City of Monroe
Monroe, Wisconsin

Water Quality Trading Plan

WPDES Permit No. WI-0020362-08-0

Project No. 20-385

Updated April 2022
March 2021

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Monroe, Wisconsin 53566

Prepared for:
City of Monroe
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I. INTRODUCTION AND BACKGROUND

A. Study Purpose and Scope

The purpose of this report is to provide the Wisconsin Department of Natural Resources (WI DNR) with the City of Monroe’s Water Quality Trading (WQT) Plan.

B. Government Organization

The City of Monroe is incorporated and located in Green County in southern Wisconsin. The governing body is a City Council with a mayor and nine elected alderpersons. The elected officials are assisted by appointed officials, including City Administrator, Assistant City Administrator, City Clerk, Director of Public Works, Utilities Supervisor, Chief of Police, City Attorney, and Fire Chief.

The City has a Board of Public Works responsible for making recommendations to the City Council regarding the sanitary sewer collection system and wastewater treatment plant (WWTP). Any recommendations made by the Board of Public Works is presented to the City Council for review and final approval.

C. Economic, Demographic, and Land Use Information

According to the 2020 Census, the City of Monroe has a population of 10,509 persons and approximately 4,810 households. The residents of the City present a mix of people who work in Monroe and those that work outside of the community. In addition to several large businesses, there are several small businesses located in the community. The community has a number of industries that discharge wastewater into the collection system for treatment at the WWTP. The City’s comprehensive plan notes that 77 percent of the planning area consists of urban land use with the remaining land being defined as rural.

D. Watershed Information

The City discharges to Honey Creek (Honey Creek and Richland Creek Watershed, SP01 - Sugar-Pecatonica River Basin) in Green County. Exhibit 1 contains a copy of the HUC-12 Watershed Map, the HUC-8 Watershed Map, and the PRESTO-Lite Results. Looking at the PRESTO data it appears as if the PS:NPS ratio is 8 percent:92 percent.
II. HISTORICAL EFFLUENT QUALITY

Exhibit 2 includes the WWTP effluent flow and effluent phosphorus concentrations from January 2017 to June 2021 as reported to the WI DNR. The monthly average phosphorus data from January 2020 to June 2021 is provided in Figure 1.

Figure 1 – WWTP Effluent Phosphorus Data from January 2020 to June 2021

As can be seen from Figure 1, the WWTP has been running very efficiently for the last year with phosphorus loading dropping below the phosphorus Water Quality Based Effluent Limits (WQBEL) for a portion of the year (see Section V for details on the effluent WQBEL for the WWTP). In addition to the use of BPR, the City feeds Ferric Chloride to control the growth of struvite in the WWTP.

The figure above was created after an atypically high phosphorus week (from July 26, 2020 to July 31, 2020) was removed from the data. Discussions with City personnel indicate this spike is likely a discharge from one of the whey processing plants in the City. The whey plant increased their flow, and the data indicates it took the Biological Phosphorus Removal (BPR) system approximately a week to normalize and start treating at the previously high level. The phosphorus values at the WWTP have been at normal levels for the rest of the year. This serves to support the theory that the week of July 26, 2020 to July 31, 2020 was an unusually high week, and it is not expected these high...
levels will be repeated. In addition, starting in June 2021, the commercial and industrial sector of the City began increasing the organic loading received at the WWTP. The monthly average increased from 9,341 lbs./day BOD in April 2021 to 14,595 lbs./day in September 2021. The daily swings in BOD were even greater. These swings in loading caused significant problems in how effectively the biological treatment system at the WWTP was working and the wastewater did not receive adequate treatment through the aeration tanks. The City worked with an engineer to get the WWTP back into operation. Because the biology of the aeration tanks was disrupted, it took some time to get things running smoothly. The WWTP is back to running at the high treatment level seen prior to June 2021 and the effluent concentrations for phosphorus are back to the expected level.

Because of the unexpected increase in industrial flows at the WWTP, the City has taken several steps to handle the new flows. The most important step the City has taken is to begin the process of facilities planning to expand the WWTP. This expansion will include an expanded aeration system and expanded tertiary treatment for enhanced phosphorus removal prior to discharge. Second, the City has met with the industrial customers to find a solution to the high discharges being received by the WWTP. Finally, the City is exploring the addition of a pretreatment ordinance to protect the unit processes at the WWTP once the future expansion is complete.

The effluent values from when the biological system was down were not included in the calculation for needed credits. This is because the discharges were highly atypical to what is discharged when the WWTP is up and running. This is supported by the fact the effluent is back to within the normal range of expected discharges now that the system is back in operation. In addition, the City has started the facilities planning process and the expansion will be designed with a tertiary treatment system to allow the effluent to meet the phosphorus WQBEL.

The City added a variable rate structure for the discharge of phosphorus to the Category C user fees for sewer. This fee category includes a discharge surcharge when the discharge from the facility goes above 8 mg/L. When the industry discharges over 8 mg/L, they are charged $4.42/lbs. for phosphorus discharged to the WWTP. The purpose of this rate structure was to provide an incentive for the wet industries in the City to control phosphorus from their facility and, if they choose not to control their phosphorus, the surcharge will provide the City funds to remove the phosphorus at the
WWTP. This rate structure will be evaluated further in the Facilities Planning for the aforementioned expansion.

III. WATER QUALITY TRADING

A. Background

Before the implementation of the stringent Water Quality Based Effluent Limits (WQBELs), the City had implemented many Best Management Practices (BMPs) throughout the watershed to help protect the watershed. Unfortunately, these efforts predated phosphorus removal requirements from the WI DNR and these projects are unable to be counted towards the needed trading credits to meet the WQBEL. As a result of these improvements, the creek upstream of the outfall had very low levels of phosphorus, and the City submitted a stream study to the WI DNR to request an increase in the WQBEL discharge level to reflect the high quality of water in the receiving stream. The results of this stream study are a WQBEL of 0.092 mg/L. A copy of the WI DNR calculations for the updated WQBEL are located in Exhibit 3.

B. Backwash Volume

Because of the location of the filter in relation to the WWTP effluent, the effluent flow value includes the volume of water used for filter backwash. In order to accurately represent the effluent flow from the WWTP, the backwash flow volume needs to be removed from the effluent flow to accurately depict the volume of water discharged from the WWTP. The volume of water needed for the filter backwash process equates to approximately 10 percent of the flow volume. The Daily Monitoring Reports (DMRs) submitted to the WI DNR, for the data analyzed as part of this plan, include the backwash volume. To accurately determine the needed Water Quality Trading credits, the backwash volume will need to be removed from the effluent value to get the actual effluent flow. The reporting on the DMRs was modified at the beginning of 2021 to accurately show the effluent flow from the WWTP. For the DMRs preceding 2021, actual flow will be calculated using the following formula: Effluent Flow – Backwash Waste Flow = Actual Effluent Flow.
C. Needed Credits Calculations

January 2020 – December 2020 Needed Credits

Allowable TP = 0.092 mg/L x 8.34 x 1.828 MGD x 365 days = 511.94 lbs./year
Discharged TP = 0.112 mg/L x 8.34 x 1.828 MGD x 365 = 623.24 lbs./year

Needed Credits = 623.24 – 511.94 = 111.3 lbs./year

+30% Buffer = 145 lbs./year

Using this information, the City will need a minimum of 145 lbs./year. The City will keep a careful eye on the phosphorus and will continue to accrue additional credits to ensure the City will always have adequate credits to offset their phosphorus discharge. If the City consistently meets the effluent levels currently being met, the City can then sell any excess phosphorus credits they have available.

D. Water Quality Trading Locations

Exhibit 4 has a map showing all WQT locations.

a. Industrial Park

The City of Monroe has an industrial park and recently modified one of the ponds to allow for phosphorus removal. Exhibit 4 shows the location of the pond upgraded to include for phosphorus removal. Notice of Intent (NOI) for the ponds is located in Exhibit 5. The phosphorus credits were calculated using Windows Source Loading and Management Model (WinSLAMM). Both ponds have been constructed and are in operation. The design life for the ponds is 20 years and the City intends to complete maintenance on these ponds to maximize the removal efficiency of the ponds.

It should be noted, after conversations with the WI DNR, the City can only gain credits for the phosphorus reduction from the stormwater pond for all improvements that took place in the industrial park prior to 2015. City records and past aerial photos were used to determine what development occurred in the industrial park after 2015. Any improvements that occurred after 2015 were assumed to be undeveloped for the purposes of this calculation.
**WEST POND**

Trade Ratio (TR) (West Pond): 2:1

TR = Delivery + Equivalency + Downstream + Uncertainty + Habitat Adjustment:1

TR = 0+0+0+2+0 = 2:1

Credits Generated

Pre-BMP Phosphorus Discharge: 29.7 lbs./year

Post-BMP Phosphorus Discharge: 11.21 lbs./year

Total Credits Generated by Practice: 18.49 lbs./year

With Trade Ratio: **9.25 lbs./year**

i. Total Credits from Industrial Park Pond

**Total Industrial Park Pond WQT Credits = 9.05 lbs./year**

The City of Monroe used WinSLAMM to calculate the available credits for this practice.

A copy of the WinSLAMM results is located in Exhibit 5. Construction of this pond is complete, and the credits will be available upon the processing of Form 304-207. Copies of all forms are located in Exhibit 5.

ii. Inspections and Reporting

The City recognizes the need to inspect and maintain the sites to ensure the proposed BMPs are removing phosphorus in the most efficient method possible. A detailed breakdown of the reporting requirements is in Exhibit 5.

iii. Trade Agreement

Because this property is owned by the City, the trade agreement for this trade will be completed with the WI DNR. The City will monitor the sediment levels and verify the ponds are dredged, as needed, to maximize the removal efficiency of the ponds.

iv. Applicable Standards

Wet Detention Pond (1001): Wisconsin DNR Conservation Practice Standard.
v. Operation and Maintenance

An Operation and Maintenance (O&M) Plan for this trade is included in Exhibit 5. The O&M plan describes how the best management practices (BMPs) will be operated and maintained. The operation and maintenance for these credits will be as dictated by the WI DNR Standard, Wet Detention Pond (1001): Wisconsin DNR Conservation Practice Standard.

b. Dolan Property

i. Location

This is a property recently acquired by the City and will be used as a second industrial park for the community. The location of this property is shown on the map in Exhibit 4. This property is currently cropped with a soybean/corn rotation.

ii. Site Details

Soil samples were pulled this year to allow for an accurate accounting of the fields impact on phosphorus, using the most recent data available. Because this property is owned by the City, it makes an advantageous location for creating trading credits. The current renter uses a “No-Till” process for their planting so the credits available will be limited. The Notice of Intent for this property is located in Exhibit 6.

iii. Existing Discharge

The first step was to run the farm though SnapPlus to determine how much phosphorus is currently being discharged. The printouts from SNAP are located in Exhibit 6.

