



ADAPTIVE MANAGEMENT PLAN **ADMINISTRATION**

PROPOSAL FOR
PROFESSIONAL
SERVICES FOR



REVISED SEPTEMBER 3, 2020



SYMBIONT

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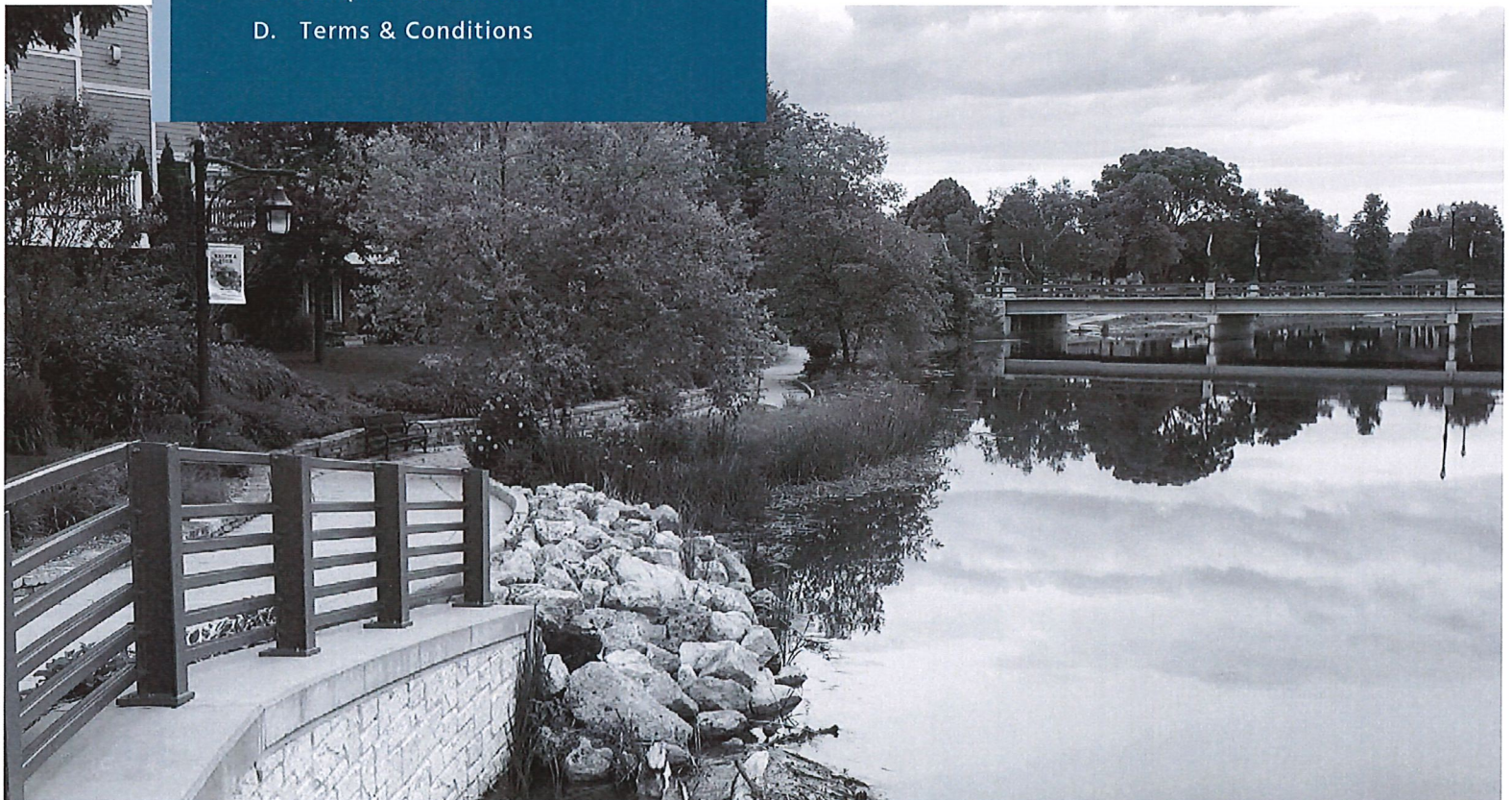
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The Village of Grafton has spent the past five years preparing a plan to meet water quality-based effluent limits (WQBELs) for phosphorus per the mass values from the total maximum daily load (TMDL) calculation for the Milwaukee River. The planning effort included reviewing how to optimize phosphorus reductions with the current infrastructure, studying options for improving the wastewater treatment process, and estimating watershed reductions that could be used to comply with the permit limits.

The Village of Grafton elected to implement a watershed management plan commonly referred to as Adaptive Management (AM) to achieve compliance with the phosphorus mass allocations found in the Wisconsin Pollution Discharge Elimination System (WPDES) permit. This plan was formally submitted to the Wisconsin Department of Natural Resources (WDNR) on December 31, 2019, as part of the Wisconsin Pollution Discharge Elimination System (WPDES) permit renewal application. The Village received a letter from the WDNR granting conditional approval of the Village's AM plan on June 9, 2020. The WDNR has assigned tracking number WQT-2020-0012 to the Village's plan. Final approval of the Village's plan is subject to public comment and United States Environmental Protection Agency (U.S. EPA) review.

