



Projects and Practices Application

Grant Name - Blue Lake Priority Action Plan

Grant ID - C18-7714

Organization - Isanti SWCD

Allocation	Projects and Practices 2018	Grant Contact	Tiffany Determan
Total Grant Amount Requested	\$251,546.00	County(s)	Isanti
Grant Match Amount	\$62,887	12 Digit HUC(s)	070102070502
Required Match %	25%	Applicant Organization	Isanti SWCD
Calculated Match %	25%	Application Submitted Date	
Other Amount	\$2,310		
Project Abstract	<p>Recent monitoring has detected a declining trend in the water quality of Blue Lake which was only recently identified as a protection lake in the Rum River WRAPS. Furthermore, 2016 monitoring indicates that water now fails to meet the state standard by 2 µg/L for phosphorus and 4 µg/L for chlorophyll-a.</p> <p>The SWCD completed a Subwatershed Assessment (SWA) for the lake in 2016 primarily because the lake water quality was so close to exceeding standards. The assessment uses the standardized Metro Conservation District SWA protocol which targets and prioritizes projects based on cost effectiveness and pollutant removal. The assessment was broken into two components, one raking 12 projects in the direct watershed and the other ranking 97 projects in the rural watershed.</p> <p>This proposal will install six of the top projects identified for the direct watershed. These projects are two bioretention basins and a sump to treat runoff from right-of-ways in Spencer Brook Township, a gully and shoreline repair to treat erosion and runoff from a public access in Stanford Township, a sand filter to capture suspended particulate phosphorus released from a channelized wetland in the southeast (SE) inlet on private</p>		

	<p>campground property, and approximately 10,500 square feet of near-shore stormwater reduction practices to treat runoff and erosion from high priority parcels. In addition to these projects, our staff plans to engage residents, officials and rural landowners in order to promote a sustainable culture of lake stewardship. A significant amount of work to prepare for this proposal has been completed; projects have been prioritized, a feasibility study for the SE inlet was completed, preliminary plans have been developed, and the partners are ready to rock!</p> <p>The in-lake phosphorus goal set for the lake in the Rum WRAPS is 31 µg/L. This reflects a 321 pound reduction in watershed phosphorus loading. The proposed projects reduce phosphorus by 95 lbs. annually.</p>
<p>Proposed Measurable Outcomes</p>	<p>The most recognizable measurable outcome of this project is a 95 lb annual reduction of TP. The outcome results in a 10% TP reduction. Additional reduction: 29,044 lbs. of suspended solids.</p>

Narrative

Questions & Answers
<p>Does your organization have any active CWF grants? If so, specify FY and percentage spent. Also, explain your organization's capacity (including available FTEs or contracted resources) to effectively implement additional Clean Water Fund grant dollars.</p>
<p>The SWCD has one 2017 Community Partners Grant. Over 50 percent of the grant has been spent and we project that the entire grant will be encumbered before the end of summer, 2017!</p> <p>The SWCD will allocate time to both the technician and manager for work associated with this grant. That being said, the SWCD only has two staff. We do have existing relationships with vendors (used to develop the designs for this proposal) and plan to utilize new contracts for technical assistance. Additionally, we are planning to partner with Mille Lacs SWCD to share an agricultural outreach technician who will focus on rural landowner outreach—as mentioned in the abstract—this technician will be paid for with an MDA grant. We will have the capacity to successfully implement the projects in this grant application.</p>
<p>Water Resource: Identify the water resource the application is targeting for water quality protection or restoration.</p>
<p>Blue Lake (30-010700), is a relatively deep lake located in south western Isanti County, MN. Recent monitoring conducted by the SWCD has detected a declining trend in the water quality of Blue Lake which was only recently identified as a protection lake in the Rum River WRAPS. Furthermore, 2016 monitoring indicates that water quality exceeds the state standard for deep lakes by 2 µg/L for phosphorus and 4 µg/L for chlorophyll-a. Recent conversations with the MPCA indicate that the lake will likely be placed on the 2018 Impaired Waters List for Excess Nutrients.</p>

Questions & Answers

Overall Project Description 1. (5 points) : A) What nonpoint pollution concerns will be the focus of this application and how do you intend to address those concerns? B) Describe how the resource of concern aligns with at least one of the statewide priorities referenced in the “Projects and Practices” section of the RFP. C) Describe the public benefits resulting from this proposal from both a local and state perspective.