Summary of the existing runoff is as follows:

2020: 37 lbs./year
2021: 79 lbs./year
2022: 34 lbs./year
2023: 77 lbs./year
2024: 32 lbs./year
2025: 76 lbs./year
iv. Proposed Discharge/ Available Credits

TR: 1.2:1

TR = Delivery + Equivalency + Downstream + Uncertainty + Habitat Adjustment:1

TR = 0+0+0+2+0 = 1.2:1

v. Cropping Alfalfa:

The possibility of cropping alfalfa was analyzed in SnapPlus. The phosphorus runoff after the cropping change is as follows:

- 2020: 37 lbs./year
- 2021: 34 lbs./year
- 2022: 32 lbs./year
- 2023: 29 lbs./year
- 2024: 26 lbs./year
- 2025: 23 lbs./year
- 2026: 21 lbs./year

Assuming a TR of 1.2:1 the available credits from 2020 until 2025 are:

- 2020: (37-37)/1.2 = 0 lbs./year
- 2021: (34–34)/1.2 = 0 lbs./year
- 2022: (34–32)/1.2 = 1.7 lbs./year
- 2023: (77-29)/1.2 = 40 lbs./year
- 2024: (32–26)/1.2 = 5.0 lbs./year
- 2025: (76-23)/1.2 = 44.2 lbs./year

vi. Credits

The anticipated phosphorus discharge from the property will be approximately 43 lbs./year for the long term. In 2025, the available credits will be:

2025 (and beyond): (76 - 22)/1.2 = 44.2 lbs./year starting in 2025

Modifications to the renter’s agreement have been completed so the credits are now in place. Form 3400-207 to register the practice is located in Exhibit 6.
vii. Trade Agreement

Because this property is owned by the City, the trade agreement for this trade will be completed with the WI DNR. The City will monitor the cropped property to ensure it is maintained as agreed in the renter’s agreement.

i. Inspections and Reporting

The City recognizes the need to inspect and maintain the sites to ensure the proposed BMPs are removing phosphorus in the most efficient method possible. A detailed breakdown of the reporting requirements is in Exhibit 6.

ix. Operation and Maintenance

An Operation and Maintenance (O&M) Plan for this trade is included in Exhibit 6. The O&M plan describes how the best management practices (BMPs) will be operated and maintained.

c. WWTP Expansion Site

i. Location

This is a property acquired by the City to allow for the expansion of the WWTP. This property is planted with corn every year. The location of this property is shown on the map in Exhibit 4.

ii. Site Details

Soil samples were pulled this year to allow for an accurate accounting of the fields impact on phosphorus, using the most recent data available. Because this property is owned by the City, it makes an advantageous location for creating trading credits. The Notice of Intent for this property is located in Exhibit 7.
iii. Existing Discharge

The first step was to run the farm through SnapPlus to determine how much phosphorus is currently being discharged. The printouts from SNAP are located in Exhibit 7.

Summary of the existing runoff is as follows:

- 2020: 16 lbs./year
- 2021: 15 lbs./year
- 2022: 15 lbs./year
- 2023: 15 lbs./year
- 2024: 15 lbs./year
- 2025: 16 lbs./year

iv. Trade Ratio

TR: 1.2:1

TR = Delivery + Equivalency + Downstream + Uncertainty + Habitat Adjustment:1

TR = 0+0+0+2+0 = 1.2:1

v. Cover Crop:

The use of a cover crop, such as oats, on the site was analyzed in SnapPlus. The phosphorus runoff after the cropping change is as follows:

- 2020: 8 lbs./year
- 2021: 7 lbs./year
- 2022: 6 lbs./year
- 2023: 4 lbs./year
- 2024: 2 lbs./year
- 2025: 2 lbs./year
Assuming a TR of 1.2:1 the available credits from 2020 until 2025 are:

2020: \((16-8)/1.2 = 6.7 \text{ lbs./year}\)
2021: \((15-7)/1.2 = 6.7 \text{ lbs./year}\)
2022: \((15-6)/1.2 = 7.5 \text{ lbs./year}\)
2023: \((15-4)/1.2 = 9.2 \text{ lbs./year}\)
2024: \((15-2)/1.2 = 10.8 \text{ lbs./year}\)
2025: \((16-2)/1.2 = 11.7 \text{ lbs./year}\)

vi. Credits

It is recommended these acres be changed to a no-till practice and plant a cover crop or similar crop. The farmer’s current agreement with the City involves the planting of Oats. These changes will yield a long-term phosphorus discharge of 3 lbs./year for this site. In 2025, the available credits would be:

\[2025 \text{ (and beyond): } (16 - 2)/1.2 = 11.7 \text{ lbs./year starting in 2025}\]

To be conservative, the credits calculated are based on the City planting a cover crop. Last year’s crop has been harvested and the property will be planted with a cover crop or alfalfa in the coming year. Therefore, the credits are not available and Form3400-207 registering the credits is located in Exhibit 7.

viii. Trade Agreement

Because this property is owned by the City, the trade agreement for this trade will be completed with the WI DNR. The City will monitor the cropped property to ensure it is maintained as agreed in the renter’s agreement.

ii. Inspections and Reporting

The City recognizes the need to inspect and maintain the sites to ensure the proposed BMPs are removing phosphorus in the most efficient method possible. A detailed breakdown of the reporting requirements is in Exhibit 7.
x. Operation and Maintenance

An Operation and Maintenance (O&M) Plan for this trade is included in Exhibit 7. The O&M plan describes how the best management practices (BMPs) will be operated and maintained.

d. Honey Creek Streambank Restoration

iii. Locations

The map in Exhibit 4 shows the WQT location. Photos showing the location of the streambank improvement project are located in Exhibit 8. The flooding experienced, along this stretch of Honey Creek, caused significant erosion.

iv. Project Description

The project will complete streambank restoration for 3,500 feet of Honey Creek. The restoration will involve the placement of Boulder Toe, Bank Slope Reduction, and Tree Preservation. A copy of the streambank restoration plans are included in Exhibit 8. The Notice of Intent for this property is in Exhibit 8.

v. Trade Agreement

During the completion of the topographic survey, it was determined the centerline of the stream was not the property boundary; therefore, an agreement was made with the landowner to allow the City to construct and maintain the BMPs. A copy of the agreement is located in Exhibit 8. The remainder of the project falls onto City property and a trade agreement will be put into place with the DNR for the City owned property.

vi. Timeline for Credits

The topographic survey and soil sampling was completed in the Spring of 2021. Construction on the project will happen in the Spring of 2022. It is anticipated the credits will come available by the beginning of June 2022. Upon completion of the project, Form 3400-207 registering the credits will be submitted to the WI DNR.
vii. Credit Calculation

The entire stretch of the creek to be restored has experienced some level of erosion and needs restoration. Because of the varied degree of erosion throughout the reach and the differing slopes at the points of erosion, the banks were separated into 13 segments of similar erosion and slope.

The streambank erosion for each eroding bank was estimated using the process defined in the NRCS Erosion Calculator, which uses the Direct Volume Method to estimate streambank erosion (NRCS Field Office Technical Guide, 2017). The Direct Volume Method was used to estimate phosphorus loss from each eroding streambank. The sum of phosphorus loss from all eroding banks was used to estimate the amount of potential phosphorus credits, which could be generated by stabilizing eroding streambanks.

To accurately estimate the phosphorus loss using the Direct Volume method, several items need to be determined for each segment.

Exhibit 8 has the results from the soil sampling, photos of each segment, creek cross-sections from the topographic survey, and spreadsheet calculation results are included in Exhibit 8.

a. Annual Lateral Recession Rate

Because the City did not have time to measure the lateral recession rate using field measurements, the annual recession rate was estimated using the qualitative descriptions outlined in the NRCS erosion control calculator. These estimates were based on field observations of the banks. In our project area, the bank erosion varies from moderate to severe. None of the banks in the project area appear to be very severe. Photographs for each segment are included in Exhibit 8.

b. Soil Bulk Density

Soil bulk densities were estimated using published data from Web Soil Survey based on the mapped soil type in which each eroding bank was located. The
soil type was entered into the NRCS calculator using the soil weights provided in the calculator. The soil type for the project area is predominately Huntsville Silt Loam or Arenzville Silt Loam.

c. Eroding Bank Height and Lateral Length

A detailed survey was completed for the project area. This included the survey of cross sections to get elevations across the creek with effort being made to collect exact locations of the top of slope and toe of slope. The survey information was used to calculate the eroded lengths and the eroding bank height for each segment. Because each bank generally exhibits variability in slope height, depending on where the measurements are taken, slope heights were measured for each bank in several locations, each cross-section was approximately the same distance apart. The average bank slope height was used to estimate phosphorus loss.

** Eroding bank height is measured along the bank, not the vertical height of bank. Example: if vertical height of an eroding streambank is 5 feet, and the bank is on a 2:1 slope, the total eroding bank distance is 25 feet -- 1/2 (Base X Height).
d. Soil Samples

Soil samples were collected from the eroding bank for each segment to estimate the total phosphorus concentration of the eroding soil. The sampling was done using the probe provided by the local Green County USDA Land Conservation office.

- Cores were taken to a depth of 6-inches.
- A composite sample was created by placing all soil cores for each section into a 5-gallon bucket and mixing the cores together before filling the sample bag with a single composite sample. The composite samples were well mixed.
- Sampling was conducted taking a core near the top of bank, in the middle of the bank, and immediately above the waterline. Each group of three will be called a subset for the purposes of this analysis. Each segment of stream had multiple subsets of soil collected for analysis.
- All subsets for each segment were placed into the bucket and mixed to create a composite sample.
- The composite samples were placed in the sampling bag. The bucket was emptied and rinsed between each testing segment to guarantee no cross-contamination of soil from one segment to the next would occur.
- Per guidance from the NRCS office, a minimum of 15 cores was taken at each location. This allows for both a representative sample and enough soil for the soil lab to test.

  o Sections 1, 2, 4 and 10: 10 subsets taken (30 total cores)
  o Sections: 3, 5, 12 and 13: 5 subsets taken (15 total cores)
  o Section 6: 7 subsets taken (21 total cores)
  o Sections 7 and 11: 8 subsets taken (24 total cores)
  o Sections 8 and 9: 14 subsets taken (42 total cores)

All sample bags were labeled with the proper stream segment and mailed to the UW Soil and Forage Analysis Laboratory in Marshfield, Wisconsin and were analyzed for total leachable phosphorus. Soil Results are located in Exhibit 8.
viii. Trade Ratio Calculation:

Trade Ratio (TR): 3:1

TR = Delivery + Equivalency + Downstream + Uncertainty + Habitat Adjustment: 1

TR = 0 + 0 + 0 + 2 + 1 = 3:1

ix. Credits Generated

Per NRCS Estimator Credits Total Credits Generated by Practice:

308.73 lbs./year

With Trade Ratio: 102.91 lbs./year

x. Inspections and Reporting

The City recognizes the need to inspect and maintain the sites to ensure the proposed BMPs are removing phosphorus in the most efficient method possible. The agreement with the landowner outlines the allowed access for inspection and the maintenance agreement on the BMPs. A detailed breakdown of the reporting requirements is in Exhibit 8.

xi. Applicable Standards

NRCS 580 – Streambank and Shoreline Protection.

xii. Operation and Maintenance

An Operation and Maintenance (O&M) Plan for this trade is included in Exhibit 8. The O&M plan describes how the best management practices (BMPs) will be operated and maintained.
IV. TOTAL AVAILABLE CREDITS

<table>
<thead>
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<th>Trade</th>
<th>Trade Ratio (TR)</th>
<th>Available Credits</th>
<th>Credits with TR</th>
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<td>Industrial Park Pond (W)</td>
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<td>18.49</td>
<td>9.25</td>
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<tr>
<td>Dolan Property</td>
<td>1.2:1</td>
<td>53</td>
<td>44.2</td>
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<td>WWTP Expansion Site</td>
<td>1.2:1</td>
<td>14</td>
<td>11.7</td>
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<tr>
<td>Honey Creek Park Streambank Restoration</td>
<td>3:1</td>
<td>308.73</td>
<td>102.91</td>
</tr>
<tr>
<td>Total</td>
<td>-</td>
<td>-</td>
<td>168.02</td>
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</table>

Total needed Credits 111.3 lbs./year or 145 lbs./year if assuming 30 percent buffer. Therefore, the number of credits currently available to the City will be adequate to meet their current needs. The City intends to continue pursuing credit opportunities for future growth opportunities. See Exhibit 4 for the map showing the WQT locations.

