0%	Full Structure Replace 50/50 share with SWU
Shady Lane/Shady Nook (1,742')		2	\$375,000.00	10%	Reconstruction - Sewer & Water Potential
Duplainville Road Bridge Replacement			\$300,000.00	0%	Full Structure Replacement 50/50 share with SWU
Shooting Star Road/Meadowbrook Farms Ph. 2 (4,704')		4	\$400,000.00	20%	Full depth mill & Overlay
Kopmeier Drive (2,751')		4	\$400,000.00	20%	Sewer relay in center of road; pulverize & overlay
Lexington/Takoma Area		3	\$84,000.00	20%	Design
Spice Creek/Meadowbrook Farms Ph 3 (5,940')		4	\$15,000.00		Design
Lindsay/Redford Intersection			\$20,000.00	0%	Design - County Agreement -2023 construction
<i>Subtotal Subdivision Roads</i>			<i>\$2,344,000.00</i>		
TOTAL RECOMMENDED BUDGET ESTIMATE			\$9,044,000.00		

ROAD	<u>YEAR - 2023</u>	RATING	BUDGET ESTIMATE	% ASSBLE	NOTES
<i>Local Collectors</i>					
Watertown Road		4	\$100,000.00	30%	Design
Green Road Microsurfacing		8	\$150,000.00	0%	Maintenance
<i>Subtotal Local Collectors</i>			<i>\$250,000.00</i>		
<i>Subdivision Roads - Maintenance</i>					
Spice Creek/Meadowbrook Farms Ph 3 (5,940')		4	\$470,000.00	50%	Full Depth Mill & Overlay
Lexington/Takoma Area		3,4	\$950,000.00	20%	Partial Replacement & Pulverize & Overlay
Lindsay/Redford Intersection			\$150,000.00	0%	Construction - County Agreement
Rolling Ridge 1 (3,907')		3,4	\$40,000.00		Design - Sewer & Water Potential
Sherwood Forest/Busse		2,3,4	\$60,000.00		Design - Sewer & Water Potential
Spice Creek/Meadowbrook Farms Ph 4 (5,045')		3,4	\$15,000.00		Design
<i>Subtotal Subdivision Roads</i>			<i>\$1,685,000.00</i>		
TOTAL RECOMMENDED BUDGET ESTIMATE			\$1,935,000.00		

The full, five-year paving program is available on the City of Pewaukee website at <https://www.cityofpewaukee.us/480/Road-Construction>

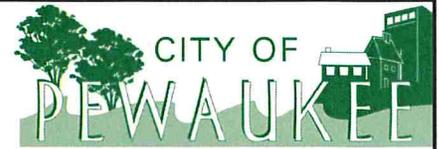


DEPARTMENT OF PUBLIC WORKS
W240N3065 PEWAUKEE ROAD
PEWAUKEE, WI 53072

PLEASE
PLACE
STAMP
HERE

Mailing Address Line 1
Mailing Address Line 2
Mailing Address Line 3
Mailing Address Line 4
Mailing Address Line 5

Department of PUBLIC WORKS



2022 Winter Issue

PUBLIC WORKS DEPARTMENT

W240N3065 Pewaukee Road
Pewaukee, WI 53072
Office: (262) 691-0804
Email: publicworks@pewaukee.wi.us
Regular Hours: Monday-Friday
8:00 a.m. to 4:30 p.m.
Drop Box Available 24/7 in the
City Hall Main Foyer

Engineering Division

Magdelene Wagner, P.E.
Director of Public Works/
City Engineer

Highway Division

Matthew Stevens
Street Superintendent

Water & Sewer Division

Jane Mueller, Utility Manager

RECYCLING CENTER

Open Saturdays Year-Round:
9:00 am to 3:00 pm
Open Wednesdays April thru Nov:
1:00 to 6:00 pm
City Recycling Permit Required

EMERGENCY NUMBERS

City Road Emergency: (262) 466-5070
City Sewer or Water: (866) 248-7555
LPSD Sanitary Sewer: (262) 366-4627

OTHER CONTACT NUMBERS

Billing City Water/Sewer (262) 691-0804
County Road Issues (262) 548-7736
Dead Deer on City Road (262) 446-5070
Dead Deer-County Road (262) 548-7736
Hydrant Water Use (262) 691-0804
Johns Disposal (262) 473-4700
Spills or Illicit Discharge (800) 943-0003
Storm Drainage Issues (262) 691-0804

Email Questions to:
publicworks@pewaukee.wi.us



Important Information Regarding Your Mailbox

The snow and wind keeps our City snow plow drivers very busy in the winter. Every year we advise our residents to inspect their mailbox and post to make sure that it doesn't need to be repaired or replaced. Grab it and give it a good shake. If it wiggles at all, that's a good indication that it needs some maintenance.