The primary nonpoint pollution concern is phosphorus. The following two sources contribute large amounts of phosphorus to the lake and can be efficiently mitigated: 1) stormwater runoff from residential/developed areas and 2) suspension of fine organic material (particulate P) within a channelized wetland.

This project addresses phosphorus in stormwater runoff by installing targeted and efficient stormwater reduction practices at locations of concentrated overland flow. This project addresses phosphorus loading from the wetland by installing a sand filter that will remove particulate phosphorus released from the wetland bottom—not upland sources—during high flow conditions.

This project aligns with the statewide priority concern #1.

While Blue Lake is not listed on the 2016 impaired waters list, discussions with the MPCA indicate that it will be added to the 2018 list. 2016 monitoring indicates that TP and Chl-a hover just above the state standards.

The implementation of this proposal is the first action to restoring the recreational use of this locally and regionally popular lake. Blue Lake is heavily used by its 145+ lakeshore owners and traveling boaters because of its “good” water quality. Water quality that supports a vibrant fishery and fills this lake’s two accesses most every summer weekend.

The public will benefit financially from this project. At this point Blue Lake is close to meeting water quality standards. It’s generally more cost-effective to prevent water quality degradation than to restore degraded waterway. Restoring water systems once they have become severely impaired is often a lengthy and costly process, we want to avoid this! Furthermore, the practices selected were rated the most cost-effective for phosphorus removal. By spending a relatively small amount of money now, we can restore and maintain a financial asset that will continue to pay dividends to our local and regional community for years to come.

Relationship to Plan: 2a. (15 points) Describe why the water resource was identified in the plan as a priority resource. For the proposed project, identify the specific water management plan reference by plan organization plan title, section, and page number. In addition to the plan citation, provide a brief narrative description that explains whether this application fully or partially accomplishes the referenced activity.

Blue Lake is a priority lake for the following reasons: 1) the water quality is close to state standards; 2) the lake is rated one of the most popular recreational lakes in Isanti County; 3) Lake residents, townships and the Lake Improvement District have taken a proactive role in the restoration of the lake.

The Isanti County Local Water Management Plan (2006-2015) is currently under revision and was last updated in 2012. The Isanti SWCD adopted County Water Plan as its annual plan. This specific proposal was developed in conjunction with the Water Plan Task Force and County as a more focused project based off of the current plan content as follows:

Isanti Co Water Plan: Sec. III, Priority 1, Obj. A, pg 2: Guide new development with comprehensive planning, accurate information, and

Questions & Answers

consideration for natural resources.

The following are comprehensive plans that provide up-to-date and accurate information-
Blue Lake Subwatershed Assessment: Ex. Summary, pg 9: Urban Project Ranking.
Rum River WRAPS, 2017 pg 27: "short term priority" & pg 43- Blue Lake implementation strategies.

Our current water plan states that we should utilize such sources while we plan systems and conserve resources. Therefore, it is a resource we said we would use while guiding and maintaining developed areas. Both plans call for every project in this grant. The projects in this grant fully accomplish this objective--and more--via mitigating the impact of development through a comprehensive plan that has accurate information and a strong consideration for natural resources.

The projects selected for this application were prioritized in the assessment first and foremost because of their cost-effectiveness (points of pollution reduced per dollar spent). Other factors taken into consideration when prioritizing included the projects educational value, visibility, landowner willingness and construction timing.

Relationship to Plan: 2b. Provide web links to all referenced plans.

Isanti County Water Plan (2006-2015):

http://www.co.isanti.mn.us/media/userfiles/subsite_93/files/Zoning/Ordinances/Table%20of%20Contents%20Water%20Plan%202006-2015.pdf

Blue Lake Subwatershed Retrofit Assessment, 2016

http://www.isantiswcd.org/images/Isanti/projects/Blue_SWA_Executive%20Summary.pdf

Rum River WRAPS, 2017

<https://www.pca.state.mn.us/water/watersheds/rum-river>

Targeting Procedure: 3. (15 points) Describe the methods used to identify, inventory, and target the most critical pollution sources or threats (root cause) and describe any additional efforts that will be completed prior to installing the projects or practices identified in this proposal.