V. IMPLEMENTATION SCHEDULE

The following is the Implementation Schedule for this Trading Plan:

Construction of Streambank Restoration................................................................. Spring 2022
Register WQT for Two Agricultural Properties....................................................... May 2022
Complete Honey Creek Project ................................................................................ May 2022
Register WQT for Honey Creek Streambank Restoration Project.............................. May 2022
VI. CONCLUSION

Using the credits described in this plan, the City has adequate credits to meet their current credit needs. The trades will allow the City to meet the proposed WQBEL without adding additional treatment at the WWTP. Because the City is anticipating growth in the coming years, in addition to exploring the expansion of treatment at the WWTP, City personnel will continue conversations with BSE and the landowners, adjacent to the Honey Creek Park Streambank restoration project, to gain more credits. Even if the City does not need the credits now, the buffer will allow the City to expand the effluent without the concern of needing more credits than the City has available.

VII. CERTIFICATION

The undersigned hereby certifies that this Water Quality Trading Plan is accurate and correct to the best of his knowledge.

[Signature]

Michael Kennison
Water and Wastewater Supervisor
1224 10th Avenue West
Monroe, WI 53566
Phone: (608) 329-2485
Email: mkennison@cityofmonroe.org
Exhibits
Exhibit 1

HUC-12 Map, HUC-8 Map and
PRESTO-Lite Results
City of Monroe - HUC 8 Watershed

**DISCLAIMER:** The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/

**Notes**

**Legend**
- Surface Water Outfalls
- 8-digit HUCs (Subbasins)
- Municipality
- State Boundaries
- County Boundaries
- Major Roads
  - Interstate Highway
  - State Highway
  - US Highway
- County and Local Roads
  - County HWY
  - Local Road
- Railroads
- Tribal Lands
- Rivers and Streams
- Intermittent Streams
- Lakes and Open water
Reach ID: 200004058
Watershed Name: Hawthorn Creek-Honey Creek
Waterbody Name: Honey Creek
HUC08: Pecatonica River
Watershed Area: 4.74 mi²
Average Annual Precipitation: 36.14in

Stream Flow

<table>
<thead>
<tr>
<th>Discharge (CFS)</th>
<th>Flow Exceedance (%)</th>
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<tbody>
<tr>
<td>0.43</td>
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</table>

Tributary Stream Type

- Cool-Cold Headwater: 42%
- Cold Headwater: 40%
- Macroinvertebrates: 18%

Landcover

- Urban: 68%
- Agriculture: 32%

PRESTO Phosphorus Load Estimate

- Avg. Annual Nonpoint Phosphorous Load (80% Confidence Interval): 9,714 (2,150 - 43,896) lbs
- Number of Facilities (Individual Facility Information below): 1
- Most Likely Point : Nonpoint Phosphorous Ratio: 29% : 71%
- Low Estimate Point : Nonpoint Phosphorous Ratio (Adaptive Management): 8% : 92%
## Adaptive Management Results

Facilities Discharging to the Hawthorn Creek-Honey Creek Watershed:

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Permit #</th>
<th>Outfall #</th>
<th>Waste Type</th>
<th>Receiving Water</th>
<th>Avg. Phosphorus Load (lbs.) (2010 - 2012)</th>
</tr>
</thead>
<tbody>
<tr>
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<td>0020362</td>
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<td>Honey Creek</td>
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Watershed Analysis Limitations

- This analysis relies on pre-defined catchments from the Wisconsin Hydrography Data-Plus and may not delineate from the exact location required. When assessing phosphorus loads for specific facility in support of efforts such as adaptive management, care should be taken to ensure that additional downstream point sources do not exist. For adaptive management information related to specific facilities please reference the PRESTO website [http://dnr.wi.gov/topic/surfacewater/presto.html](http://dnr.wi.gov/topic/surfacewater/presto.html).

- Delineation of watersheds is based on a topographic assessment and therefore do not account for modified drainage networks such as stormwater sewer systems and ditched agriculture.

- If a watershed requires delineation from an exact location the user may use the desktop version of PRESTO that requires ESRI ArcGIS. The PRESTO tool and default datasets can be downloaded at [http://dnr.wi.gov/topic/surfacewater/presto.html](http://dnr.wi.gov/topic/surfacewater/presto.html).

- Data sources for this report originate from the WDNR’s Wisconsin Hydrography Data-Plus value-added dataset and the point and non-point source loading information including in the WDNR’s PRESTO model.

- If you have questions about the report generated from the PRESTO-Lite application please contact: [DNRWATERQUALITYMODELING@wisconsin.gov](mailto:DNRWATERQUALITYMODELING@wisconsin.gov)
Exhibit 2

January 2017 – June 2021

Flow and Phosphorus Results
<table>
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<tr>
<th>Month</th>
<th>Daily Average Flow (MGD)</th>
<th>Actual Discharge Flow</th>
<th>Phosphorus (mg/L)</th>
<th>Phosphorus Loading (ld/day)</th>
<th>Flow Rolling 12 Month Average (mg/l)</th>
<th>Phosphorus Rolling 12 month Average (mg/L)</th>
<th>Phosphorus 6-month Rolling Average (mg/L)</th>
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January 2020-June 2021: 1.9606 1.8277 0.1120
Only 2020: 1.9940 1.7946 0.1173

Phosphorus & Flow Data
Exhibit 3

WI DNR WQBEL Calculations
DATE: December 19, 2019

TO: Michael Kennison – Monroe Wastewater Treatment Facility

FROM: Sarah Luck – SCR/Fitchburg

SUBJECT: Preliminary Phosphorus Water Quality-Based Effluent Limitations for Monroe Wastewater Treatment Facility
WPDES Permit No. WI-0020362

This is in response to your request for an evaluation of the water quality-based effluent limitations (WQBELs) for total phosphorus for the discharge from Monroe Wastewater Treatment Facility in Green County. This municipal wastewater treatment facility discharges to Honey Creek in the Honey and Richland Creek Watershed (SP01) of the Sugar-Pecatonica River Basin.

Receiving Water Information

- Name: Honey Creek
- Classification: Warm water sport fish community, non-public water supply
  Low Flows used in accordance with chs. NR 106 and 217, Wis. Adm. Code:
  \( 7-Q_{10} = 1.8 \text{ cfs} \) (cubic feet per second)
  \( 7-Q_{2} = 2 \text{ cfs} \)

Effluent Information

- Flow Rate – Monroe Wastewater Treatment Facility
  Design Annual average = 3.7 MGD (Million Gallons per Day)

- Flow Rate – Badger State Ethanol
  Annual average = 0.090 MGD, which is the actual average flow (excluding zeros) from 10/1/2018 to 10/31/2019

Phosphorus Water Quality-Based Effluent Limits (WQBEL)
Revisions to administrative rules regulating phosphorus took effect on December 1, 2010. These rule revisions include additions to s. NR 102.06, Wis. Adm. Code, which establish phosphorus standards for surface waters. Subchapter III of NR 217, Wis. Adm. Code, establishes procedures for determining WQBELs for phosphorus, based on the applicable standards in ch. NR 102, Wis. Adm. Code.

Section NR 102.06(3)(a), Wis. Adm. Code, specifically names river segments for which a phosphorus criterion of 0.100 mg/L applies. For other stream segments that are not specified in s. NR 102.06(3)(a), Wis. Adm. Code, s. NR 102.06(3)(b), Wis. Adm. Code, specifies a phosphorus criterion of 0.075 mg/L. The phosphorus criterion of 0.075 mg/L applies to Honey Creek.

A previous evaluation of background phosphorus data, calculated in 2015, resulted in a WQBEL of 0.075 mg/L using a background concentration of 0.553 mg/L. Section NR 217.13(2)(d), Wis. Adm. Code, states that the determination of upstream concentrations shall be evaluated at each permit reissuance. Additional data were considered in estimating the background phosphorus concentration.

The Department received a study titled “Phosphorus Stream Study Testing Report” dated December 2019 that contained the results of an in-stream sampling study conducted on Honey Creek from May 2019 through October 2019. Section NR 217.13(2)(d), Wis. Adm. Code, specifies that the background phosphorus concentration used in the limit calculation formula shall equal the median of at least four
samples collected during the months of May through October, and that all samples collected during a 28-
day period shall be considered as a single sample and the average of these concentrations used to
determine a median. Averaging begins at the date of the first sample in the range of May through October.
Using this methodology and the samples collected upstream of Badger State Ethanol (BSE) and the
Monroe Wastewater Treatment Facility outfall (see table below), the median of the background
phosphorus concentration was calculated to be 0.025 mg/L.

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<th>Sample Date</th>
<th>In-stream phosphorus concentration (mg/L)</th>
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The conservation of mass equation is described in s. NR 217.13 (2)(a), Wis. Adm. Code, for phosphorus
WQBELs and includes variables of water quality criterion (WQC), receiving water flow rate (Qs),
effluent flow rate (Qe), and upstream phosphorus concentrations (Cs). In accordance with NR 217.13(6),
Wis. Adm. Code, when there are multiple dischargers affecting water quality, the resultant combined
allowable load shall be divided among the various discharges using an allocation method based on site-
specific considerations. Thus, the combined effluent flow rates (Qe) of BSE and Monroe Wastewater
Treatment Facility were used. Furthermore, substituting a median value of 0.025 mg/L into the limit
calculation equation below, the calculated limit is 0.092 mg/L for both Monroe Wastewater Treatment
Facility and BSE.

\[
\text{Limitation} = \frac{[(WQC)(Qs+(1-f)Qe)-(Qs-fQe)(Cs)]}{Qe}
\]

Where:
- WQC = 0.075 mg/L for Honey Creek
- Qs = 100% of the 7-Q_2 of 2.0 cfs
- Cs = background concentration of phosphorus in the receiving water pursuant to s. NR
217.13(2)(d), Wis. Adm. Code = 0.025 mg/L
- Qe = effluent flow rate = 3.7 MGD + 0.090 MGD = 3.79 MGD = 5.864 cfs
- f = the fraction of effluent withdrawn from the receiving water = 0

**Phosphorus Limit Expression**
According to s. NR 217.14 (2), Wis. Adm. Code, because the calculated WQBEL is less than or equal to
0.3 mg/L, the effluent limit of 0.092 mg/L may be expressed as a six-month average. If a concentration
limitation expressed as a six-month average is included in the permit, a monthly average concentration
limitation of 0.28 mg/L, equal to three times the WQBEL calculated under s. NR 217.13, Wis. Adm. 
Code shall also be included in the permit. The six-month average should be averaged during the months
of May – October and November – April.
**Mass Limits**
Because the discharge is to a surface water that upstream of a receiving water that listed as phosphorus impaired, a mass limit is also required, pursuant to s. NR 217.14(1)(a), Wis. Adm. Code. *This final mass limit shall be* 0.092 mg/L × 8.34 × 3.7 MGD = 2.8 lbs/day *expressed as a six-month average.*

**Summary**
The following is a summary of effluent limitations:

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<th>Parameter</th>
<th>Monthly Average</th>
<th>Six-Month Average</th>
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<td>Total Phosphorus</td>
<td>0.28 mg/L</td>
<td>0.092 mg/L</td>
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If there are any questions or comments, please contact Sarah Luck at (608) 275-3230 (Sarah.Luck@wisconsin.gov) or Diane Figiel at (608) 264-6274 (Diane.Figiel@wisconsin.gov).