The City of Pewaukee is completing an inventory of mailboxes found in poor condition. You will be notified if we find that your mailbox needs to be repaired or replaced. ***If you do not make the necessary repairs or replace it, the City will not repair the mailbox if it is damaged during snow plow operations.***



Mailboxes should be installed and maintained to withstand the snow coming off the end of the plow. Remember to clear the area around your mailbox after every snowfall. Guidelines regarding mailbox placement is available on the USPS website: <https://www.usps.com/manage/mailboxes.htm>.

In an Emergency Every Second Counts!

If you have a fire hydrant in your front yard, please help by keeping it clearly visible from the road. Firefighters lose valuable time trying to locate a hydrant buried in snow when they arrive at a fire. You are performing a valuable public service and protecting yourself, your family and your neighbors by taking on the responsibility of shoveling out and clearing the fire hydrant near your home. With plenty of snow on the way, we'd like to offer these suggestions:



- * Know the location of the nearest fire hydrants.
- * Make sure hydrants are shoveled after each snowfall.
- * Clear the snow at least 3 feet around the hydrant so firefighters have enough room to access the hydrant.

We appreciate your help in keeping our City safe by clearing out the hydrants near your property.

City Hall will be closed for the holidays on December 23, 26, and January 2. We will be open until noon on December 30.

Holiday Recycling — Don't Get Wrapped Up By These Mistakes!

Every holiday season people unknowingly wreak havoc on their local recycling facilities by placing the wrong items in their blue recycle carts. Although their intentions are good, the cost of dealing with those misplaced items can quickly turn any recycling worker into a Grinch. And, with the amount of garbage increasing by 25% from Thanksgiving to New Year's Day, there is a lot of room for error. Below is a list of holiday items that can or cannot be placed in your recycle cart.

These items CAN be recycled:

- Cardboard shipping boxes (flattened and empty)
- Plain paper holiday cards and envelopes (no ribbon, foil, sound, glitter, or photo paper)
- Plain paper shopping bags and gift bags
- Sticker gift tags (if placed on recyclable material)
- Beverage bottles from entertaining
- Real trees completely stripped of all decorations

Visit <https://www.waukeshacounty.gov/productdisposal> for more information on disposal options.

These items CANNOT be recycled:

- Holiday lights and tinsel
- Wrapping paper made with glitter or foil
- Gift bags, bows and ribbon
- Tissue paper
- Artificial trees
- Bubble wrap or Styrofoam
- Glass ornaments
- Plastic packaging envelopes
- Outdoor decorations
- Toys or plastic items, especially if they have lights or make sounds

City Recycling Center - Winter Schedule

The City of Pewaukee Recycling Center will be closed on **Wednesdays** as of December 7, 2022 for the winter season. The Recycling Center remains open on Saturdays from 9:00 a.m. to 3:00 p.m. year-round, except on holidays. A city recycle permit tag must be displayed in your vehicle at time of drop-off. City tags can be obtained at no charge from the City Clerk's office at City Hall during regular business hours. For more information, or a list of acceptable items allowed in the Recycling Center, please visit our website at www.cityofpewaukee.us and search Garbage and Recycling.

Reminder: Real trees must be completely stripped of all decorations including tinsel, ornaments, lights, etc. before they are brought to the Recycling Center. Artificial trees are **not** allowed in the Recycling Center.

THANK YOU FOR RECYCLING THESE:



Aluminum and Steel Cans
empty and rinse



Food and Beverage Cartons
empty and replace cap



Bottles and Jars
empty and rinse



Cereal Boxes, Newspaper, Magazines & Mail, Flattened Cardboard, and Paper Tubes



Kitchen, Laundry, Bath: Bottles and Containers
empty and replace cap
(#1△, #2△, #5△)

City Hall will be closed for the holidays on December 23, 26, and January 2. We will be open until noon on December 30.

Placement of Garbage and Recycle Carts

Garbage and recycling carts should be placed at the end of your driveway, six feet from cars, trees or other obstructions—with cart lids open towards the street. No materials shall be placed on top of the carts. Carts should be put out no earlier than 24 hours before regular collection time and returned as soon as possible, but no later than 24 hours after collection. Recycling should be kept loose in the cart (not in plastic bags). **DO NOT PLACE YOUR CARTS IN THE ROADWAY!**



Don't Plow or Blow Snow in the Streets

This is an important reminder to all City of Pewaukee residential and business owners that shoveling, pushing or blowing snow or ice into the streets or right-of-way, or across public roadways creates an unsafe condition for drivers and is punishable by law. When plowing your private street or driveway, make sure you do not block the intersection's vision corners to ensure a clear view of traffic.