All projects here were identified, prioritized and targeted using the standardized Metro Conservation District SWA Protocol. The process includes: 1) computer scoping, 2) Field investigations, 3) BMP treatment ranking and 4) promotion/education. Monitoring at each of the four lake inlets was also used to target practices and quantify nutrient loading, particularly for the SE Inlet Sand Filter. This process identified these projects as cost-effective, in relation to phosphorus removal, within the direct watershed. After completing the process described above, SWCD staff attended township meetings and held a workshop in order to garner partner buy-in of the projects.

The majority of the targeting work was completed up-front of this grant application. The following list describes work that must be completed

Questions & Answers

prior to installing the projects (NOTE: targeting and inventorying has been completed):

- 1) Develop contracts, communicate with townships and coordinate bid processes and contractor selection before installing the Spencer Brook Township bio retention and sumps, and the Stanford Township gully and shoreland restoration
- 2) Coordinate with contractors to finalize designs, apply for permits, and complete a request for bids and contractor selection before installing the SE Inlet sand filter
- 3) Conduct individual site assessments, select final project sites, design practices, develop contracts before installing the near-shore stormwater practices.

Targeting: 4. (10 points) A) How does this proposal make progress toward an overall groundwater, watershed protection, and/or restoration strategy being implemented by your organization and your partners? Listing an activity in a plan does not necessarily constitute an overall strategy. B) Describe activities other than those in this proposal that you and other partners have or will implement that affect the same water resource including but not limited to: other financial assistance or incentive programs, easements, regulatory enforcement, or community engagement activities that are indirectly related to this proposal.

The SWCD uses the Water Plan along with the best available information—a combination of the locally approved Blue Lake SWA and the State approved Rum River WRAPS—as a guides to its overall watershed restoration/protection activities. This project will make progress towards achieving the goals set in both plans because the six projects included in this proposal are explicitly identified as critical phosphorus reducing implementation actions. Upon implementing these projects we will have completed 50% of the projects for the direct watershed! Furthermore, the WRAPS specifically listed Blue Lake as a short-term priority because it was near impairment at the time of assessment (i.e. exceeding phosphorus but not chl-a or Secchi standards). This project will kick-off the high-impact projects that will make huge progress towards water quality goals!

Activities not in this proposal that have or will be implemented:

- The SWCD board moved to target all of its 2017 State Cost Share to complete near-shore stormwater practices on Blue Lake. As a result, two landowners will be implementing projects in late 2017/early 2018.
- The County Zoning Ordinance requests that landowners, obtaining building permits in the shoreland area, work with the SWCD to develop a stormwater management plan. The SWCD assisted two landowners on Blue Lake with stormwater management plans in 2016.
- SWCD staff has conducted four lake stewardship outreach activities in the watershed. These activities led to this grant application. We plan to continue these efforts.
- Isanti SWCD and Mille Lacs SWCD will share an agricultural outreach technician that will work in the Blue Lake Watershed. This position will be funded by an MDA grant.

Questions & Answers

Measureable Outcomes: 5. (10 points) A) What pollutant(s) (For groundwater: bacteria, untreated sewage, nitrate, pesticides, etc.; For surface water: dissolved phosphorus, nitrogen, sediment, etc.) does this application specifically address? B) Has there been a pollutant reduction goal set (via TMDL or other study) in relation to that pollutant or the water resource that is the subject of this application? C) If so, please state that goal (as both an annual pollution reduction AND overall percentage reduction, not as an in-stream or in-lake concentration number) and identify the process used to set the goal. If no pollutant reduction goal has been set, describe the water quality trends associated with the water resource or other management goals that have been established. D) For protection projects, indicate measurable outputs such as acres of protected land, number of potential contaminant sources removed or managed, etc

This application specifically addresses total phosphorus (particulate and dissolved).

An in-lake phosphorus goal was set in the Rum River WRAPS. The protection goal was not set as an annual pollutant reduction; it was set as an in-lake water quality goal of 31µg/L. After this goal is met, Blue Lake would comfortably meet state standards.

The SWCD, with assistance from Wenck Associates, created a lake response model using BATHTUB. This model translated the protection goal into an annual pollution reduction and overall percent reduction goal: 312 lb/yr phosphorus reduction or a 35% reduction.