E-cc: Nathan Wells, Wastewater Engineer – SCR/Fitchburg
Diane Figiel, Water Resources Engineer – WY/3
Joseph Solawetz – Monroe Wastewater Treatment Facility
Jennifer Buholzer – Fehr Graham
Exhibit 4

WQT Location Map
EXHIBIT 4
Water Quality Trading Locations

Approximate HUC-12 Boundary

Location Description:
1 - City Owned Industrial Park install wet detention pond.
2 - Dolan Property - City Owned Property
3 - WWTP Expansion Site
4 - Honey Creek Stream Bank Restoration
Exhibit 5

Industrial Park WQT Information
Notice of Intent to Conduct Water Quality Trading
Form 3400-206  (1/14)

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

Notice: Pursuant to s. 283.84, Wis. Stats., and ch. NR 217 Wis. Adm. Code, this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

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<td>Jesse Duff</td>
<td>1107 16th Ave</td>
<td>Monroe</td>
<td>WI</td>
<td>53566</td>
</tr>
</tbody>
</table>

### Project Name

Monroe Business & Industrial Park Detention Improvements

### Receiving Water Name

Honey Creek/ Richland Creek

### Parameter(s) being traded

- **Phosphorus**

### HUC 12(s)

- 070900031004 / 070900031101

### Is the permittee in a point or nonpoint source dominated watershed? (See PRESTO results - [http://dnr.wi.gov/topic/surfacewater/presto.html](http://dnr.wi.gov/topic/surfacewater/presto.html))

- Point source dominated
- Nonpoint source dominated

### Credit Generator Information

- Permitted Discharge (non-MS4/CAFO)
- Urban nonpoint source discharge
- Permitted MS4
- Agricultural nonpoint source discharge
- Permitted CAFO
- Other - Specify:

### Are any of the credit generators in a different HUC 12 than the applicant?

- Yes; HUC 12: 070900031101
- No
- Unsure

### Are any of the credit generators downstream of the applicant?

- Yes
- No
- Unsure

### Will a broker/exchange be used to facilitate trade?

- Yes; Name:
- No
- Unsure

### Point to Point Trades (Traditional Municipal / Industrial Discharge, MS4, CAFO)

<table>
<thead>
<tr>
<th>Discharge Type</th>
<th>Permit Number</th>
<th>Name</th>
<th>Contact Address</th>
<th>Is the point source credit generator currently in compliance with their permit requirements?</th>
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</thead>
<tbody>
<tr>
<td>Traditional</td>
<td></td>
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<td>Yes</td>
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<tr>
<td>MS4</td>
<td>S050075</td>
<td>City of Monroe</td>
<td>1110 18th Ave</td>
<td>Yes</td>
</tr>
<tr>
<td>CAFO</td>
<td></td>
<td></td>
<td>Monroe, WI 53566</td>
<td>No</td>
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<tr>
<td>Traditional</td>
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<td>Yes</td>
</tr>
<tr>
<td>MS4</td>
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<tr>
<td>CAFO</td>
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</tr>
<tr>
<td>CAFO</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>
Point to Nonpoint Trades (Non-permitted Agricultural, Non-Permitted Urban, etc.)

List the practices that will be used to generate credits:

Installation of detention ponds designed for the removal of Phosphorus. See attached construction documents and Win SLAMM calculations.

Method for quantifying credits generated: □ Monitoring
✓ Modeling, Names: WinSLAMM
□ Other: 

Projected date credits will be available:

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.

Signature of Preparer

Date Signed 5/2/2019

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

Date Signed 5/2/2019
### Runoff and Particulate Solids

<table>
<thead>
<tr>
<th>Pollutant</th>
<th>Concentration - No Controls</th>
<th>Concentration - With Controls</th>
<th>Conc. Units</th>
<th>Pollutant Yield - No Controls</th>
<th>Pollutant Yield - With Controls</th>
<th>Pol. Yield Units</th>
<th>Percent Reduction</th>
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<tbody>
<tr>
<td>Particulate Solids</td>
<td>123.7</td>
<td>28.48</td>
<td>mg/L</td>
<td>12754</td>
<td>2945</td>
<td>lbs</td>
<td>76.91%</td>
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<tr>
<td>Filterable Solids</td>
<td>60.82</td>
<td>60.82</td>
<td>mg/L</td>
<td>6272</td>
<td>6288</td>
<td>lbs</td>
<td>-0.26%</td>
</tr>
<tr>
<td>Total Solids</td>
<td>184.5</td>
<td>89.3</td>
<td>mg/L</td>
<td>19026</td>
<td>9233</td>
<td>lbs</td>
<td>51.47%</td>
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<tr>
<td>Particulate Phosphorus</td>
<td>0.2348</td>
<td>0.0521</td>
<td>mg/L</td>
<td>24.21</td>
<td>5.708</td>
<td>lbs</td>
<td>76.42%</td>
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<td>Filterable Phosphorus</td>
<td>0.05321</td>
<td>0.05319</td>
<td>mg/L</td>
<td>5.487</td>
<td>5.5</td>
<td>lbs</td>
<td>-0.23%</td>
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<td>Total Phosphorus</td>
<td>0.288</td>
<td>0.1084</td>
<td>mg/L</td>
<td>29.7</td>
<td>11.21</td>
<td>lbs</td>
<td>62.26%</td>
</tr>
</tbody>
</table>
Water Quality Trading Management
Practice Registration
Form 3400-207  (R 1/14)

Notice: Pursuant to s. 283.84, Wis. Stats., this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin’s Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

<table>
<thead>
<tr>
<th>Applicant Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permittee Name</td>
</tr>
<tr>
<td>City of Monroe</td>
</tr>
<tr>
<td>Facility Address</td>
</tr>
<tr>
<td>1110 18th Ave</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>Project Contact Name</td>
</tr>
<tr>
<td>Jennifer Buholzer</td>
</tr>
<tr>
<td>Project Name</td>
</tr>
<tr>
<td>Monroe Business &amp; Industrial Park Detention Improvements - West Pond</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Broker/Exchange Information (if applicable)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Was a broker/exchange be used to facilitate trade?</td>
</tr>
<tr>
<td>☐ Yes □ No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Broker/Exchange Organization Name</th>
<th>Contact Name</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Address</th>
<th>Phone Number</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Trade Registration Information (Use a separate form for each trade agreement)</th>
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</thead>
<tbody>
<tr>
<td>Type</td>
</tr>
<tr>
<td>☐ Urban NPS</td>
</tr>
<tr>
<td>☐ Agricultural NPS</td>
</tr>
<tr>
<td>☐ Other</td>
</tr>
<tr>
<td>Trade Agreement Number</td>
</tr>
<tr>
<td>Practices Used to Generate Credits</td>
</tr>
<tr>
<td>Installation of Wet Detention Pond</td>
</tr>
<tr>
<td>Anticipated Load Reduction</td>
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<tr>
<td>9.05</td>
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<td>Trade Ratio</td>
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<tr>
<td>2:1</td>
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<tr>
<td>Method of Quantification</td>
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<td>SLAMM</td>
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<table>
<thead>
<tr>
<th>County Green</th>
<th>Closest Receiving Water Name</th>
<th>Land Parcel ID(s)</th>
<th>Parameter(s) being traded</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Honey Creek</td>
<td>5001.1525</td>
<td>phosphorus</td>
</tr>
</tbody>
</table>

The preparer certifies all of the following:

- I have completed this document to the best of my knowledge and have not excluded pertinent information.
- I certify that the information in this document is true to the best of my knowledge.

Signature of Preparer  
[Signature]

Date Signed  
2/23/2020

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative  
[Signature]

Date Signed  
7-22-20

Leave Blank - For Department Use Only

Date Received

Trade Docket Number

Entered in Tracking System ☐ Yes

Date Entered

Name of Department Reviewer
Operation & Maintenance– Industrial Park Pond

For the purposes of this Operation and Maintenance Plan, severe floods are defined as any hydrologic event resulting from a 24-hour cumulative precipitation in excess of 3.8 inches of rainfall (i.e., the 5-year, 24-hour precipitation event based on the annual maximum time series as defined by NOAA Atlas 14, Volume 8, Version 2).

Refer to Inspection and Reporting requirements to be followed as part of the proper operation and maintenance of the BMPs installed as part of this water quality trading plan.

Wet Detention Pond (1001): Wisconsin DNR Conservation Practice Standard:

1. Check the slopes of the pond banks for erosion. This will include sloughing, erosion, or damage to vegetative cover. Damaged areas shall be graded, shaped, and revegetated.

2. Inspect the outfall for excess erosion and fix any areas of washout.

3. Removed excess vegetative debris

4. Repair any vandalism or vehicle damage.

Additional Conditions:

1. All repairs should be approved by WI DNR before implementing the repair to determine if a permit is needed to complete the repair.

2. Clip and/or mechanically harvest vegetated areas, as needed, to control undesirable species and woody vegetation.

3. The BMPs will be inspected following heavy rain events at a minimum. Inspection will be used to determine appropriate actions to maintain the installed BMPs for continuous TP credit generation.

4. The BMPs will be inspected annually by a licensed Professional Engineer to ensure that the BMPs are functioning as intended in order to meet the requirements of the WQT plan.
Inspection Reporting– Industrial Park Pond

a. Tracking Procedures
The City will track credits monthly and report credit usage to the DNR in the Discharge Monitoring Reports (DMRs). The annual report will summarize the 12 months of credit usage and credit generation. The City will report to DNR any concern that they have that may result in a need to modify the trade agreement and/or this trade plan. For example, a need to generate additional credits based on discharge.

b. Inspection
Inspection of the BMPs shall occur to ensure they are installed per the design and meet all applicable codes and permits. Inspections of the established BMPs shall occur each month at a minimum or following heavy rain events. A licensed professional engineer will perform an annual certification to ensure the practice is performing as designed and the City remains in compliance.

The inspection reports will include:

i. Name and contact information of the inspector
ii. Inspection Date
iii. Relevant standards set forth in the Design Plan or Operation and Maintenance Plan
iv. Issues identified
v. When and how any issues identified were addressed
vi. When and how any issues identified will be addressed in the future Inspection reports generated during each routine or after rain event inspection will be included with the Annual Water Quality Trading Report submitted by the City to DNR.