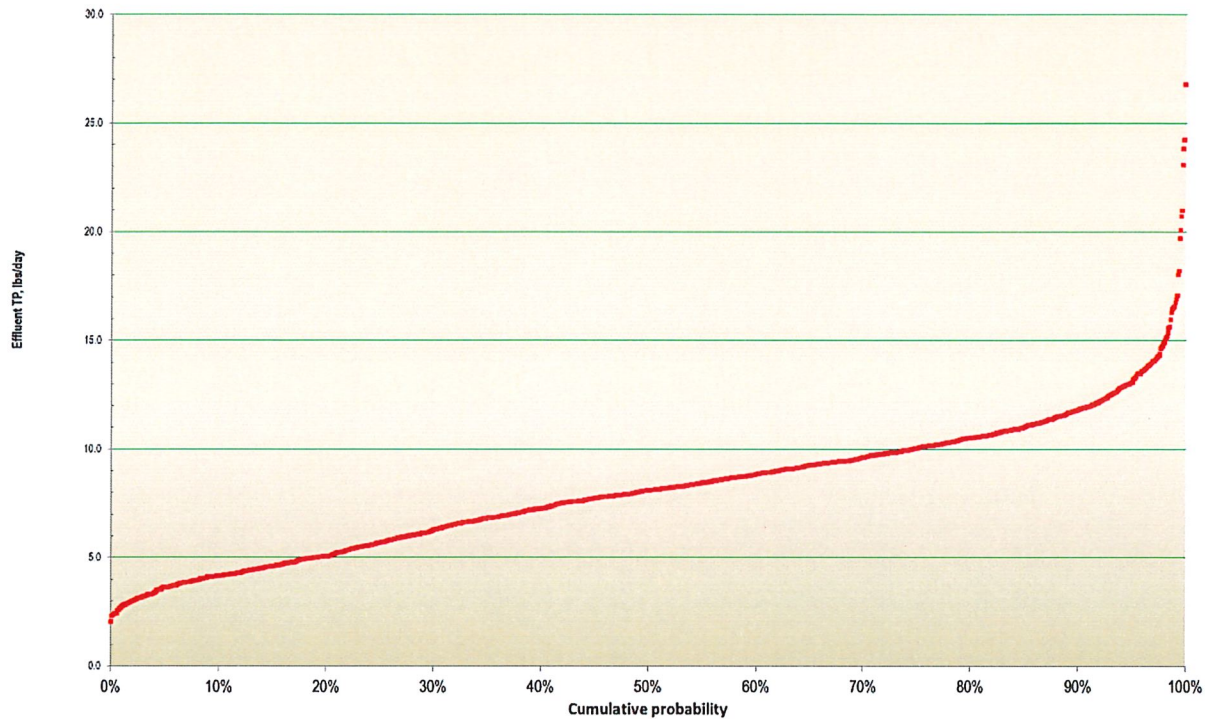
POINT SOURCE DISCHARGE

The Village of Grafton operates a wastewater treatment plant (WWTP) in Ozaukee County. Effluent from the WWTP is discharged to the Milwaukee River in the Milwaukee River (south) watershed of the Milwaukee River basin within TMDL reach MI-17. The effluent is regulated by WPDES Permit No. WI-0020184-09-1.

The WDNR reviewed test data collected from the Milwaukee River in 2012 by the Village of Grafton and determined that the median phosphorus concentration of the river upstream from the WWTP outfall was 0.077 mg/L. Wisconsin Administrative Code Chapter NR 102 lists the water quality phosphorus criterion for the Milwaukee River within TMDL reach MI-17 as 0.075 mg/L.

The Village of Grafton monitors effluent phosphorus concentration and influent flow at the wastewater treatment plant in accordance with WPDES permit requirements. Effluent phosphorus concentration and mass for the existing treatment facility operating under current flows and loading conditions have been reviewed throughout the planning period. Data compiled from January 2012 through April 2019 indicated the monthly average daily mass of phosphorus in the effluent was 8.15 lb/day with a range from 3.61 to 14.44 lb/day. This average mass value is above the future phosphorus limits, requiring the Village to take action to achieve compliance. Note that phosphorus effluent mass is being discussed in place of concentration because the future phosphorus limits are expressed as mass values and effluent mass compares better to non-point source reductions, which are often computed as mass reductions. A cumulative distribution of the effluent mass data was prepared (see Figure 1-1). This data confirms that under current operating conditions, the existing treatment plant is rarely able to achieve the future permit requirement of a daily effluent phosphorus mass value of 3.4 lb/day or less.

Figure 1-1.
Cumulative Distribution of Total Phosphorous Effluent Mass for Village of Grafton
Jan. 2012 through April 2019



FUTURE PHOSPHORUS PERMIT LIMITS

The Village of Grafton received an updated permit that contained daily average mass values. The following table shows the daily mass values contained in the Village's WPDES permit along with the corresponding monthly mass limit.

Table 1-1. Mass Allocations for the Village of Grafton From the TMDL

Total Phosphorus			
Month	Monthly Mass (lb)	Days per Month	Daily Average (lb/day)
January	91.29	31	2.94
February	95.53	28	3.41
March	87.07	31	2.81
April	88.55	30	2.95
May	96.38	31	3.11
June	96.49	30	3.22
July	86.83	31	2.80
August	84.04	31	2.71
September	86.50	30	2.88
October	72.21	31	2.33
November	88.49	30	2.95
December	82.55	31	2.66
Annual Limit	1,055.94		

Not every month has the same daily average value. The month with the most restrictive limit is October, with a monthly mass limit of 72.21 lbs or a daily average of 2.33 lb/day. The months with the least restrictive limits are June and February, with monthly mass limits of 96.49 and 95.53 lbs or daily averages of 3.22 and 3.41 lb/day respectively.

The information in Table 1-1 is provided for informational purposes. The goal of the AM program is to reduce the total phosphorus (TP) concentration in the river. However, Symbiont understands that AM also provides the Village time to explore other options. Symbiont further understands that it is possible if the performance of the treatment plant can improve to consistently meet the daily average mass values shown in Table 1-1, the Village could switch to another compliance option through a permit modification process.

SUMMARY OF THE AM PLAN

The conditionally approved AM plan defined the action area as MI-17 of the Milwaukee River TMDL. The plan also identifies an initial mass target reduction of 6,700 lb of phosphorus to bring the river into compliance. The plan targets phosphorus reductions throughout the action area and upstream from the action area as follows:

- Improvements along the Milwaukee River throughout the action area
- Improvements to agricultural operations (within the Greater Milwaukee River Reaches MI-16 & MI-17)
- Continued optimization of the WWTP

Included with the AM plan is a monitoring program that involves testing the TP concentration in the Milwaukee River. A Quality Assurance Project Plan (QAPP) for this testing program was included in the appendix of the AM plan. The QAPP identifies the general locations for sample collection, the testing procedures for the river samples, the parameters to be tested, and the lab that will perform the testing.

The following paragraphs provide some general descriptions of how phosphorus reductions will be achieved.

Area 1 – Improvements Along the Milwaukee River Impacting Reach MI-17

The plan describes the first area for improvements involving phosphorus runoff reductions along the Milwaukee River throughout the action area (MI-17 reach). These reductions will mostly come from urban sources throughout the Village. The most probable means to achieve phosphorus reductions involves two strategies. First, a strategy that targets capturing wet weather flow could be used. This strategy could focus mostly on green infrastructure design such as bioswales, rain gardens, and porous pavement. The second strategy could involve total suspended solids (TSS) and phosphorus capture and could focus on using reactive type filter media to reduce phosphorus concentrations from wet weather sources.

Area 2 – Agricultural Improvements Within Reaches MI-16 and MI-17

The plan indicates that the Village of Grafton will support the implementation of agricultural best management practices (BMPs) within the MI-17 reach and upriver within the MI-16 reach. This is the area that offers the greatest potential for TP runoff reductions. Preliminary modeling summarized in the AM plan suggests that baseline phosphorus runoff from 25,000 acres of agricultural lands in the targeted areas of MI-16 and MI-17 far exceed 100,000 lb per year (see Table 1-2). The Village of Grafton, working with Sand County Foundation and regional partners Ozaukee County and Milwaukee River Watershed Clean Farm Families (MRWCFF), is planning to assist farmers with implementing and maintaining BMPs that support phosphorus reductions to the watershed. SnapPlus modeling is to be used as a tool to help quantify mass reductions. Previous initial estimates prepared by Sand County Foundation and included in the AM plan are summarized in Table 1-2.

**Table 1-2.
SnapPlus Modeling P Mass Reduction Projections**

Type of Ag Operation	Baseline P (lb)	P Release After Implementing BMPs (lb)	% Reduction
Cash Grain	70,066.6	45,567	35%
Dairy	30,672.9	18,673	39%
Total	100,739.5	64,240	36%

The information presented in Table 1-2 indicates that reductions of phosphorus runoff are possible, approximately 2.45 lb/ac for cash grain operations and 1.2 lb/ac for dairy operations through implementation of common BMPs. The Village along with Sand County Foundation started working with farmers (a total of nine to date) to use cover crop and no-till practices. Cover crop was planted on a total of 318 acres in the fall of 2019. No-till farming will be implemented throughout 2020 on 134

acres. The Village will continue to work with farmers to achieve over 5,000 lb of TP reduction per year as estimated by SnapPlus modeling.