Measureable Outcomes: 6. (10 points) A) Describe the effects this proposed project will have on the root cause of the most critical pollution problems or threats. B) Please quantify the water quality benefits that would result from this proposal. Where applicable, identify the annual reduction in pollutant(s) that will be achieved or avoided for the water resource after this project is completed?

Dissolved and particulate P loading via stormwater runoff and channelized wetlands has been identified as root cause of pollution. The projects identified in this proposal collectively reduce phosphorus by 95 pounds per year and will result in a 10% reduction in phosphorus loading. This is significant considering that the only a 35% reduction is needed to meet goals.

The proposed project drainage area has no stormwater BMPs so large first-cut pollutant reductions are possible.

Spencer Brook Township bioretention and sumps will engender infiltration, treat stormwater in areas of concentrated overland flow and mitigate sediment-bound P. These practices will reduce phosphorus by 1.5 lbs. and suspended solids by 337 lbs. annually.

Stanford Township gully and shoreland restoration will stabilize a gully formed by overland flow and reduce sediment-bound P by stabilizing the eroding bank at the water's edge. These practices will reduce phosphorus by 6.2 lbs. and suspended solids by 13,297 lbs. annually.

SE Inlet Sand Filter: Based on modeling results and site observations, watershed phosphorus loads were low but the SE inlet's phosphorus levels were high. Therefore, phosphorus inputs are driven by the suspension of fine, phosphorus rich, organic material within the channelized wetland. This project will trap the fine particulate. The practice will reduce phosphorus by 81 lbs. and suspended solids by 9,885 lbs. annually.

Near-shore stormwater practices will engender infiltration, treat stormwater in areas of concentrated overland flow and reduce sediment-bound P. These practices will reduce phosphorus by 5 lbs. and suspended solids by 5,525 lbs. annually.

Questions & Answers

Measureable Outcomes: 7. (10 points) Will the overall project have additional specific secondary benefits, including but not limited to measured or estimated hydrologic benefits, enhancement of aquatic and terrestrial wildlife species, drinking water protection, enhancement of pollinator populations, or protection of rare and/or native species? If so, specifically describe, (quantify if possible), what those benefits will be.

The secondary benefits of the project include increased groundwater infiltration, drinking water protection, healthier aquatic and terrestrial habitat, and enriched partnerships. Approximately 700 sq. ft. of bioretention and 10,500 sq. ft. of near shore stormwater reduction practices will be placed at areas of concentrated overland flow. These practices will allow for increased groundwater infiltration that will also protect drinking water of rural landowners, all of whom get their drinking water from private wells. Native plants will be used in all stormwater treatment practices. These native plants offer habitat for terrestrial and aquatic wildlife—including pollinators. Corresponding water health improvements will result from healthier habitat for aquatic and terrestrial wildlife. Most importantly, this project will strengthen the existing partnerships between the SWCD, BLID, townships and landowners. These partnerships will undoubtedly lead to future conservation work in Isanti County.

Cost Effectiveness: 8. (15 points) Describe why the proposed project(s) in this application are considered to be the most cost effective and reasonable means to attain water quality improvement or protection benefits within the proposed project area. Has any analysis been conducted to help substantiate this determination? Factors to consider include, but are not limited to: BMP effectiveness, timing, site feasibility, practicality, and public acceptance. If your application is proposing to use incentive payments to landowners, please include incentive rates and the rationale why this approach is seen to have a high cost-benefit.

The Metro SWA protocol compares costs and pollutant reductions, in order to calculate cost effectiveness of each project. 12 projects within the direct watershed were selected for ranking, all are considered cost-effective. When selecting the proposed projects from the list, we also considered educational value, visibility, landowner willingness and construction timing.

The subwatershed assessment calculated the cost per-pound of phosphorus reduced for each project: \$150/pound for the SE Sand Filter; \$237/pound for the gully/shoreline restoration; \$280/pound for the near-shore practices; \$906/pound for the rain gardens and \$1,700/pound for the sump. (Note: cost effectiveness for engineering projects were refined from the subwatershed assessment numbers by project engineers)

We have determined the feasibility and design of the SE inlet sand filter, and we have finalized the two bio-retention basins, gully and shoreline repair/restoration designs on township property.

There is public acceptance of the projects. Both townships have agreed to install the projects, the private campground owners have agreed to partner with the BLID to install and maintain the sand filter and 18 lakeshore owners in priority areas have voiced their commitment to install and maintain near-shore stormwater reduction projects.