Annual inspections by a professional engineer will typically occur in the late spring. This time of year is ideal for evaluating the condition of BMPs as it follows the freeze/thaw which poses the greatest potential for changes to the BMPs. Minimal vegetation cover will allow for adequate visual inspection.

c. Annual Water Quality Trading Report Submittal
Each year the following shall be submitted to the DNR:
i. The number of pollutant reduction credits (lbs/month) used each month of the previous year to demonstrate compliance.

ii. A summary of the annual inspection of the practice that generated any of the pollutant reduction credits used during the previous year, this inspection shall be completed by a licensed Professional Engineer.

iii. All monthly inspection reports.

iv. Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports.

v. A list of all noncompliance and the correction measures and timing to address the issues throughout the year; and

vi. An updated WQT plan if management practices have or will change.

d. Monthly Certification of Management Practices

Each month, the city will certify that the BMPs are maintained and operating in a manner consistent with this Water Quality Trading Plan or provide a statement noting noncompliance with this Plan. The monthly Discharge Monitoring Report (DMR) will include the following statement as a certification of compliance:

“I certify, to the best of my knowledge, the management practices identified in the approved water quality trading plan are installed, established and properly maintained.”
e. Notification of Failure to Generate Credits

The City will notify DNR by telephone call to DNR’s regional wastewater compliance engineer within 24 hours or next business day of becoming aware that phosphorus credits used or intended for use by City are not being generated as outlined in this Water Quality Trading Plan.

The City will submit a written notification within five days after the City recognizes that the phosphorus credits are not being generated as outlined in the Trading Plan. The DNR may waive the requirement for submittal for a written notice within five days and instruct the City to submit the written notice with the next regularly scheduled monitoring report required by City’s WPDES Permit.

The written notice will contain a description of how and why the TP credits are not being generated as outlined, the steps taken or planned to prevent reoccurrence of the identified problem, and the length of time it will take to address the issue.

f. Conditions under which Management Practices May Be Inspected

Any DNR authorized officer, employee, or representative has the right to access and inspect the credit generating practice so long as the City’s trade agreement with the DNR and this Water Quality Trading Plan remain in effect.
MONROE BUSINESS AND INDUSTRIAL PARK DETENTION IMPROVEMENTS

FOR

CITY OF MONROE
MONROE, WISCONSIN

PROPOSED SITE PLANS
GREEN COUNTY
MARCH 2019

UTILITY TYPE | COMMON NAME
--- | ---
WATER & SEWER | CITY OF MONROE
ELECTRIC | ALWISH ENERGY
TELEPHONE | TDS TELECOM
GAS | WE ENERGIES
CABLE | CHARTER COMMUNICATIONS

LOCATION MAP

PROJET LOCATION

CONTOURS AND ELEVATIONS DEPICTED HEREON ARE BASED ON THE NAVD88 DATUM. HORIZONTAL Datum IS BASED ON NORTH AMERICAN 1983.

FEHR GRAHAM
ENGINEERING & ENVIRONMENTAL

ILLINOIS  IOWA  WISCONSIN

Diggers Hotline
Call before you dig.
811 or 211}

© 2018 FEHR GRAHAM
GENERAL NOTES

1. PROJECT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE VARIOUS CODES, CITY OF MONROE, WISCONSIN.
2. ALL CONSTRUCTION WORK PERFORMED ON THE PROJECT SHALL BE PERFORMED IN CONFORMITY WITH ALL LOCAL AND STATE LAWS, RULES, AND REGULATIONS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION OF ALL MATERIALS AND EQUIPMENT USED ON THE PROJECT.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY AND HEALTH OF ALL PERSONS ON THE PROJECT SITE.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER STORAGE AND DISPOSAL OF ALL WASTE MATERIALS GENERATED ON THE PROJECT SITE.

ENGINEERING & ENVIRONMENTAL

SEEDING OF CONTROLLED AREAS

1. THE TOTAL TOP 500 FEET OF SOIL IN ANY AREA MUST BE A CONCRETE SOIL CAPABLE OF SUPPORTING SEEDING.
2. THE SEEDING MUST BE APPLIED ALONGSIDE EACH ROW OF PLANTS.
3. THE SEEDING MUST BE APPLIED IN SUCH A MANNER AS TO ENSURE EVEN DISTRIBUTION.
4. THE SEEDING MUST BE APPLIED IN SUCH A MANNER AS TO ENSURE EVEN DISTRIBUTION.
5. THE SEEDING MUST BE APPLIED IN SUCH A MANNER AS TO ENSURE EVEN DISTRIBUTION.

EXECUTIVE CONTROL NOTES

1. ALL SEEDING MUST BE APPLIED IN SUCH A MANNER AS TO ENSURE EVEN DISTRIBUTION.
2. ALL SEEDING MUST BE APPLIED IN SUCH A MANNER AS TO ENSURE EVEN DISTRIBUTION.
3. ALL SEEDING MUST BE APPLIED IN SUCH A MANNER AS TO ENSURE EVEN DISTRIBUTION.
4. ALL SEEDING MUST BE APPLIED IN SUCH A MANNER AS TO ENSURE EVEN DISTRIBUTION.
5. ALL SEEDING MUST BE APPLIED IN SUCH A MANNER AS TO ENSURE EVEN DISTRIBUTION.

FEHR GRAHAM

ENGINEERING & ENVIRONMENTAL

ILINOIS

CITY OF MONROE

WISCONSIN

CITY OF MONROE

WISCONSIN

IOWA

WISCONSIN

1000 MAIN STREET, MONROE, WISCONSIN 53566

(608) 326-5000

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DISCLAIMER: The information shown on these maps has been obtained from various sources, and are of varying age, reliability and resolution. These maps are not intended to be used for navigation, nor are these maps an authoritative source of information about legal land ownership or public access. No warranty, expressed or implied, is made regarding accuracy, applicability for a particular use, completeness, or legality of the information depicted on this map. For more information, see the DNR Legal Notices web page: http://dnr.wi.gov/legal/
Exhibit 6

Dolan Property Information
Notice of Intent to Conduct Water Quality Trading

Form 3400-206 (1/14)

Applicant Information

<table>
<thead>
<tr>
<th>Permittee Name</th>
<th>Permit Number</th>
<th>Facility Site Number</th>
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<tbody>
<tr>
<td>City of Monroe</td>
<td>WI-0020362-08-0</td>
<td>31428</td>
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<table>
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<th>State</th>
<th>ZIP Code</th>
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<tr>
<td>1110 18th Ave</td>
<td>Monroe</td>
<td>WI</td>
<td>53566</td>
</tr>
</tbody>
</table>

Project Name

Monroe Industrial Park - Dolan Property

Receiving Water Name

Honey Creek

Parameter(s) being traded

Phosphorus

HUC 12(s)

070900031004

Is the permittee in a point or nonpoint source dominated watershed?

- Point source dominated
- Nonpoint source dominated

(See PRESTO results - http://dnr.wi.gov/topic/surfacewater/presto.html)

Credit Generator Information

Credit generator type (select all that apply):

- Permitted Discharge (non-MS4/CAFO)
- Permitted MS4
- Permitted CAFO
- Urban nonpoint source discharge
- Agricultural nonpoint source discharge
- Other - Specify:

Are any of the credit generators in a different HUC 12 than the applicant?

- Yes; HUC 12:
- No
- Unsure

Are any of the credit generators downstream of the applicant?

- Yes
- No
- Unsure

Will a broker/exchange be used to facilitate trade?

- Yes; Name:
- No
- Unsure

Point to Point Trades (Traditional Municipal / Industrial Discharge, MS4, CAFO)

<table>
<thead>
<tr>
<th>Discharge Type</th>
<th>Permit Number</th>
<th>Name</th>
<th>Contact Address</th>
<th>Is the point source credit generator currently in compliance with their permit requirements?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>S050075</td>
<td>City of Monroe</td>
<td>1110 18th Ave Monroe, WI 53566</td>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td>MS4</td>
<td></td>
<td></td>
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<tr>
<td>CAFO</td>
<td></td>
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<tr>
<td>CAFO</td>
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</tr>
</tbody>
</table>

**State of Wisconsin**
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7021
dnr.wi.gov
Point to Nonpoint Trades (Non-permitted Agricultural, Non-Permitted Urban, etc.)

List the practices that will be used to generate credits:

Removal of the 90 Ac. field known as the Dolan property from Agricultural use. Currently the land is being used to crop corn. Until the land is developed as an industrial park the land will have a cover crop in place. Once the land is made into an industrial park all necessary storm water BMPs will put in place to limit phosphorus runoff. Please see attached map for project location.

Method for quantifying credits generated:

- Monitoring
- Modeling, Names: SNAP + (to be completed)
- Other

Projected date credits will be available: 10/01/2020

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.

Signature of Preparer: Jennifer SA Bushardz | Date Signed: 4/30/2020

Authorized Representative Signature:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative: [Signature] | Date Signed: 4/29/20
**Operation & Maintenance– Dolan Property**

For the purposes of this Operation and Maintenance Plan, severe floods are defined as any hydrologic event resulting from a 24-hour cumulative precipitation in excess of 3.8 inches of rainfall (i.e., the 5-year, 24-hour precipitation event based on the annual maximum time series as defined by NOAA Atlas 14, Volume 8, Version 2).

Refer to Inspection and Reporting requirements to be followed as part of the proper operation and maintenance of the BMPs installed as part of this water quality trading plan.

**Conditions for Alfalfa:**

1. Check planted crop to ensure alfalfa has been planted
2. Verify crop management matches the standards set forth by the Nutrient Management Standard 590.
3. After rain events check levels of erosion on the property.
4. If a crop, other than alfalfa, is planted SNAP + must be run and DNR notified of change. An update to the Water Quality Trading plan may be required at this time.

**Additional Conditions:**

1. The property will be inspected following heavy rain events at a minimum. Inspection will be used to determine appropriate actions to maintain the installed BMPs for continuous TP credit generation. This may require replanting if a crop washout has occurred.
2. The BMPs will be inspected annually by a licensed Professional Engineer to ensure that the BMPs are functioning as intended in order to meet the requirements of the WQT plan.
**Inspection Reporting – Dolan Property**

a. Tracking Procedures
   The City will track credits monthly and report credit usage to the DNR in the Discharge Monitoring Reports (DMRs). The annual report will summarize the 12 months of credit usage and credit generation. The City will report to DNR any concern that they have that may result in a need to modify the trade agreement and/or this trade plan. For example, a need to generate additional credits based on discharge.

b. Inspection
   Inspection of the BMPs shall occur to ensure they are installed per the design and meet all applicable codes and permits. Inspections of the established BMPs shall occur each month at a minimum or following heavy rain events. A licensed professional engineer will perform an annual certification to ensure the practice is performing as designed and the City remains in compliance.

   The inspection reports will include:
   i. Name and contact information of the inspector
   ii. Inspection Date
   iii. Relevant standards set forth in the Design Plan or Operation and Maintenance Plan
   iv. Issues identified
   v. When and how any issues identified were addressed
   vi. When and how any issues identified will be addressed in the future Inspection reports generated during each routine or after rain event inspection will be included with the Annual Water Quality Trading Report submitted by the City to DNR.

   Annual inspections by a professional engineer will typically occur in the late spring. This time of year is ideal for evaluating the condition of BMPs as it follows the freeze/thaw which poses the greatest potential for changes to the BMPs. Minimal vegetation cover will allow for adequate visual inspection.
c. Annual Water Quality Trading Report Submittal

Each year the following shall be submitted to the DNR:

i. The number of pollutant reduction credits (lbs/month) used each month of the previous year to demonstrate compliance.

ii. A summary of the annual inspection of the practice that generated any of the pollutant reduction credits used during the previous year, this inspection shall be completed by a licensed Professional Engineer.

iii. All monthly inspection reports.

iv. Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports.

v. A list of all noncompliance and the correction measures and timing to address the issues throughout the year; and

vi. An updated WQT plan if management practices have or will change.

d. Monthly Certification of Management Practices

Each month, the city will certify that the BMPs are maintained and operating in a manner consistent with this Water Quality Trading Plan or provide a statement noting noncompliance with this Plan. The monthly Discharge Monitoring Report (DMR) will include the following statement as a certification of compliance:

“I certify, to the best of my knowledge, the management practices identified in the approved water quality trading plan are installed, established and properly maintained.”

e. Notification of Failure to Generate Credits

The City will notify DNR by telephone call to DNR’s regional wastewater compliance engineer within 24 hours or next business day of becoming aware that phosphorus credits used or intended for use by City are not being generated as outlined in this Water Quality Trading Plan.
The City will submit a written notification within five days after the City recognizes that the phosphorus credits are not being generated as outlined in the Trading Plan. The DNR may waive the requirement for submittal for a written notice within five days and instruct the City to submit the written notice with the next regularly scheduled monitoring report required by City’s WPDES Permit.