Area 3 – Improvements to the Wastewater Treatment Plant

The Village of Grafton plans to reduce effluent phosphorus concentration beyond the interim effluent phosphorus limits associated with AM by installing a second coagulant addition point within the treatment trains. An average effluent TP concentration of approximately 0.3 mg/L would yield almost 1,280 lb reduction from the current levels, helping to contribute toward the 6,700 lb annual target.

Target Reductions

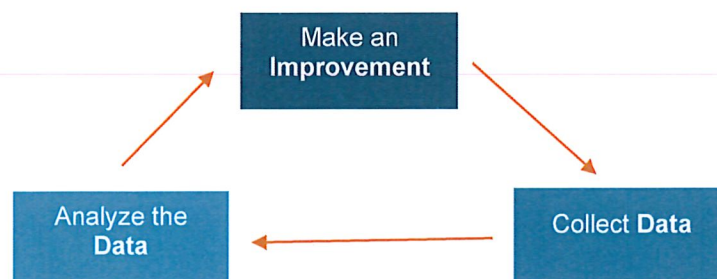
This plan targets phosphorus reductions along the Milwaukee River and at the treatment plant. The initial target reductions are:

**Table 1-3.
Initial Phosphorus Reduction Targets**

Location	Reduction Target (lb/yr)
Areas 1 & 2: Greater Milwaukee River Non-point Area within MI-17 and MI-16	5,420
Area 3: Treatment Plant	1,280
Total	6,700

The phosphorus targets in Table 1-3 go well beyond the minimum load reduction necessary based on the Village proportional share. The AM plan illustrates that the Village's proportional share of TP in the river is 4.8%. It is understood that the minimum TP reduction achieved through the first 5 year permit term is 4.8% of 6,700 lb or 321.6 lb. This minimum reduction is necessary to be eligible to continue the AM plan into the second permit term.

These initial target reductions in Table 1-3 may need to be adjusted as more data is collected through river monitoring. The plan is to review the river monitoring data, consult with partners to identify areas for reductions, develop projects that achieve reductions, implement projects, and monitor the results. This iterative approach to achieving compliance will allow the Village to adjust as needed:



The plan clearly states that if the sample data collected from the river monitoring program indicates that the water quality criterion has been achieved, watershed improvement work will be suspended in order to continue to collect more data.

The Village of Grafton has the goal of lowering the median phosphorus concentration in the river to below the WQBEL criterion by the end of the first 5-year permit term. It is estimated that a 6,700 lb reduction is needed. The plan includes the following preliminary schedule along with the annual reduction goals for the Village:

**Table 1-4.
Preliminary Project Schedule**

Year	Activities	Projected Annual Phosphorus Reduction (lb/yr)	Accumulated Total Annual Phosphorus Reduction (lb/yr)
1	Action area sampling and improvements in the Greater Milwaukee River non-point area within reaches MI-16 and MI-17	250	250
2	Action area sampling, improvements in the Greater Milwaukee River non-point area within reaches MI-16 and MI-17, and improvements to the WWTP	1,780	2,030
3	Action area sampling and improvements in the Greater Milwaukee River non-point area within reaches MI-16 and MI-17	1,000	3,030
4	Action area sampling and improvements in the Greater Milwaukee River non-point area within reaches MI-16 and MI-17	1,000	4,030
5	Action area sampling and improvements in the Greater Milwaukee River non-point area within reaches MI-16 and MI-17	2,670	6,700

By the end of this 5-year project schedule, the Village will be responsible for phosphorus reductions within the Greater Milwaukee River reaches MI-16 and MI-17 of 6,700 lb per year.

The plan indicates that the Village will revise this project schedule based on the results from the monitoring program.

Some examples of adjustments that appear in the plan include:

- Data showing that projects in the Greater Milwaukee River reaches MI-16 and MI-17 not achieving the phosphorus reductions could result in increasing agricultural improvements.
- Data showing that the Milwaukee River complies with water quality criterion could result in suspending the project schedule and continuing to monitor the river.

HOW SUCCESS IS TO BE MEASURED

The goal of the AM plan is to lower the in-river phosphorus concentration to meet the applicable water quality criterion at the pour point of MI-17 (designated as sample location 4). Success will be determined when the annual median phosphorus concentration is at or below the water quality criterion.

The water quality criterion is:

- The current water quality standard (WQS) value of 0.075 mg/L as shown in the Wisconsin Administrative Code for this section of the Milwaukee River, or
- A State and U.S. EPA approved site-specific criterion based on biological metrics in accordance with new rulemaking being promulgated by the Department, or
- Any change to the State WQS value for this section of the Milwaukee River

Interim successes will be measured under the following:

- Phosphorus concentration decreases throughout the action area, but perhaps not to the water quality criterion
- Improved biological metrics or water clarity measurements support improving aquatic habitat
- Improved soil health resulting from improvements to agricultural operations. Improved soil health has been linked to water quality improvements
- SnapPlus modeling results demonstrate that implemented agricultural best management practices reduce phosphorus runoff

Annual reports are to be prepared that summarize all activities that have occurred over the preceding year along with identifying interim successes, SnapPlus modeling investigations, and any quantitative measurements of water quality improvements.

The plan clearly states that if data is collected that shows the median phosphorus concentration is at or below the criterion, the Village can suspend all future project work but complete work that is already in progress. Monitoring will continue in order to confirm that the water quality criterion is being met. The Village will resume project work should additional monitoring show that the criterion is being exceeded. The plan identifies two years of achieving the water quality criterion to be evidence that the river is meeting water quality and the Village's adaptive plan is successful.

IMPLEMENTATION SCHEDULE WITH MILESTONES

The Village included a tentative schedule in the AM plan. Table 1-5 was copied from the AM plan.

**Table 1-5.
Sample of the Initial Implementation Schedule**

Date	Activities	Notes
May 1, 2020	Begin monitoring of the Milwaukee River throughout action area.	This activity will be performed by the Village following the sampling plan. This activity will continue through October.
September 1, 2020	Complete the installation of non-point source BMPs within the Greater Milwaukee River reaches MI-16 or MI-17.	This activity will be performed in conjunction with the Village and Ozaukee County.
Fall 2020	Provide support to ag for installation of cover crop and to practice no-till.	
February 1, 2021	Submit annual report for 2020.	This report will summarize the results of the first-year monitoring along with any BMP installation within the Greater Milwaukee River reaches MI-16 and MI-17. The report will identify projects to be implemented in 2021.
May 1, 2021	Resume monitoring of the Milwaukee River throughout action area.	
Summer 2021	Continue implementing improvements to Greater Milwaukee River reaches MI-16 and MI-17.	
Fall 2021	Provide support to agricultural operations for installation of cover crop and to practice no-till.	
February 1, 2022	Submit annual report for 2021.	

This schedule needs to be updated, for it was based on the WDNR issuing a new WPDES permit for the Village's WWTP by July 1, 2020. Recent information obtained from the WDNR indicates that the new WPDES permit may be issued on January 1, 2021.