Questions & Answers

Project Readiness: 9. (8 points) Describe steps and actions already taken to ensure that project implementation can begin soon after grant award. This may include: preliminary discussions with permitting authorities (if applicable) and the status of any state, federal or local permits that may be required for the project (Conditional use, NPDES, WCA, EAW, USACE, Public Waters, archeological surveys, etc.). Also, describe any preliminary discussions with landowners/occupiers, status of agreements/contracts, contingency plans, and other project development activities to date that will ensure a smooth start to the project and minimize administrative or other critical delays.

SWCD allocated \$29,585 in 2016 for technical and professional engineering assistance in preparation for this proposal (combination of FY17 Capacity funds, MCD ETA funds and BLID funds). This work resulted in landowner buy-in and project readiness. We have completed a feasibility study and concept design for the SE inlet sand filter, and designs for the two bioretention basins, gully and shoreline erosion restoration on township property are complete. The township has elected to design and install the sump as a project match. The work we completed in 2016 also included face-to-face discussions and workshops with the townships, private campground owners and lakeshore property owners. These discussions led to buy-in and acceptance of the proposed projects.

Work specific to each project is described below:

- 1) Spencer Brook Township Bioretention and Sumps: SWCD staff have attended township meetings to gain buy-in and funding support; site surveys (i.e. elevations and utilities) have been completed; designs are complete.
- 2) Stanford Township Gully and Shoreland Repair: SWCD staff have attended township meetings to gain buy-in and funding; site surveys (i.e. elevations and utilities) have been completed; designs are complete.
- 3) SE Inlet Sand Filter: Meetings have been held with landowners, including upstream landowners, in order to gain buy-in; meetings held with BLID for funding support (match and maintenance); feasibility study and preliminary designs have been completed by Wenck Associates. The SWCD has discussed sand filter permitting with Isanti County Zoning and MN DNR.
- 4) Blue Lake Near-shore Stormwater Practices: held meetings, with high priority landowners, that resulted in 18 signed interest letters. Discussed design work opportunities with local contractors.

Project Readiness: 10. (2 points) Newsletters, signs and press releases are standard communication tools. In addition to these basics, describe additional project activities that would be added to the grant work plan aimed at engaging your local community on the need, benefits, and long term impacts of this project.

Several components of community engagement, focused on rural lakeshore residents and officials, are included in this application. The goal of engagement is to promote a sustained culture of conservation not only in the Blue Lake Watershed but throughout the entire county.

Rural Community: Minimal funds in this grant will be directed to rural outreach because we will share an agricultural outreach technician with Mille Lacs SWCD. The position will be paid for using an MDA grant. However, within this proposal, we do plan to use direct mailings and an outreach event to actively engage rural landowners. Efforts will be focused on the SE inlet watershed to promote enrollment in federal conservation programs and start a waiting list for future conservation projects.

Lakeshore, Near Lake Properties and BLID: We will host up to three lakeshore stewardship project installation events and attend three BLID

Questions & Answers

meetings to explain project benefits, correct installation and showcase completed projects. Additionally, a COLA has formed in Isanti County. The COLA has voiced their interest in SWCD hosted workshops and tours that inform members on stormwater issues, BMPs, and water quality. This group will help the SWCD meet our engagement goals. Township and County Officials: We will attend at least two township meetings and an association of townships meeting to showcase the results of the projects. Our goal is to entice other townships within the county to work with the SWCD. Additionally, the SWCD plans to host a tour for County Officials in 2018 and 2020; we plan to visit these projects during the tour!

The Constitutional Amendment requires that Amendment funding must not substitute traditional state funding. Briefly describe how this project will provide water quality benefits to the State of Minnesota without substituting existing funding.

Traditional funding has not been locally available for the planning and design of large-scale stormwater retrofit projects in this community. Funding such as the 100K Capacity Grants could be used for these types of projects; however, the SWCD relies on the Capacity Grants to cover costs associated with staffing. Therefore, we need this grant to implement these projects—no other option exists.