The written notice will contain a description of how and why the TP credits are not being generated as outlined, the steps taken or planned to prevent reoccurrence of the identified problem, and the length of time it will take to address the issue.

f. Conditions under which Management Practices May Be Inspected
   Any DNR authorized officer, employee, or representative has the right to access and inspect the credit generating practice so long as the City’s trade agreement with the DNR and this Water Quality Trading Plan remain in effect.
Reach ID: 200004058
Watershed Name: Hawthorn Creek-Honey Creek
Waterbody Name: Honey Creek
HUC08: Pecatonica River
Watershed Area: 4.74 mi²
Average Annual Precipitation: 36.14in

**Stream Flow**

<table>
<thead>
<tr>
<th>Discharge (CFS)</th>
<th>8.39</th>
<th>4.98</th>
<th>2.27</th>
<th>1.21</th>
<th>0.71</th>
<th>0.53</th>
<th>0.43</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flow Exceedance (%)</td>
<td>5 10 25 50 75 90 95</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Tributary Stream Type**

<table>
<thead>
<tr>
<th>Type</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cool-Cold Headwater</td>
<td>5167 ft</td>
</tr>
<tr>
<td>Cold Headwater</td>
<td>4821 ft</td>
</tr>
<tr>
<td>Macroinvertebrates</td>
<td>2182 ft</td>
</tr>
<tr>
<td>Coldwater</td>
<td>0 ft</td>
</tr>
<tr>
<td>Cool-Cold Mainstem</td>
<td>0 ft</td>
</tr>
<tr>
<td>Cold Mainstem</td>
<td>0 ft</td>
</tr>
<tr>
<td>Large River</td>
<td>0 ft</td>
</tr>
<tr>
<td>Warm Headwater</td>
<td>0 ft</td>
</tr>
<tr>
<td>Warm Mainstem</td>
<td>0 ft</td>
</tr>
</tbody>
</table>

**Landcover**

<table>
<thead>
<tr>
<th>Type</th>
<th>Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban</td>
<td>3.21 mi²</td>
</tr>
<tr>
<td>Agriculture</td>
<td>1.48 mi²</td>
</tr>
<tr>
<td>Forest</td>
<td>0.02 mi²</td>
</tr>
<tr>
<td>Barren</td>
<td>0.01 mi²</td>
</tr>
<tr>
<td>Grassland</td>
<td>0.01 mi²</td>
</tr>
<tr>
<td>Wetland</td>
<td>0.01 mi²</td>
</tr>
</tbody>
</table>

**PRESTO Phosphorus Load Estimate**

| Avg. Annual Nonpoint Phosphorous Load (80% Confidence Interval) | 9,714 (2,150 - 43,896) lbs |
| Number of Facilities (Individual Facility Information below) | 1 |
| Avg. Annual Point-source Phosphorous Load (2010 - 2012 total of all facilities) | 3,997lbs |
| Most Likely Point : Nonpoint Phosphorous Ratio | 29% : 71% |
| Low Estimate Point : Nonpoint Phosphorous Ratio (Adaptive Management) | 8% : 92% |
### Adaptive Management Results

Facilities Discharging to the Hawthorn Creek-Honey Creek Watershed:

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Permit #</th>
<th>Outfall #</th>
<th>Waste Type</th>
<th>Receiving Water</th>
<th>Avg. Phosphorus Load (lbs.) (2010 - 2012)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MONROE WASTEWATER TREATMENT FACILITY</td>
<td>0020362</td>
<td>001</td>
<td>Municipal</td>
<td>Honey Creek</td>
<td>3997</td>
</tr>
</tbody>
</table>
**Watershed Analysis Limitations**

- This analysis relies on pre-defined catchments from the Wisconsin Hydrography Data-Plus and may not delineate from the exact location required. When assessing phosphorus loads for specific facility in support of efforts such as adaptive management, care should be taken to ensure that additional downstream point sources do not exist. For adaptive management information related to specific facilities please reference the PRESTO website [http://dnr.wi.gov/topic/surfacewater/presto.html](http://dnr.wi.gov/topic/surfacewater/presto.html).

- Delineation of watersheds is based on a topographic assessment and therefore do not account for modified drainage networks such as stormwater sewer systems and ditched agriculture.

- If a watershed requires delineation from an exact location the user may use the desktop version of PRESTO that requires ESRI ArcGIS. The PRESTO tool and default datasets can be downloaded at [http://dnr.wi.gov/topic/surfacewater/presto.html](http://dnr.wi.gov/topic/surfacewater/presto.html).

- Data sources for this report originate from the WDNR’s Wisconsin Hydrography Data-Plus value-added dataset and the point and non-point source loading information including in the WDNR’s PRESTO model.

- If you have questions about the report generated from the PRESTO-Lite application please contact: [DNRWATERQUALITYMODELING@wisconsin.gov](mailto:DNRWATERQUALITYMODELING@wisconsin.gov)
The P Trade Report estimates the annual pounds of phosphorus (P) in surface runoff from cropland entering surface waters. These P loss calculations are based on a field's soil test P concentration, crops, tillage, nutrient management practices and estimates of average runoff and sheet and rill erosion for the predominant soil type. Losses from concentrated flow channel or gully erosion with a field are not included in these calculations. Field runoff losses are calculated for each year as $PTP$ (lb P/field/yr). Fields are only included if there are at least 2 years of crops before the selected start year. Before using this report as part of a Water Quality Trade activity, phosphorus losses ($PTP$) must be converted into 'P credits' according to DNR guidance.

For more information go to [http://dnr.wi.gov/](http://dnr.wi.gov/) and type keyword: Water Quality Trading

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<table>
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<tr>
<th>Field Name</th>
<th>Soil Series</th>
<th>Soil Symbol</th>
<th>Acres</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
<th>2026</th>
</tr>
</thead>
<tbody>
<tr>
<td>DOLAN</td>
<td>ASHDALE</td>
<td>AsB2</td>
<td>92</td>
<td>86</td>
<td>37</td>
<td>34</td>
<td>32</td>
<td>29</td>
<td>26</td>
<td>23</td>
<td>21</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>92</td>
<td>86</td>
<td>37</td>
<td>34</td>
<td>32</td>
<td>29</td>
<td>26</td>
<td>23</td>
<td>21</td>
</tr>
</tbody>
</table>

Questions? Please contact DNRphosphorus@wisconsin.gov
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Applicant Information
Permittee Name
City of Monroe
Permit Number
WI-0020362-08-0
Facility Site Number
31428

Facility Address
1110 18th Ave.
City
Monroe
State
WI
ZIP Code
53566

Project Contact Name (if applicable)
Jennifer Buholzer
Address
1107 16th Ave.
City
Monroe
State
WI
ZIP Code
53566

Project Name
Monroe Industrial Park - Dolan Property Water Quality Trading Credits.

Broker/Exchange Information (if applicable)
Was a broker/exchange be used to facilitate trade? Yes

Broker/Exchange Organization Name

Contact Name

Address

Phone Number

Email

Trade Registration Information (Use a separate form for each trade agreement)

<table>
<thead>
<tr>
<th>Type</th>
<th>Trade Agreement Number</th>
<th>Practices Used to Generate Credits</th>
<th>Anticipated Load Reduction</th>
<th>Trade Ratio</th>
<th>Method of Quantification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban NPS</td>
<td>2</td>
<td>Modification of cropped land for corn/soy beans to allow for only the planting of alfalfa or similar cover crops</td>
<td>44.2</td>
<td>1.2:1</td>
<td>SNAP+</td>
</tr>
<tr>
<td>Agricultural NPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The preparer certifies all of the following:

I have completed this document to the best of my knowledge and have not excluded pertinent information.

I certify that the information in this document is true to the best of my knowledge.

Signature of Preparer

Date Signed

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

Date Signed

Leave Blank – For Department Use Only

Date Received

Trade Docket Number

Entered in Tracking System Yes

Date Entered

Name of Department Reviewer
Exhibit 7

WWTP Expansion Site Information
Notice: Pursuant to s. 283.84, Wis. Stats., and ch. NR 217 Wis. Adm. Code, this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin’s Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

<table>
<thead>
<tr>
<th>Applicant Information</th>
<th>Permit Number</th>
<th>Facility Site Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permittee Name</td>
<td>WI-0020362-08-0</td>
<td>31428</td>
</tr>
<tr>
<td>City of Monroe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility Address</td>
<td>1110 18th Ave</td>
<td>City</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Contact Name</td>
<td>Jennifer Buholzer</td>
<td>Address</td>
</tr>
<tr>
<td>Project Name</td>
<td>Monroe WWTP Expansion Site - Buffer Strips, No Till, Nutrient Management</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Receiving Water Name</th>
<th>Parameter(s) being traded</th>
<th>HUC 12(s)</th>
<th>070900031004</th>
</tr>
</thead>
</table>

Is the permittee in a point or nonpoint source dominated watershed? 
- [ ] Point source dominated
- [x] Nonpoint source dominated

Credit Generator Information

Credit generator type (select all that apply):
- [ ] Permitted Discharge (non-MS4/CAFO)
- [x] Permitted MS4
- [ ] Permitted CAFO
- [ ] Urban nonpoint source discharge
- [ ] Agricultural nonpoint source discharge
- [ ] Other - Specify:

Are any of the credit generators in a different HUC 12 than the applicant? 
- [x] Yes; HUC 12:
- [ ] No
- [ ] Unsure

Are any of the credit generators downstream of the applicant? 
- [ ] Yes
- [ ] No
- [ ] Unsure

Will a broker/exchange be used to facilitate trade? 
- [x] Yes; Name:
- [ ] No
- [ ] Unsure

Point to Point Trades (Traditional Municipal / Industrial Discharge, MS4, CAFO)

<table>
<thead>
<tr>
<th>Discharge Type</th>
<th>Permit Number</th>
<th>Name</th>
<th>Contact Address</th>
<th>Is the point source credit generator currently in compliance with their permit requirements?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>S050075</td>
<td>City of Monroe</td>
<td>1110 18th Ave Monroe, WI 53566</td>
<td>[ ] Yes  [ ] No  [ ] Unsure</td>
</tr>
<tr>
<td>MS4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAFO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAFO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traditional</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS4</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>CAFO</td>
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</tr>
<tr>
<td>Traditional</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>MS4</td>
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</tr>
<tr>
<td>CAFO</td>
<td></td>
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</tr>
<tr>
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<td></td>
<td></td>
<td></td>
</tr>
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<td>MS4</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MS4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CAFO</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Point to Nonpoint Trades (Non-permitted Agricultural, Non-Permitted Urban, etc.)