It is understood that river monitoring did not begin in May. There are a number of reasons for this including:

- Approval of the AM plan by the WDNR had not been received. There was a chance that the WDNR could have changed the sampling plan.
- The coronavirus disrupted normal day to day operations.

Efforts were made to restart the sampling program in July. Sampling locations were identified and collection procedures were finalized. Sample collection was to begin in August, but high river flow conditions hindered the first attempts. It is hoped that some samples can be collected in 2020.

It is further understood that the Village has done some work with nine farmers within the Milwaukee River watershed and that estimates for the amount of TP reduction associated with cover crop and no-till farming practices are available.

The schedule provided in the AM plan is a sample covering the first two years of the initial five-year plan. This schedule will be updated as part of the administration of the Village's AM plan.

PROJECT APPROACH

Symbiont's approach to this project is concurrent with the manner in which we execute our engineering projects. The administration of the Village's AM plan will be broken down into core components, involving careful planning of each. Each component will be executed by a discipline leader, using other resources within Symbiont as necessary. The project manager will oversee the execution of each component to make sure details are provided, schedules are met, and budgets are maintained. The project manager will be the point of contact for the Village. All communication will begin with the project manager, who may elect to bring in others to provide support.

Symbiont has included an advisor as part of its team. This advisor has direct experience and knowledge with executing AM plans. Symbiont's project manager will consult with this advisor on critical issues as needed to keep the plan advancing.

In addition, Symbiont incorporates quality assurance/quality control (QA/QC) efforts into every stage of a project, from proposal preparation through project completion and start-up. QA/QC is an integral part of each project and one that is essential for success. Our QA/QC team involvement begins at the project planning stage before any time is charged to the project to ensure the project planning has taken place and the involvement continues throughout the project with discipline-specific reviews. Over the past several years, Symbiont has been implementing a formalized internal project QA/QC program for the preliminary design and final design review process. This program requires documented sign-offs by discipline and overall project reviewers. Symbiont will continue the practice of QA/QC review throughout the administration of the Village AM plan.

Project Management, Coordination, and QA/QC

A key to a successful project is to assign a project manager who has the authority and responsibility to control the overall aspects of a project. Symbiont is committing Jon Butt, P.E. to the role of project manager for this project. He will be the primary contact for all project decisions and communications and will have the ultimate responsibility to work with all the team members to deliver a successful project. He has experience working closely with the Village and has a full understanding of what needs to be done for a successful project. The project manager will make project assignments and be responsible for the delivery of each project task.

Symbiont will use both internal staff and external partners to execute this project. A summary of staff that will provide annual services for this project includes:

- Trisha Nigl – Project Engineer
- Pat Carnahan, P.E. – QA/QC Manager
- Ryan Eckdale-Dudley, GISP – GIS & Data Management Manager
- Kyle Engelking – GIS & Data Management Engineer
- Terry Dassow – Publication and Graphic Design Specialist

External partners include:

- InDepth Argonomy – Steve Hoffman – agricultural best management practice development & modeling
- Tom Steinbach – Technical Advisor on AM plan implementation

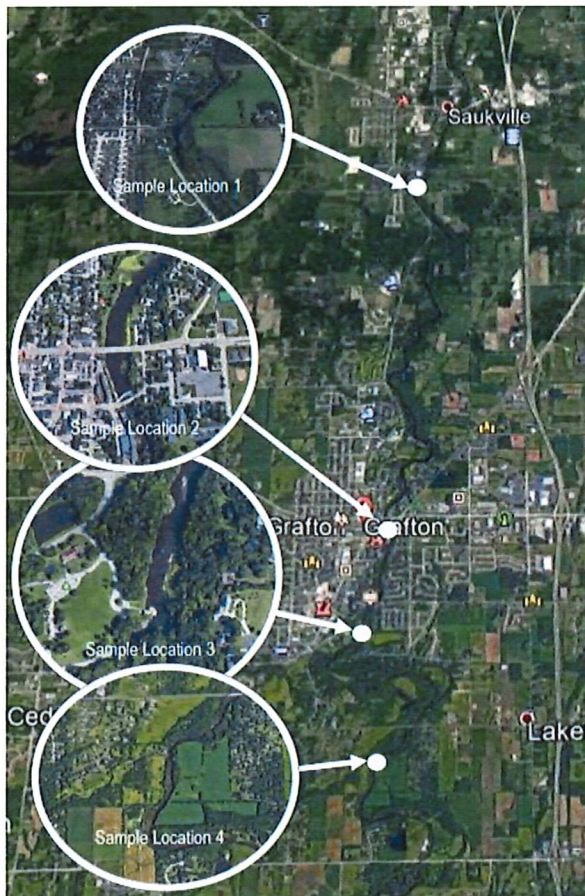
The project team (excluding the advisor) will be introduced at the project kickoff meeting. Throughout the project, we will coordinate the activities of our team members with Grafton's project manager as appropriate.

SCOPE OF SERVICES

Symbiont has divided the Village's AM plan into the following core components along with a description of the services to be performed in support of each.

Task 1 – River Sample Collection and Data Monitoring

The concentration of phosphorus in the river is the key parameter that will determine if the AM plan is successful, therefore this may be the most critical task within the entire AM plan. This task involves collecting and analyzing river samples to determine the concentration of phosphorus present. A total of four locations throughout the action area are identified in the AM plan for sample collection. Those four locations are described as follows:



Site	Description
1	Determines the TP concentration of the Milwaukee River flowing into the action area.
2	Determines the TP concentration of the Milwaukee River near the mid-point location in the action area. This location is upstream from a dam and may offer insight regarding phosphorus release that may occur from sediments trapped by the Bridge Street Dam.
3	Determines the TP concentration of the Milwaukee River at a location just downriver from the WWTP outfall. This location was selected as it corresponds to a point of sample collection in earlier testing.
4	Determines the TP concentration of the Milwaukee River at the pour point for the action area. This is the critical sample location for compliance.

A reproduction of the map from the appendix of the AM plan that helps locate each sample collection site is presented on the left. An integral aspect of the project will be to utilize the Village's existing geographic information system (GIS) platform to ensure data is collected, stored, and shared in a standardized geodatabase format.

Included in our scope will be to leverage the Village's ArcGIS Online (AGOL) GIS system and develop as necessary additional GIS layers that will display the location, characteristics, and related information of critical AM plan components in a geospatial enabled system (AMPGIS).