Remember to notify your snow removal contractors to comply with these laws as well. Thank you for doing your part to help keep our streets and sidewalks safe for everyone. *Pewaukee Ordinance Chapter 10.09. Deposit of Snow in the Streets or Right-of-Ways; Wisconsin State Statute 346.94(5).*



Winter Salt Usage

Recent studies have shown that chloride pollution is increasing in our lakes, rivers, and streams. During the spring melt-off or winter rain events, there is a spike in chlorides found in the waters. Too much salt in the water can damage aquatic life and endanger our freshwater resources. To help reduce your salt usage while keeping safe during winter months, visit www.wisaltwise.com.

Just a Friendly Reminder to Check Your Hose Bibs

Make sure to shut off the water source to any outside hose bib that is not frost-proof to prevent pipes bursting in the cold weather. Below are pictures of common exterior hose bib pipes that are frost-proof and non-frost proof.

Frost Proof Exterior



Non-Frost Proof Exterior



Driveway, Grading and Landscape Permits

Did you know that the City requires you to obtain a driveway permit before you install or replace your driveway? Applications are available online at <https://www.cityofpewaukee.us/DocumentCenter/View/3095/Driveway-Permit-rev-Dec-2019>. An inspection by the City is required prior to placing your driveway regardless of the material used.

The City requires a grading and landscaping permit for new lawns (or replacing existing lawns) and landscaping in easements and the right-of-way. Applications are available online at <https://www.cityofpewaukee.us/DocumentCenter/View/2840/Grading-Landscaping-Permit-rev-Dec-2019?bidId=>. Remember that any landscaping installed in the City's right-of-way and easements is at risk and may be removed at any time without compensation. The City is not responsible for damage to unpermitted plantings on City property.

PUBLIC WORKS PROJECTS & UPDATES

New Public Works Highway Garage Update

The new Department of Public Works garage is nearing completion. The anticipated occupancy of the main building is the end of December 2022. The salt shed, fueling island, and new recycling yard will be constructed in the spring of 2023. Staff is looking forward to moving its operations to this new facility. Watch for an open house of the facility this coming spring!



City Road & Bridge Projects

Questions on City of Pewaukee road and bridge projects may be directed to the Engineering Department at (262) 691-0804, or email publicworks@pewaukee.wi.us. Information can also be found on the City's website at <https://www.cityofpewaukee.us/480/Road-Construction>. Questions regarding County roads (which have a letter designation, e.g. CTH F) and state highways (which have a number designation, e.g. STH 164) should be directed to Waukesha County at (262) 548-7736.

Duplainville Road and Trail & Duplainville Road Bridge

The City replaced Duplainville Road this past summer. The road will fully open in mid-December to thru traffic. There will be some remaining punchlist items and touch-up restoration work that will occur under traffic in the spring of 2023. A special thank you to all the residents and businesses along this route. Your cooperation and patience throughout the construction is appreciated.

Northview Road Sidewalk

This project was completed in 2022. There will be some remaining punchlist items and touch-up restoration work that will occur in spring of 2023. A special thank you to all the residents and businesses along this route. Your cooperation and patience throughout the construction project was appreciated.

Lindsay Road Trail

This project was not awarded as part of the Duplainville Road Project. No trail will be installed on Lindsay Road at this time.

CTH F (Redford Blvd) and Lindsay Road Intersection

This project was canceled by the Common Council, and the Highway Safety Improvement Program grant was returned to the state. There will not be any safety improvements at this intersection. If you have concerns regarding this crossing, please contact your local County Supervisor Representative.

Joseph Road

The Joseph Road reconstruction, water main extension, sanitary sewer extension, and storm sewer project was awarded in 2021. Due to supply chain issues, the construction project was delayed to 2022. Due to groundwater contamination found when construction started in 2022, the project is again delayed to 2023. The project is planned to begin in mid-April 2023.

Meadowbrook Farms Phase 2, Paul Road and Roundy's Business Park

The City completed these road projects this past summer. Thank you to all the residents and businesses along these routes. We greatly appreciate your cooperation and patience throughout construction.

Meadowbrook Farms Phase 3

The City is continuing its current phasing to repave the public roads within the Meadowbrook Farms subdivision, with its third phase of work scheduled for 2023. Similar to previous years' phases, this work will include repaving the remaining section of Shooting Star Road, Shooting Star Boulevard, Milkweed Lane, Primrose Court, Goldenrod Court, and Honeysuckle Court. Construction is scheduled to take place in summer of 2023.