List the practices that will be used to generate credits:

Addition of buffer strips and creation of a nutrient management plan for property. The property is ~5.0 Ac and currently the land is being used to crop corn.

Method for quantifying credits generated: □ Monitoring
☑ Modeling, Names: SNAP + (to be completed)
□ Other: ____________________________

Projected date credits will be available: 10/31/2021

The preparer certifies all of the following:

- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.

Signature of Preparer: ____________________________ Date Signed: ____________

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative: ____________________________ Date Signed: 3/19/21
**Inspection Reporting – WWTP Expansion Site**

a. Tracking Procedures

The City will track credits monthly and report credit usage to the DNR in the Discharge Monitoring Reports (DMRs). The annual report will summarize the 12 months of credit usage and credit generation. The City will report to DNR any concern that they have that may result in a need to modify the trade agreement and/or this trade plan. For example, a need to generate additional credits based on discharge.

b. Inspection

Inspection of the BMPs shall occur to ensure they are installed per the design and meet all applicable codes and permits. Inspections of the established BMPs shall occur each month at a minimum or following heavy rain events. A licensed professional engineer will perform an annual certification to ensure the practice is performing as designed and the City remains in compliance.

The inspection reports will include:

i. Name and contact information of the inspector
ii. Inspection Date
iii. Relevant standards set forth in the Design Plan or Operation and Maintenance Plan
iv. Issues identified
v. When and how any issues identified were addressed
vi. When and how any issues identified will be addressed in the future

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For more information go to \url{http://dnr.wi.gov/} and type keyword: \textbf{Water Quality Trading}

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<table>
<thead>
<tr>
<th>Field Name</th>
<th>Soil Series</th>
<th>Soil Symbol</th>
<th>Acres</th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
<th>2022</th>
<th>2023</th>
<th>2024</th>
<th>2025</th>
</tr>
</thead>
<tbody>
<tr>
<td>WTP</td>
<td>TAMA</td>
<td>TaB2</td>
<td>5</td>
<td>16</td>
<td>15</td>
<td>15</td>
<td>15</td>
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<tr>
<td>Total</td>
<td></td>
<td></td>
<td>5</td>
<td>16</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>16</td>
</tr>
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Water Quality Trading Management
Practice Registration
Form 5400-207 (R 1/14) Page # of #

State of Wisconsin
Department of Natural Resources
101 South Webster Street
Madison WI 53707-7921
dnr.wi.gov

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Applicant Information

<table>
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</tr>
</thead>
<tbody>
<tr>
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<td>WI-0020362-08-0</td>
<td>31428</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facility Address</th>
<th>City</th>
<th>State</th>
<th>ZIP Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1110 18th Ave.</td>
<td>Monroe</td>
<td>WI</td>
<td>53566</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Contact Name (if applicable)</th>
<th>Address</th>
<th>City</th>
<th>State</th>
<th>ZIP Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jennifer Buholzer</td>
<td>1107 16th Ave.</td>
<td>Monroe</td>
<td>WI</td>
<td>53566</td>
</tr>
</tbody>
</table>

Project Name
Monroe WWTP Expansion Site Water Quality Trading Credits

Broker/Exchange Information (if applicable)

Was a broker/exchange be used to facilitate trade?  
- Yes
- No

Address

Trade Registration Information (Use a separate form for each trade agreement)

<table>
<thead>
<tr>
<th>Type</th>
<th>Trade Agreement Number</th>
<th>Practices Used to Generate Credits</th>
<th>Anticipated Load Reduction</th>
<th>Trade Ratio</th>
<th>Method of Quantification</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUrban NPS</td>
<td>3</td>
<td>Modification of cropped land for corn/soy beans to allow for only the planting of alfalfa or similar cover crops</td>
<td>11.7</td>
<td>1.2:1</td>
<td>SNAP+</td>
</tr>
<tr>
<td>O Agricultural NPS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OOther</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

County

Closest Receiving Water Name
Honey Creek

Land Parcel ID(s)

Parameter(s) being traded
phosphorus

The preparer certifies all of the following:

I have completed this document to the best of my knowledge and have not excluded pertinent information.

I certify that the information in this document is true to the best of my knowledge.

Signature of Preparer

Date Signed

Authorized Representative Signature

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative

Date Signed

Leave Blank – For Department Use Only

Date Received

Trade Docket Number

Entered in Tracking System
- Yes

Date Entered

Name of Department Reviewer
Exhibit 8

Honey Creek Park Streambank

Restoration Information
**Notice of Intent to Conduct Water Quality Trading**

Form 3400-206 (1/14) Page 1 of 2

Notice: Pursuant to s. 283.84, Wis. Stats., and ch. NR 217 Wis. Adm. Code, this form must be completed by any WPDES permittee that is using water quality trading as a method of complying with a permit limitation. Failure to complete this form would not result in penalties. Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31 - 19.39, Wis. Stats.).

### Applicant Information

<table>
<thead>
<tr>
<th>Permittee Name</th>
<th>Permit Number</th>
<th>Facility Site Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Monroe</td>
<td>WI-0020362-08-0</td>
<td>31428</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Facility Address</th>
<th>City</th>
</tr>
</thead>
<tbody>
<tr>
<td>1110 18th Ave</td>
<td>Monroe</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Contact Name (if applicable)</th>
<th>Address</th>
<th>City</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jennifer Buholzer</td>
<td>1107 16th Ave</td>
<td>Monroe</td>
<td>WI</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Project Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honey Creek Park/ WWTP Streambank Restoration</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Receiving Water Name</th>
<th>Parameter(s) being traded</th>
<th>HUC 12(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Honey Creek</td>
<td>Phosphorus</td>
<td>070900031004</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Is the permittee in a point or nonpoint source dominated watershed?</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Point source dominated</td>
</tr>
<tr>
<td>○ Nonpoint source dominated</td>
</tr>
</tbody>
</table>

(See PRESTO results - [http://dnr.wi.gov/topic/surfacewater/presto.html](http://dnr.wi.gov/topic/surfacewater/presto.html))

### Credit Generator Information

- Permittee Type:
  - ☐ Permitted Discharge (non-MS4/CAFO)
  - ☑ Permitted MS4
  - ☐ Urban nonpoint source discharge
  - ☐ Agricultural nonpoint source discharge
  - ☐ Other - Specify: __________

<table>
<thead>
<tr>
<th>Are any of the credit generators in a different HUC 12 than the applicant?</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Yes; HUC 12:</td>
</tr>
<tr>
<td>○ No</td>
</tr>
<tr>
<td>○ Unsure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Are any of the credit generators downstream of the applicant?</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Yes</td>
</tr>
<tr>
<td>○ No</td>
</tr>
<tr>
<td>○ Unsure</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Will a broker/exchange be used to facilitate trade?</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ Yes; Name: __________</td>
</tr>
<tr>
<td>○ No</td>
</tr>
<tr>
<td>○ Unsure</td>
</tr>
</tbody>
</table>

### Point to Point Trades (Traditional Municipal / Industrial Discharge, MS4, CAFO)

<table>
<thead>
<tr>
<th>Discharge Type</th>
<th>Permit Number</th>
<th>Name</th>
<th>Contact Address</th>
<th>Is the point source credit generator currently in compliance with their permit requirements?</th>
</tr>
</thead>
<tbody>
<tr>
<td>☐ Traditional</td>
<td>☐ MS4</td>
<td>☐ CAFO</td>
<td>S050075 City of Monroe</td>
<td>1110 18th Ave, Monroe, WI 53566</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>○ Yes</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>○ No</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>○ Unsure</td>
</tr>
</tbody>
</table>
Point to Nonpoint Trades (Non-permitted Agricultural, Non-Permitted Urban, etc.)

List the practices that will be used to generate credits:
Streambank restoration will be conducted on 2,760 ft of Honey Creek in Honey Creek Park and near the WWTP. See attached map. Preliminary Modeling has been completed and final model will be provided upon the completion of the topographic survey and soil testing. The modeling will be completed using the NRCS Streambank Irrigation Ditch Erosion Estimator. Final modeling will be included in the submittal package for registering the practice.

Method for quantifying credits generated:  
- Monitoring  
- Modeling, Names: NRCS Erosion Tool  
- Other: 

Projected date credits will be available: 01/01/2022

The preparer certifies all of the following:
- I am familiar with the specifications submitted for this application, and I believe all applicable items in this checklist have been addressed.
- I have completed this document to the best of my knowledge and have not excluded pertinent information.

Signature of Preparer 

Date Signed

Authorized Representative Signature
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision. Based on my inquiry of those persons directly responsible for gathering and entering the information, the information is, to the best of my knowledge and belief, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature of Authorized Representative 

Date Signed: 3/17/21
City of Monroe: Honey Creek Property Trade Agreement
Effective Date:

Permittee Information
Credit User Name (Permittee)  City Of Monroe
Permit Number  WI-0020362-09-00
Credit User Address  1110 18th Ave. Monroe, WI  53566
Permittee/Broker/Exchange Name (if applicable)  NA
Trade Agreement Number  001
Permittee/Broker/Exchange Address (if applicable)
Street Address  1110 18th Ave.
City  Monroe  State  WI  ZIP Code  53566

Project Name  Honey Creek Park Streambank Restoration

Name of Credit Generator (Landowner/Operator) (Last, First, M.I.)
Morrison Newspaper Corp of Wisconsin

Property Information
Name of Landowner(s) (if not Operator) (Last, First, M.I.)
Street Address  1065 4th Avenue West
City  Monroe  State  WI  ZIP Code  53566

Legal Description of Property - Contiguous sites under the same ownership: (add additional sheets if necessary)
See attached mapping for areas of stream bank improvements to be included in Trade Agreement.
23251.2354.1090

Parcel ID(s):

Site Locator for Construction Projects
<table>
<thead>
<tr>
<th>County</th>
<th>Township</th>
<th>Range</th>
<th>E/W</th>
<th>Section</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>2</td>
<td>N</td>
<td>7E</td>
<td>33</td>
</tr>
<tr>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Agreement
The property described above is enrolled in a Water Quality Trade Agreement. Funds are provided to the landowner/ operator in return for the installation, operation and maintenance of best management practices (BMPs) designed to enhance water quality. This agreement commits the landowner/operator, their heirs, successors and assigns to fulfill the trade agreement until a satisfaction or release is filed by the grantee.

Addenda which describe the BMPs, costs, installation schedule, and conditions are hereby incorporated into this agreement and are on file with the grantee and may be given to Wisconsin DNR upon request by the Department.
Landowner&City Agreement

Signed this _______ day of ____________________, 20___

Signature of Landowner/Operator

Morrison Newspaper Corp of Wisconsin

Typed Name of Landowner/Operator

STATE OF WISCONSIN

County

Personally came before me this _______ day of ________________, 20___

The above named ________________ to me known to be

the person(s) who executed the foregoing instrument and acknowledge the same.

Signature of Notary Public

Notary Public ________________ County, Wisconsin

My commission is permanent (expires ________________).

Landowners (if not operator)

If the landowner section is not completed, check (X) one or both of the following that apply

[X] Landowner is also operator

[ ] Trade agreement contains only high residue management, nutrient management, pesticide management, cropped land protection cover (green manure)

Signed this __________________ day of ____________________, 20___

Signature of Landowner (if not operator)

Typed Name of Landowner (if not operator)

STATE OF WISCONSIN

County

Personally came before me this _______ day of ________________, 20___

The above named ________________ to me known to be

the person(s) who executed the foregoing instrument and acknowledge the same.