The river sampling and monitoring program will follow the Quality Assurance Project Plan (QAPP) that was included in the appendix of the AM plan. Symbiont will provide the following services in support of the river sample collection and data monitoring:

- Symbiont will work with plant staff to determine the location in the river for sample collection at sites 1 through 4. Each site will be marked with GPS coordinates that the Village can use to ensure samples are always collected near the same location in the river. Symbiont will integrate river sample collection locations into the Village's AMPGIS so each location can be viewed by stakeholders and other team members as permission is given. *Update – This task has been completed. All initial sample collection locations have been identified.*
- Starting at the beginning of each month, Symbiont will check river flow at the United States Geological Survey (USGS) flow monitoring station near Co Hwy C to determine if the river flow is within the range indicated in the QAPP for sample collection. Symbiont will notify the Village by email regarding the river conditions and provide a go/no go decision on collecting the first monthly sample. Note that samples are only collected during the growing season defined as the six months starting in May and extending through October. Symbiont will continue to monitor river flow throughout the month until all sample collection is complete.
- Sample collected will be tested in the lab at the wastewater treatment plant. Symbiont will review the test data produced by the lab. Symbiont will advise plant staff if it is necessary to collect additional samples.
- As part of the AMPGIS, Symbiont will maintain a database of all samples collected and of all test results from the samples including:
 - ◆ All chain of custody paperwork
 - ◆ All lab sheets
 - ◆ Test results
 - ◆ And any other data that is deemed appropriate

Along with maintaining the database, Symbiont will perform the necessary statistical analysis of the data collected. All samples collected within a single month will be averaged into a single representative value. The growing season median will be computed from the individual monthly values. This median will be compared to the appropriate WQC to determine if the river has achieved compliance.

This task will be performed during the growing season each year throughout the 5-year term of this project. The Village will be responsible for collecting all samples and for performing all tests in a state-certified laboratory for TSS and TP.

This task will be executed primarily by Symbiont's project manager, with support from a project engineer and the GIS Manager.

Deliverable:

- Symbiont will prepare an annual report on the samples that are collected, the results from the samples, and a determination of the river meeting the appropriate WQC.

Task 2 – Area 1 Non-Point Source Phosphorus Reduction Throughout the Village

This task involves the area with perhaps the smallest phosphorus reduction potential but provides opportunity for projects that the Village has the most control over and are the most visible to the general public. These types of projects offer the Village opportunities to educate stakeholders and rate payers on the type of water quality restoration work being done. The Milwaukee River TMDL indicates that the MS4 baseline TP load from the Village to the Milwaukee River within MI-17 is just over 656 lb/year. In the background section of this proposal, the TP reduction target between Area 1 and Area 2 is defined as just over 5,400 lb/year. The vast majority of this will come from agricultural reductions, as described under Task 3 since there is a much greater potential for phosphorus reduction from agricultural sources. However, it will be beneficial to implement some projects within the Village not only to realize the phosphorus benefits but also to demonstrate that the Village is committed to watershed improvements. Stakeholders can see visible improvements through these projects, helping the Village to justify the expense.

Symbiont has identified two primary approaches that could be implemented throughout the Village to reduced phosphorus loading to the Milwaukee River:

1. Capture and infiltrate wet weather flows using green infrastructure (GI) to prevent the flow from reaching the Milwaukee River.
2. Utilize treatment technologies to reduce phosphorus concentration in storm water before reaching the Milwaukee River.

Symbiont's project manager will provide support to the Village and the Village's MS4 program engineer to assist with implementing either or both of these strategies. Symbiont's scope for this task is limited to helping developing strategies that target TP and TSS reductions. Symbiont's scope also includes reporting any improvements associated with the MS4 program that contribute to TP and TSS reductions to the Milwaukee River. All modeling of TP and TSS reductions is by others and not included in Symbiont's scope.

The services summarized for this task will be performed on an as-needed basis as requested by the Village. The Village will be responsible for developing all MS4 projects, collecting all samples, if necessary, and for performing all tests in a state-certified laboratory for TSS and TP.

This task will be executed primarily by Symbiont's project manager, with support from a project engineer.

Task 3 – Area 2 Agricultural Sources of Phosphorus and TSS

Agricultural sources of phosphorus offer the greatest potential for reductions. As indicated in the background, as much as 25,000 acres of farmland may be available for phosphorus reductions. The target is to achieve just over 5,000 lbs of phosphorus reduction over the 5-year WPDES permit term. Symbiont proposes to work with the Village, Sand County, and Ozaukee County to expand programs that have already been started. Symbiont has included an agronomist on its team who will work with Sand County and farmers within the watershed to identify practices that can be implemented to reduce phosphorus runoff.

Symbiont will provide the following services in support of agricultural phosphorus and TSS reductions if deemed necessary in the future:

- Building on what the Village and Sand County have started, Symbiont will work with stakeholders to find farmers interested in making improvements to their farming operations. This search will focus on cash grain and dairy operations, as these were identified by Sand County as having the greatest potential of phosphorus reductions.
- Symbiont will register and will work with Sand County to register any practices that involve phosphorus or TSS reductions with the WDNR in order to preserve the Village's right to convert to a nutrient trading compliance program.
- Through our agronomist, Symbiont will prepare SnapPlus models for each field, for each practice as necessary to quantify the phosphorus and TSS reductions. The results from this modeling effort will help guide the amount of farm involvement to achieve the desired outcome. This modeling effort is also necessary if the Village decides to switch to nutrient trading.
- Through our agronomist and in coordination with Sand County, Symbiont will provide the necessary information to the farmer for the management practice to be implemented. If the practice has a design element, sketches and instructions will be provided to the farmer. If the practice is more operational, such as no-till, instructions and other reference information will be provided.
- Within the AMPGIS, Symbiont will maintain a database of applicable GIS layers of the practices including the locations of the fields, the practice (or practices in use), the potential phosphorus and TSS reductions, and documentation of the practice (e.g., photos and/or videos). Symbiont envisions this may include collecting bi-annual drone footage of practices in use, and integration with the proposed AMPGIS. Symbiont will coordinate all efforts with the Village and Sand County.

The amount of the land involved and therefore the target phosphorus reductions will follow the tentative schedule found in Table 1-4 of the background section. However, it is understood that the Village will make the final determination and the amount of phosphorus reductions are dependent on Village budgets and the Village's financial commitment.

It is anticipated that services for this task will occur year-round, as it is expected that planning for improvements will occur during the winter and summer with the installation of improvements occurring in the fall and the spring.

This task will be executed primarily by the agronomist on Symbiont's team with oversight provided by the project manager and with support from a project engineer and the GIS team leader.

The number of hours used to estimate the level of effort for this task are presented in Task 4.

Task 4 – Additional Support

The previous tasks cover the majority of the services to be provided. Symbiont proposes to provide the following additional services:

- **Print/Digital Materials**

Symbiont will generate annual information that the Village can print and distribute as necessary to keep stakeholders and the general public informed of the Village's activities. Symbiont will consult with the Village on the content for this informational material. Symbiont will prepare a draft for Village approval. Symbiont will provide an electronic file of the final deliverable for the Village to use as it sees fit. An example of one such deliverable from the Oconomowoc project can be found in the appendix of this proposal.

- **Annual Reports**

Symbiont will prepare an annual report on the AM plan. This report will summarize all activities that were executed over the past year and identify any new projects to be executed in future years. This report will also contain mass reductions from the non-point source modeling, any test data that was collected and analyzed from river sampling, and any other relevant information. This report is intended to be submitted to the WDNR as a condition of the Village's AM plan. This report would also be distributed to the Village's Public Works Board. This report is not intended to be written for the general public.