Shady Lane and Shady Nook

The City is considering the installation of sanitary sewer and water main along with the necessary laterals and services for homes along Shady Lane and Shady Nook. The installation of these utilities will coincide with the reconstruction of the roads. The City bid this project in 2022 and rejected all bids due to the high cost. The City will rebid this project in the next couple of months. Affected properties will receive a Notice of Public Hearing to discuss impacts and improvements to the area.

Hill n Dale Pond

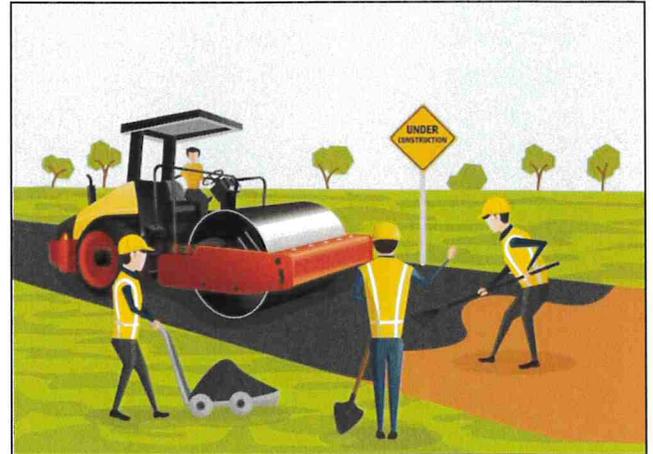
The City will construct a dry pond and other drainage improvements along Hill n Dale Circle and Bonnie Lane. These drainage improvements will help better manage the storm water collected in the neighborhood. Staff bid this project as part of the Shady Lane project, which was rejected. This project is now being bid separately in 2023. Construction is anticipated in 2023.

Busse Road Bridge Replacement

The City is planning to replace the Busse Road bridge. The project originally slated for construction in 2022 was delayed due to the increase of construction costs because there were so many other bridge replacement/repair projects taking place throughout Wisconsin and the Midwest this year. The City will be applying for federal funds for this reconstruction project. The federal government recently made a large allocation of monies for infrastructure projects and we are hopeful that this bridge may qualify for 80% federal funding and 20% local funds. The construction timing will be set by the availability of funds for each specific budget cycle. Watch for project details in future newsletters or visit the City website.

Takoma Hills Subdivision Road Project

The City is considering the pavement rehabilitation and drainage improvement project in the Takoma Hills subdivision. Takoma Hills subdivision includes Lexington Drive, Ruben Drive, Takoma Drive, Mt. Vernon Drive, Richmond Court, and Virginia Drive. The existing pavement will be removed and replaced. The drainage along Ruben Drive and Lexington Drive will also be reviewed. Minor sanitary sewer and water main improvements will also occur as part of the project. Affected properties will receive a Notice of Public Hearing to discuss impacts and improvements to the area prior to the start of construction. The project is planned to begin late spring or early summer 2023.



Highland Subdivision Road Project

The City is considering the pavement reconstruction project in the Highlands subdivision. Highlands subdivision includes Apple Tree Lane and Pear Tree Lane. The existing pavement and base will be removed and replaced. The drainage ditches and culverts will be regraded and reset as needed. Minor sanitary sewer and water main improvements will also occur as part of the project. Affected properties will receive a Notice of Public Hearing to discuss impacts and improvements to the area prior to the start of construction. The project is planned to begin in late spring or early summer 2023.

Future Road Projects

Upcoming road projects are identified in the City's five-year paving program which is available on the City of Pewaukee website at <https://www.cityofpewaukee.us/480/Road-Construction>.

Quiet Zones

The City of Pewaukee is currently completing quiet zone studies for the railroad crossings at Weyer Road and Green Road. The studies require updated traffic counts for these roadways which cannot occur until spring 2023. Once the studies are completed, the City will be applying to the railroad for a quiet zone. The analysis by the railroad is a lengthy process which will likely take a year or longer to complete. For those interested, please be patient as we work through this process with the railroad and state, federal agencies. Quiet zone studies are being considered for the east/west tracks in the future.

Storm Water Utility Projects (Cont'd)

Catch Basin/Inlet Repairs

The City will be repairing catch basin and inlets in various areas of the community. These structures need repair to the top portion (known as adjusting rings) periodically due to the corrosive salt and freeze/thaw cycles. If you see work being done, please exercise caution to keep yourself and our employees safe while they work.