Signature of Notary Public

Notary Public ________________ County, Wisconsin

My commission is permanent (expires ________________).

Credit user/broker/exchange Not applicable

Signed this __________________ day of ____________________, 20___

Signature of credit user/broker/exchange

STATE OF WISCONSIN

County

Personally came before me this _______ day of ________________, 20___

The above named ________________ to me known to be

the person(s) who executed the foregoing instrument and acknowledge the same.

Signature of Notary Public

Notary Public ________________ County, Wisconsin

My commission is permanent (expires ________________).
Section A – General Requirements

- This agreement may be amended by mutual agreement of either party as long as the agreement has not expired.
- BMP may only be removed is approved in writing by the DNR.

Section B – Landowner/Operator Shall:

- The landowner shall allow access by City personnel or authorized representative for inspection of the operation and maintenance of the BMPs.
- All maintenance to be completed at the City’s cost.

Section C – Grantee Shall:

- City will inspect and maintain the BMP to be paid for by City at no cost to the landowner.

<table>
<thead>
<tr>
<th>TA Number</th>
<th>Typed Name of Landowner/Operator</th>
<th>Initials of Landowner/Operator</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Morrison Newspaper Corp of Wisconsin</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The cost-share recipient shall implement and maintain all best management practices listed in this Addendum, unless otherwise amended in accordance with this agreement.

<table>
<thead>
<tr>
<th>Field #</th>
<th>DNR BMP Code</th>
<th>Practice Name</th>
<th>Quantity</th>
<th>Unit</th>
<th>Unit Cost</th>
<th>Estimated Total Cost</th>
<th>Reimbursement Rate (%)</th>
<th>Estimated Cost-Share Amt.</th>
</tr>
</thead>
<tbody>
<tr>
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</tr>
</tbody>
</table>

* Identify Program Names: ________________________________

<table>
<thead>
<tr>
<th>CSA Number</th>
<th>Typed Name of Landowner/Operator</th>
<th>Initials of Landowner</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Operation & Maintenance—Honey Creek Streambank Restoration

For the purposes of this Operation and Maintenance Plan, severe floods are defined as any hydrologic event resulting from a 24-hour cumulative precipitation in excess of 3.8 inches of rainfall (i.e., the 5-year, 24-hour precipitation event based on the annual maximum time series as defined by NOAA Atlas 14, Volume 8, Version 2).

Refer to Inspection and Reporting requirements to be followed as part of the proper operation and maintenance of the BMPs installed as part of this water quality trading plan.

Conditions for Boulder Toe, Bank Slope Reduction, and Tree Preservation:

1. Check the boulder toe, plantings, and trees at least once each year and immediately after severe floods. Rock removed or displaced shall be replaced as needed. Repair or replace any damaged or missing revetments.

2. Logs, trees, driftwood, and other debris lodged in or near the boulder toe shall be removed.

3. Check for sloughing, erosion, or damage to vegetative cover. Damaged areas shall be graded, shaped, and revegetated.

4. Repair any vandalism, vehicle, or livestock damage.

Additional Conditions:

1. All repairs which include the streambank or streambed should be approved by WI DNR before implementing the repair to determine if a permit is needed to complete the repair.

2. Clip and/or mechanically harvest vegetated areas, as needed, to control undesirable species and woody vegetation.

3. The BMPs will be inspected following heavy rain events at a minimum. Inspection will be used to determine appropriate actions to maintain the installed BMPs for continuous TP credit generation.
4. The BMPs will be inspected annually by a licensed Professional Engineer to ensure that the BMPs are functioning as intended in order to meet the requirements of the WQT plan.

**Inspection Reporting– Honey Creek Streambank Restoration**

a. Tracking Procedures
   The City will track credits monthly and report credit usage to the DNR in the Discharge Monitoring Reports (DMRs). The annual report will summarize the 12 months of credit usage and credit generation. The City will report to DNR any concern that they have that may result in a need to modify the trade agreement and/or this trade plan. For example, a need to generate additional credits based on discharge.

b. Inspection
   Inspection of the BMPs shall occur to ensure they are installed per the design and meet all applicable codes and permits. Inspections of the established BMPs shall occur each month at a minimum or following heavy rain events. A licensed professional engineer will perform an annual certification to ensure the practice is performing as designed and the City remains in compliance.

   The inspection reports will include:
   i. Name and contact information of the inspector
   ii. Inspection Date
   iii. Relevant standards set forth in the Design Plan or Operation and Maintenance Plan
   iv. Issues identified
   v. When and how any issues identified were addressed
   vi. When and how any issues identified will be addressed in the future Inspection reports generated during each routine or after rain event inspection will be included with the Annual Water Quality Trading Report submitted by the City to DNR.

   Annual inspections by a professional engineer will typically occur in the late spring. This time of year, is ideal for evaluating the condition of BMPs as it follows the freeze/thaw which
poses the greatest potential for changes to the BMPs. Minimal vegetation cover will allow for adequate visual inspection.

c. Annual Water Quality Trading Report Submittal
Each year the following shall be submitted to the DNR:

i. The number of pollutant reduction credits (lbs/month) used each month of the previous year to demonstrate compliance.

ii. A summary of the annual inspection of the practice that generated any of the pollutant reduction credits used during the previous year, this inspection shall be completed by a licensed Professional Engineer.

iii. All monthly inspection reports.

iv. Identification of noncompliance or failure to implement any terms or conditions of this permit with respect to water quality trading that have not been reported in discharge monitoring reports.

v. A list of all noncompliance and the correction measures and timing to address the issues throughout the year; and

vi. An updated WQT plan if management practices have or will change.

d. Monthly Certification of Management Practices
Each month, the city will certify that the BMPs are maintained and operating in a manner consistent with this Water Quality Trading Plan or provide a statement noting noncompliance with this Plan. The monthly Discharge Monitoring Report (DMR) will include the following statement as a certification of compliance:

“I certify, to the best of my knowledge, the management practices identified in the approved water quality trading plan are installed, established and properly maintained.”
e. Notification of Failure to Generate Credits

The City will notify DNR by telephone call to DNR’s regional wastewater compliance engineer within 24 hours or next business day of becoming aware that phosphorus credits used or intended for use by City are not being generated as outlined in this Water Quality Trading Plan.

The City will submit a written notification within five days after the City recognizes that the phosphorus credits are not being generated as outlined in the Trading Plan. The DNR may waive the requirement for submittal for a written notice within five days and instruct the City to submit the written notice with the next regularly scheduled monitoring report required by City’s WPDES Permit.

The written notice will contain a description of how and why the TP credits are not being generated as outlined, the steps taken or planned to prevent reoccurrence of the identified problem, and the length of time it will take to address the issue.

f. Conditions under which Management Practices May Be Inspected

Any DNR authorized officer, employee, or representative has the right to access and inspect the credit generating practice so long as the City’s trade agreement with the DNR and this Water Quality Trading Plan remain in effect.
SEGMENT 1

SEGMENT 1 – Some bare ground, some exposed roots.
SEGMENT 2 – Vegetative overhang, bare banks, and exposed roots.
SEGMENT 2 (CONT.)
SEGMENT 3

SEGMENT 3 – Bare banks with some root exposure.
SEGMENT 4

SEGMENT 4- Some bare ground, exposed roots, and some trees starting to slip into the stream. Banks have slid in a couple of locations.
SEGMENT 5A – Bare banks, root exposure, and vegetative overhang.
SEGMENT 5B – Slumping soil, exposed banks, vegetative overhang.
SEGMENT 6- Bare banks, some rills, and exposed roots.
SEGMENT 7 – Bare banks, some exposed roots.
SEGMENT 7 – Bare banks, some exposed roots and some rills beginning to form. Some trees starting to slip into the creek.
SEGMENT 8

SEGMENT 8 – Exposed roots and bare soil.
SEGMENT 8 (CONT.)

SEGMENT 8 – Exposed Roots and bare soil. Some foliage tipping into creek.
SEGMENT 9

SEGMENT 9- Exposed roots, bare banks in some location, slumping soil in other locations.
SEGMENT 9 (CONT.)

SEGMENT 9- Exposed roots, bare banks in some location, slight vegetative overhang.
SEGMENT 10A

SEGMENT 10A- some exposed roots, vegetative overhang, and bare bank under the vegetative overhang. Some slumping of bank into the creek.
SEGMENT 10B

SEGMENT 10B- Exposed roots, vegetative overhang, and bare bank under the vegetative overhang. Some slumping of bank into the creek. Different bank height than Segment 10A.
SEGMENT 11 – Bare banks and some vegetative overhang.
SEGMENT 12A

Segment 12A – Bare bank, visible roots, and some vegetative overhang.
SEGMENT 12B

Segment 12B – Note slumped bank and visible roots. There is some vegetative overhang.
SEGMENT 13

Segment 13 – It is hard to see, but this growth is overhung over the bank and the bank is largely bare behind the overhang. The bank has started to drop into the stream in a couple of spots.
## Soil Total Mineral Analysis

<table>
<thead>
<tr>
<th>Sample ID</th>
<th>TP %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.07</td>
</tr>
<tr>
<td>2</td>
<td>0.06</td>
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<tr>
<td>3</td>
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<tr>
<td>13</td>
<td>0.06</td>
</tr>
</tbody>
</table>
ENGINEERING & ENVIRONMENTAL

Know what's below. Call before you dig.

OR CALL (800) 242-8511 DIGGERS HOTLINE

HONEY CREEK STREAMBANK STABILIZATION IMPROVEMENTS

FOR

CITY OF MONROE

MONROE, WISCONSIN

PROPOSED STREAMBANK IMPROVEMENT PLANS

GREEN COUNTY

FEBRUARY 2022

LOCATION MAP

FEHR GRAHAM

ENGINEERING & ENVIRONMENTAL

ILLINOIS IOWA WISCONSIN

DIGGERS HOTLINE

Know whom to call before you dig

ILLINOIS IOWA WISCONSIN
General Notes:
Site plan for Section 106+00 - 108+00

North Bank:
106+00 - 108+00
South Bank:
106+20 - 108+00
**Eroding Bank or Ditch Length (Feet)**              **Eroding Bank Height; or Ditch Bottom Width (Feet)**              **Area of Eroding Streambank or Ditch (FT²)**              **Lateral or Ditch Bottom Recession Rate (Estimated) (FT / Year) X FT² Eroded Annually**              **Soil Texture**              **Approximate Pounds of Soil per FT²**              **Estimated Soil Loss (Tons/Year)**              **Percentage P (%)**              **Tons/Year Phosphorus**

<p>| | | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>350.0</td>
<td>5.1</td>
<td>1,789</td>
<td>0.15</td>
<td>268.3</td>
<td>Silt Loam</td>
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<td>300.0</td>
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<td>170.0</td>
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<td>1,387</td>
<td>0.15</td>
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<tr>
<td>4</td>
<td>250.0</td>
<td>6.3</td>
<td>1,575</td>
<td>0.30</td>
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<td>627</td>
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</tr>
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<td>0.15</td>
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<td>Silt Loam</td>
</tr>
</tbody>
</table>

Total Estimated Annual Streambank or Ditch Erosion Soil Loss (Tons): 241.6

**Total Estimated Annual Streambank or Ditch Erosion Soil Loss (Tons):** 0.1544

* Eroding bank height is measured along the bank, not the vertical height of bank.

**Estimated Phosphorus Loss (lbs) = 308.73**

**WQT (TR= 3) = 102.91**