- **Meetings**

Symbiont understands that there will be many meetings that will arise throughout a year. Symbiont will consult with the Village to determine if participation at such meetings is needed. If so, Symbiont will attend as a representative of the Village. Symbiont has identified the following anticipated meetings:

- ◆ Quarterly update to the Public Works Board
- ◆ Attendance at the Quarterly AM meeting currently involving Madison, Green Bay, Oconomowoc, Plymouth, and Milwaukee Metropolitan Sewerage District (MMSD)
- ◆ Attendance at periodic meetings with the Milwaukee River Watershed Clean Farm Families and Ozaukee County

- **Grants and Other Funding Sources**

Symbiont will review potential public and private sources of funds that could help defray costs for the Village. Anticipated sources for such funds include U.S. EPA, U.S. Department of Agriculture, U.S. Department of the Interior, Clean Lake Fund, WDNR, WI Department of Agriculture, Duck's Unlimited, Pheasant's Unlimited, Trout's Unlimited, and large family trusts that support habitat restoration projects.

Symbiont will review the eligibility requirements to determine if the Village's AM project qualifies and if it does, Symbiont will review the application process and determine the potential grant dollars. The Village can determine if any of the sources are worthwhile. If yes, Symbiont will assist with preparing the grant application with assistance from the Village. Note: Symbiont has not included time to assist with large, highly complex grant applications. If the Village

wishes to pursue such grants, Symbiont will determine the level of support needed and submit a change order to this contract prior to delivering any additional services.

■ **Modification of the AM Plan**

It is anticipated that when the time is appropriate, the Village may add the MS4 permit to the AM plan as a means to achieve phosphorus compliance. If necessary, Symbiont can provide an amendment to the AM plan to add the MS4 permit to the plan.

■ **BMP Verification and Documentation**

Symbiont will be responsible for documenting installation and operation of agricultural BMPs. Symbiont will travel with its agronomist twice per year to take photos and drone videos of BMPs. Digital records will be saved to AMPGIS.

■ **AMPGIS Dashboard**

Symbiont will develop a dashboard to assist with data tracking and monitoring for this project. The dashboard will enable Village staff to monitor datasets associated with the requirements of the AM plan and associated goals.

This additional support will be performed on an as-needed basis throughout each year of the 5-year plan term of this proposal.

This task will be executed primarily by Symbiont's project manager, with support from a project engineer, the GIS manager, and the publications specialist.

The following is a summary of the estimated annual hours included in this proposal for the various tasks.

Symbiont Service Provider	Task 1	Task 2	Task 3	Task 4	Total
Project Manager	22	20	34	28	104
Project Engineer	10		20	10	40
QA/QC Review	2			2	4
GIS/Data Manager	10		5	4	19
GIS/Data Engineer	30		40	12	82
Publication Specialist				40	40
InDepth Agronomy*			500		500
AM Plan Advisor**	8	4	10	6	28

Notes:

*InDepth Agronomy will provide services estimated at 500 hours for each of the first 3 years. The annual hours decreases to 400 hr/yr during years 4 and 5 of this project.

**The adaptive management plan advisor will provide services on an as needed basis, totaling 28 hours per year. These hours are shown as being divided by the four tasks, but these services will be used as needed, independent of the actual task.

Billing Rates

The following table provides the Village with the current billing rates for the main service providers associated with the proposed services.

Symbiont Service Provider	2020 Hourly Billing Rate
Project Manager	\$170
Project Engineer	\$105
QA/QC Review	\$240
GIS/Data Manager	\$185
GIS/Data Engineer	\$91
Publication Specialist	\$78
InDepth Agronomy	\$46
AM Plan Advisor	\$77

Symbiont's proposal includes a 2 to 3% annual adjustment to the hourly billing rate. Symbiont reserves to the right to use whatever personnel are needed to support this project. Symbiont will strive to use support providers that have similar hourly billing rates. The hourly rates shown do not include expenses. InDepth Agronomy will incur travel expenses (mileage) during periods when frequent meetings with farmers are necessary.

PROJECT TEAM

Symbiont has extensive resources available to devote to this project as needs arise. The following is a partial list of team members along with a brief description of the roles they will have.

Jon Butt, P.E. – Project Manager

Trisha Nigl – Project Engineer

Pat Carnahan, P.E. – QA/QC Manager

Ryan Eckdale-Dudley, GISP – GIS & Data Management Manager

Kyle Engelking – GIS & Data Management Engineer

Terry Dassow – Publication and Graphic Design Specialist

Steve Hoffman – Agronomist

Tom Steinbach – Technical Advisor on Adaptive Management Plan Implementation

Other design disciplines such as mechanical and civil will be used as needed from within Symbiont staff. Symbiont also has a construction division that could assist with the installation of pilot equipment or demonstration sites.

Jon Butt, P.E. – Project Manager

Mr. Butt is a project manager/engineer at Symbiont who has been working with the Village of Grafton since 2011. Jon led the Village's efforts over the past 5 years to evaluate the various alternatives for the Village to meet the new phosphorus limits. Jon was responsible for and the primary author of the Village's conditionally approved Adaptive Management Plan. With nearly 25 years of wastewater experience, Jon has developed over 15 Phosphorus Compliance Plans throughout Wisconsin covering treatment plant improvements, multiple discharge variance, and adaptive management.

Jon is uniquely qualified for this project and to serve as the project manager. It was his vision that guided the development of an Adaptive Management plan that provided the Village with much flexibility such as:

1. Developing a unique sampling plan that can permit the Village to collect more than one sample per month to assist with data collection
2. Incorporating flexibility in the plan to change the criterion for phosphorus based on the future DNR rules

Jon will be assisted by:

Trisha Nigl – Project Engineer

Trisha, a Chemical Engineer at Symbiont, will be most involved with data analysis and report generation. She will also provide the Village with a second point of contact. She has been working with Jon on data analysis since October 2019.

Pat Carnahan, P.E. – QA/QC Manager

Pat has over 30 years of municipal treatment design experience. Pat serves as Symbiont Vice President of operations and is responsible for developing all internal quality control and quality assurance procedures. Pat will be responsible for occasional audit of Jon's team to make sure the necessary documentation is in place for all work products.

Ryan Eckdale-Dudley, GISP – GIS & Data Management Manager

Ryan will lead the data management efforts for this project. Symbiont plans to use the Village's existing GIS as the platform for managing and distributing information on projects and test results through the action area and beyond. Ryan currently serves as the GIS designer for both the Village and Ozaukee County, giving him unique access to data. In addition, Ryan will lead efforts to annually document the installation of non-point source best management practices through the use of drone technology.

Kyle Engelking – GIS & Data Management Engineer

Kyle currently supports Ryan with both the Village and Ozaukee County's programs. Kyle will continue to provide support to Ryan and the Village.

Terry Dassow – Publication and Graphic Design Specialist

Terry currently supports Symbiont in producing whitepapers, brochures, and other technical and PR materials. She will assist with publishing both the yearly WDNR report and a less technical annual report that can be distributed to the public with information on the work the Village is supporting and the results of any projects. The annual report can be distributed either electronically or in print.