Springdale Estates Drainage Easement

The City began a study of a drainage easement in Springdale Estates between Burningwood Lane to the north, Oakwood Lane/Ridgewood Lane/Glenwood Lane to the south, Apsenwood Lane to the west, and Stonewood Lane to the east. Over time, the drainage easement has silted in and the lack of maintenance has created drainage issues on the adjacent properties. The City is studying what improvements are required to restore the drainage patterns within the City's easement. A public information meeting will take place in the near future to discuss the proposed improvements. Affected parcels will receive a letter from the City with the time and date of the meeting. This is the first of several of these type of projects coming for all subdivisions within the City.

Wagner Park Pond Dredging

Wagner Park was constructed in the early 1990's, and City inspections of these ponds indicate they are due for dredging. Dredging will remove the sediment that has built up over time within the ponds, and will re-establish the bottom of the pond to its original design and sediment removal capacity. In addition, the City will correct erosion issues on the sides of the ponds, re-attach outlet structures, and remove invasive critters from the pond walls which create pond erosion. This work is anticipated in summer 2023.

Yench Road Culvert Replacements

The City will be replacing culverts under Yench Road due to their failing condition. We are working to obtain the necessary permits to replace the culverts, as one set of them is for Coco Creek which requires approval from the Wisconsin Department of Natural Resources and FEMA due to its floodplain. This work is anticipated to occur in Summer 2023.



DEPARTMENT OF PUBLIC WORKS
W240N3065 PEWAUKEE ROAD
PEWAUKEE, WI 53072

PLEASE
PLACE
STAMP
HERE

Mailing Address Line 1
Mailing Address Line 2
Mailing Address Line 3
Mailing Address Line 4
Mailing Address Line 5



Important Information About Keeping Grass Off City Streets

PROPER STORM WATER MANAGEMENT

Many homeowners and landscape companies are guilty of sweeping or blowing yard waste, like grass clipping and leaves, into the street. Storm drains, inlets, ditches, streets and other parts of the storm drainage system are not part of the sanitary or sewer system. Sanitary sewer waters are treated, storm sewer waters are not.

In the City of Pewaukee, it is illegal to dump, sweep, rake or blow grass clippings and yard waste into drains, ditches and streets. When it rains, yard waste left in the streets, on sidewalks or on driveways will wash into nearby storm drains. These drains become clogged and often lead to flooding in streets and nearby properties. Expensive equipment and labor are often required to remove clogs in drainage systems and ditches.

While grass clippings, tree leaves and other yard waste are organic, they still pollute our local waterways. When yard waste washes into storm water drains it eventually breaks down or decomposes and discharges directly to the creeks, rivers, and lakes where you and your children may swim. Yard waste also depletes the oxygen in the water. Aquatic life, such as fish, need oxygen to survive. If oxygen levels become too low, fish and other aquatic life cannot survive.



PREVENT SAFETY HAZARDS

Grass clippings on roadways not only clog storm drains, they can be a real safety hazard for motorcyclists and bicyclists. The tiny blades of grass are comprised of 85% water and are very slippery. Wet or dry, when blown onto the streets or highways, the grass clippings can come between a motorcycle's tires and the pavement and cause a loss of traction. The simple act of blowing your grass clippings back into your yard could help prevent a serious accident, or worse.

HOW TO HANDLE YARD WASTE

Leave it on the lawn, use it to improve your landscape, or compost your yard waste. Grass clippings left on the lawn do not contribute to thatch, but return valuable nutrients to the soil. This may reduce your need for chemical fertilizers. During the fall, a light covering of leaves can be mowed without the catch-bag, leaving the shredded leaves on the lawn. And, as leaves contain 50-80% of the nutrients that a plant extracts from the soil and air during the growing season, you are taking advantage of a natural resource.

Mulching is a simple and effective way to recycle leaves and improve your landscape. It reduces evaporation from the soil surface, inhibits weed growth, moderates soil temperatures, keeps soil from eroding and crusting, and prevents soil compaction. As organic mulch decomposes, valuable nutrients are released for use by plants.

Composting is an easy way to recycle yard waste. Compost is a dark, crumbly and earthy-smelling form of organic matter that has gone through a natural decomposition process. It can be used to enrich the soil by adding nutrients, loosen tight, heavy soils, help sandy soils retain moisture and nutrients, add to potting soils for container grown plants, and mulch around landscape plants and gardens.

HOW CAN I HELP?

In the City of Pewaukee, blowing or sweeping yard waste into the streets, sidewalks, driveways or storm drains is illegal. If caught, a citation may be issued for violating City Ordinance 19.20b. Please ensure your lawn maintenance contractor operates in accordance with City code.

If you see a clogged ditch or storm drain, or illegal dumping, please report it to the City of Pewaukee, Department of Public Works at (262) 691-0804.