Steve Hoffman – Agronomist

Steve from InDepth Agronomy will lead the agricultural TP and TSS efforts. Steve is a degreed agronomist from the University of Platteville. He has been working with farmers throughout the State of Wisconsin with nutrient plans to help with crop production. Steve is currently serving as the program manager in Manitowoc and Fond du Lac Counties. Steve will soon also serve as a program manager for Ozaukee County. A copy of the signed contract between Ozaukee County and InDepth Agronomy follows. Steve will work with farmers to identify best management practices that make sense for farmers to implement, with assistance from the Village. Steve will provide the necessary modeling of any BMP to help quantify the reductions at each field.

Tom Steinbach – Technical Advisor on Adaptive Management Plan Implementation

Tom is the past superintendent for the City of Oconomowoc and will serve as an advisor on this project. Tom was responsible for leading the development of Oconomowoc's Adaptive Management Plan, which became the first approved plan in the State. Tom retired from the City of Oconomowoc in 2018 and is currently working part time as the program administrator for Oconomowoc's Adaptive Management Plan as a member of Tall Pines Conservancy. Tom will provide assistance and guidance to the project team as this project progresses.

Contract for Services – Project Manager For Ozaukee County Demonstration Farm Network*Contract between Ozaukee County and InDepth Agronomy*

Ozaukee County Land and Water Management Department will employ an individual to serve as the Demonstration Farm Network Project Manager. The NRCS Technical Contact will review the work performed by the Project Manager to determine compliance with Wisconsin NRCS quality assurance requirements. Approval of such performance shall be required prior to such work being charged against this agreement.

1. Parties, Contract and Administrators:

- a. This Contract is between Ozaukee County, whose seat of government and business address is 121 W. Main Street, Port Washington, WI, hereinafter referred to as "County" and Hoffman Crop Consulting, Inc./InDepth Agronomy, hereinafter referred to as "Provider".
- b. This Contract is effective July 2, 2020 through June 18, 2023.
- c. Contract Administrators.
 1. The County employee responsible for the day-to-day administration of this Contract shall be Andy Holschbach, Director, Ozaukee County Land & Water Conservation Department, 121 W. Main Street, Port Washington, WI 53073, 262-284-8271.
 2. Provider employee responsible for the day-to-day administration of this contract shall be Steve Hoffman, Managing Agronomist, Hoffman Crop Consulting, Inc./InDepth Agronomy, 8426 Borgwardt Lane, Manitowoc, WI 54220, 920-758-2988.

2. Provider shall perform the following services:

- a. Establish and maintain contact and communication with Demonstration Farm Network participants for the purpose of the operation and management of the project sites. Contact notes (i.e. date, contact name, and summary of discussion) are to be recorded on NRCS-CPA-06 form or equivalent.
- b. Establish and maintain contact and communication with area farmers, conservation organizations, and business representatives to build partnerships and coalitions for Demonstration Farm Network. Contact notes (i.e. date, contact name, and summary of discussion) are to be recorded on NRCS-CPA-06 form or equivalent.
- c. Collect field and cost data from Demonstration Farm Network sites and consolidate into a report for each project site. A report for each project site shall be provided in the spring and in the fall. Data collection shall include record crop productivity and yields, nutrient and pesticide applications, tillage activities, implementation of conservation activities, cost data, and other relevant site information.
- d. Coordinate and conduct Project Management Team & Technical Advisory Committee meetings. Conduct follow-up activities as a result of meetings.
- e. Provide monthly progress summary report of Demonstration Farm Network sites.
- f. Coordinate and conduct tours of Demonstration Farm Network sites.

- g. Coordinate, collaborate, and routinely communicate with the Parties and collaborating partners regarding project status updates.
- h. Develop a project work plan for new Demonstration Farm sites. The work plan will include an inventory of natural resource features associated with the project site and identify potential conservation practices for implementation.
- i. Coordinate activities of Demonstration Farm participants whereby participating farmers will attend and contribute during tours and events, provide and maintain access to sites, and collect and provide field and cost data.
- j. Install promotional/practice signs at Demonstration Farm sites.
- k. Plan and oversee installation of new conservation activities (non-USDA program funded) for demonstration purposes. Seek assistance from Land and Water Management Department and/or NRCS technical staff when necessary. Agreements shall be developed with Demonstration Farm Network participants for conservation activity implementation and maintenance. NRCS shall have final approval authority over conservation activity installations and planned extents.
- l. Coordinate and conduct conservation equipment demonstrations (field days) for area farmers and conservation professionals.
- m. Host conferences or workshops to present Demonstration Farm Network information.
- n. Present Demonstration Farm Network information at regional conferences.
- o. Coordinate with Project Management Team to regularly update webpage to highlight and showcase the Demonstration Farm Network.
- p. Prepare Annual Project Summary Publication. The publication shall document and summarize all activities conducted as part of Demonstrations Farm Network during the federal fiscal year and include a summary of data collections and evaluations.
- q. Prepare Final Project Summary Publication. The publication shall document and summarize all activities conducted as part of Demonstrations Farm Network and include a summary of data collections and evaluations.
- r. Assist Ozaukee County Land and Water Management Department with Demonstration Farm Budget administration. Assist in gaining NRCS approval for budget items requiring approval for work commencement and expenses. See attached Statement of Work.
- s. Assist in promotion of Demonstration Farm Network by providing information on Facebook, webpage, and other social media.
- t. Other duties as determined by the Parties.

Documentation Requirements (submit with SF-270): Detailed accounting report of the Demonstration Farm Network Project Manager work hours completed during the reimbursement request period. The report will identify the employee name, number of hours worked daily; daily work start, breaks, and end times; and description of work activities completed on a daily basis. The report must be signed the Project Manager, Ozaukee County Land and Water Management Department Director, and the NRCS Technical Representative. Reimbursement payments by NRCS shall only be approved for the tasks identified as major

duties as described above. The NRCS payment reimbursement shall be based on the actual cost expense incurred by Ozaukee County Land and Water Management Department for the employment of the Demonstration Farm Network Project Manager.

Payment for services: The billing rate for services shall be \$38.00 per hour, other costs of services may include mileage at the current federal rate per mile and meeting, meals and lodging expenses for pre-approved events. Total expenses for services are not to exceed \$40,000.00 per year. Total expenses for mileage, expenses for meetings, meals and lodging are not to exceed Budget for the contract period. The County will be billed once monthly.

3. Indemnity and Insurance:

- a. Provider agrees that it will at all times during the existence of this Contract indemnify the County against any and all loss, damages, and costs or expenses which County may sustain, incur, or be required to pay by reason of any person suffering personal injury, death or property loss resulting from actions of the Provider or its employees, or agents. However, provisions of this paragraph may not apply to liabilities, losses, charges, costs or expenses caused by the County.
- b. Provider agrees, in order to protect itself as well as the County under the indemnity provision set forth in the above paragraph, Provider will at all times during the term of this Contract, keep in force a liability policy of insurance issued by a company authorized to do business in the State of Wisconsin and licensed by the Wisconsin Office of the Commissioner of Insurance of a minimum of \$2,000,000 general aggregate.
- c. Automobile insurance is required in cases where the Provider provides transportation. Upon the execution of this Contract, Provider will furnish County with certificate of insurance from the insured of the existence of such insurance. In event of any action, suit, or proceedings against County upon any matter here are indemnified against, the County shall, within five (5) working days, cause notice in writing thereof to be given to Provider by certified mail, address to its post office address. Failure to provide timely notice will not relieve Provider of its obligations to indemnify the County.
- d. Provider agrees to provide the County with written verification of the existence of workers compensation insurance in an amount sufficient to meet statutory requirements.

4. Civil Rights Compliance:

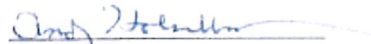
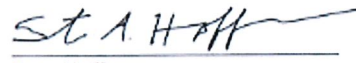
- a. Except as otherwise permitted under State or Federal law, Provider agrees not to discriminate in any matter on the basis of race, color, national origin, religion, sex, disability or age.
- b. Except as otherwise permitted under State or Federal law, no otherwise qualified person shall be excluded from employment, be denied the benefits of employment or otherwise be subjected to discrimination in any employment in any manner or term of employment on the basis of age, race, religion, color, sex, national origin, ancestry, disability, physical condition, developmental disability, arrest or conviction record, sexual orientation, political affiliation, marital status or military participation.

5. Re-negotiation:

- a. Re-negotiation of this Contract or any part thereof may occur after a thirty (30) day written notice in case of:

1. Change in volume of service;
 2. Change in Federal or State laws or regulation or court actions;
6. Contracts, Revisions, and/or Terminations:
- a. Failure to comply with any part of this Contract may be cause for revision, suspension or termination.
 - b. County and Provider must agree on revisions of this Contract by any addendum signed by the authorized representatives of both parties.
 - c. Provider shall notify County whenever it is unable to provide the required quality or quantity of services. Upon such notification, County and Provider shall determine whether such inability will require a revision or cancellation of the Contract.
 - d. This Contract may be terminated by a 90 day written notice of either party.
7. A valid Wisconsin driver's license is required.
8. No employment relationship or partnership between provider or the Demonstration Farm Network Project Manager and the County is created by virtue of this agreement.
9. Governing Law: The laws of the State of Wisconsin govern this Contract and venue shall lie in the Circuit Court for Ozaukee County, Wisconsin.

BY: OZAUKEE COUNTY

BY: HOFFMAN CROP CONSULTING,
INC./INDEPTH AGRONOMY
Andy Holschbach
Director, Land & Water Management Department
Steve Hoffman
Managing Agronomist7-2-20
Date7/7/2020
Date

PROJECT SCHEDULE

The coronavirus has created considerable uncertainty with respect to business as usual. Under normal circumstances, Symbiont would propose the following schedule for implementing this project. Although Symbiont has no way of knowing the future impact of the coronavirus, we will strive to meet the dates proposed below. Significant business interruptions by the coronavirus may require the schedule to be extended. Symbiont will promptly communicate any delays due to the coronavirus as soon as they are foreseeable.

Symbiont has included a preliminary project schedule for the Village of Grafton's review and consideration. The following schedule outlines major tasks, design milestones, and review periods based on Symbiont's current understanding of the project.

Task	Date
Public Works Committee Approval (Tentative)	September 14, 2020
Fully Executed Contract Received	October 1, 2020
Kickoff Meeting	Schedule the week of October 12, 2020
Review of Current Farm Program	Completed by November 1, 2020

Beginning November 1, 2020, Symbiont will divide into various teams that will coordinate with the Village of Grafton to develop unique schedules for:

- River monitoring and data collection in 2021
- Non-point source reductions within the Village of Grafton 2021 or later
- Agricultural reductions

It is anticipated that the agricultural reduction team will begin immediately. The river monitoring team can wait until February 2021, if desired, to begin planning for 2021. The Village of Grafton will take the lead on planning for any non-point source reductions throughout the Village with Symbiont participating in any planning meetings. All teams will work to support the Village of Grafton's tentative annual reduction goals, as outlined in Table 1-4 in the background section.

PROJECT COST

Symbiont will execute the tasks outlined in this proposal over five years, beginning October 2020 and terminating in September 2025, on a time and materials basis not to exceed \$365,300.

Symbiont understands that the Village of Grafton operates with an annual budget. The following table is an estimate of the annual labor cost and expenses that we anticipate; however, Symbiont reserves the right to shift project funds from one year to the next as needed.

Calendar Year	Estimated Cost
2020*	\$19,325
2021	\$75,925
2022	\$72,225
2023	\$72,725
2024	\$70,875
2025**	\$54,225
Total	\$365,300

Notes:

*The fee shown for 2020 covers October through December (3 months).

**The fee shown for 2025 covers January through September (9 months)

This information is being provided for budgeting purposes, as it is difficult to foresee the services that may be needed. The Village and Symbiont will review the projected scope of services on an annual basis and make adjustments as needed. If the services increase beyond those included in this proposal, a written amendment will be prepared and bought before the Public Works Board for review and approval. This review process will occur in July and, if necessary, the Public Works Board will be advised of adjustments at the August meeting to provide time to adjust budgets.

CLARIFICATIONS

The amount invoiced each month will be based on the services provided to the Village of Grafton and any expenses incurred.

The costs in this proposal exclude any sales and use tax, goods and services tax, value added tax, or any other similar taxes. Upon award of the contract from the Village of Grafton, Symbiont will request that the Village of Grafton provide an exemption certificate for the project. The final cost of the project will increase to include the cost of all applicable taxes if exemptions do not apply. This proposal is valid for 30 days from the date on the proposal.

Any engineering level of effort described within this proposal is limited to preliminary engineering, with the exception of agricultural best management practices. Symbiont will help the Village of Grafton identify projects that can be executed within the Village or at the wastewater treatment plant. Final design, bid documents, final plans, or installation and construction of any preliminary design is not included with in the proposal, but are available for an added fee. The Village of Grafton is responsible for any testing and sample collection.

Symbiont has assumed that a minimal level of support is needed for grant applications. Symbiont has not included more than 10 hours per year for grant application support. Symbiont has not included any construction-related services, except for services for agricultural field improvements, and any additional construction-related services can be provided for an added fee, if necessary.



TERMS AND CONDITIONS

Provided within this proposal are our Terms and Conditions of Agreement (Form S-1 08-2019), which are an integral part of our contract for professional services. Please indicate your acceptance of this proposal (and the Terms and Conditions herein) by having an authorized Village of Grafton representative sign one copy and return it to Symbiont.

We appreciate the opportunity to offer our professional engineering services. Please contact us if you have any questions regarding this proposal. We look forward to working with you on this and future projects.

Sincerely,

SYMBIONT®

A blue ink signature of Jonathan R. Butt, written in a cursive style.

Jonathan R. Butt, P.E.
Project Manager

SYMBIONT®

A blue ink signature of Patrick W. Carnahan, written in a cursive style.

Patrick W. Carnahan, P.E.
Vice President

PROPOSAL NO. 36258 - REV. 1 ACCEPTED BY:

CLIENT: _____

SIGNATURE: _____

TITLE: _____

DATE: _____

Symbiont considers the project approach, design, pricing, data, and other business considerations contained in this proposal to be proprietary and confidential business information to be used solely for the purpose of evaluating the proposal. This document and the information contained herein shall not be used for any purpose other than as stated above and shall not be used, duplicated, or disclosed to any other party without Symbiont's prior written consent.