Application Budget

Activity Name	Activity Description	Category	State Grant \$ Requested	Activity Lifespan (yrs)
Urban Stormwater Projects	Includes stormwater and sediment reduction practices (2 bio-retention and a sump) in Spencer Brook Township ROWs within the direct watershed.	URBAN STORMWATER MANAGEMENT PRACTICES	\$22,593.00	10
SE Sand Filter	Costs to install the SE Sand Filter to reduce particulate phosphorus from the SE inlet channelized wetland.	SPECIAL PROJECTS	\$112,000.00	30
Community Engagement and Education	Costs associated with an outreach mailing and the hosting of a workshop and tour.	EDUCATION/INFO RMATION	\$1,000.00	3
Technical Assistance	SWCD staff time to provide TA on all projects. This line item also includes contracting with vendors for TA required for successful design, permitting and oversight.	TECHNICAL/ENGINEERING ASSISTANCE	\$39,000.00	3

Activity Name	Activity Description	Category	State Grant \$ Requested	Activity Lifespan (yrs)
Near Shore Stormwater/Erosion BMPs	Includes 10,500 square feet of near-shore stormwater and erosion control on (private properties) and a gully and shoreline erosion reduction project on Stanford Township property.	STREAMBANK OR SHORELINE PROTECTION	\$73,648.00	10
Administration	SWCD staff time to administer and report on grant.	ADMINISTRATION /COORDINATION	\$1,512.00	3
Project Development	Covers SWCD additional outreach to priority landowners and final ranking of individual near-shore practices.	PROJECT DEVELOPMENT	\$1,793.00	3

Proposed Activity Indicators

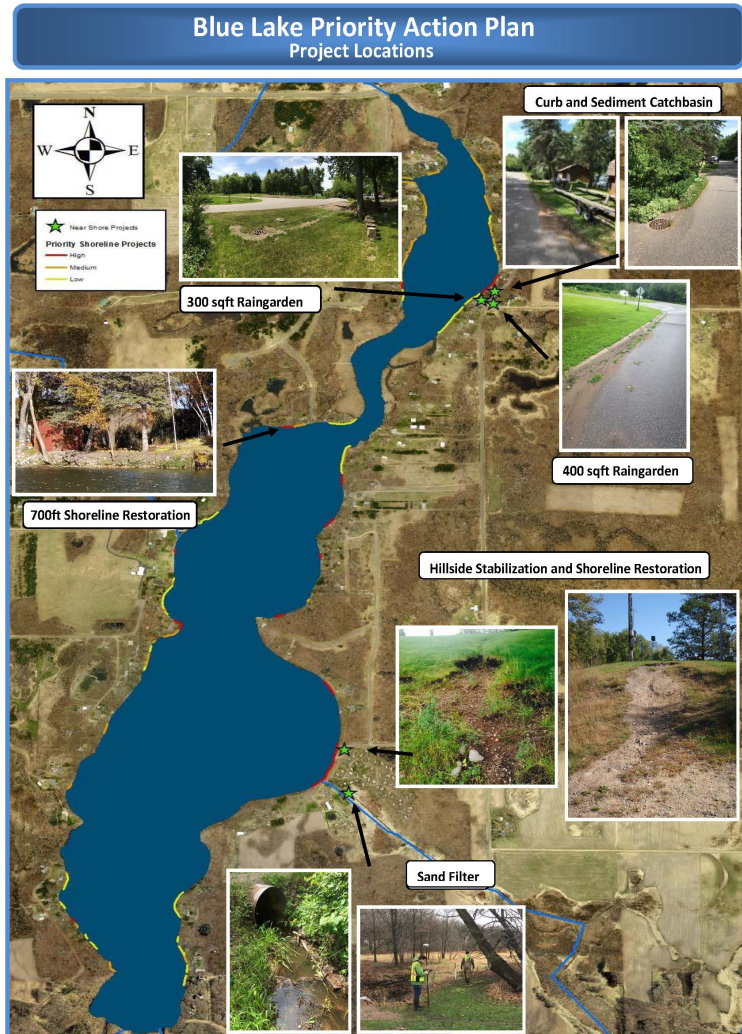
Activity Name	Indicator Name	Value & Units	Waterbody	Calculation Tool	Comments
Near Shore Stormwater/Erosion BMPs	PHOSPHORUS (EST. REDUCTION)	11 LBS/YR	Blue Lake	WINSLAMM	
SE Sand Filter	PHOSPHORUS (EST. REDUCTION)	81 LBS/YR	Blue Lake	Other	modeling completed by Wenck Associates
Urban Stormwater Projects	PHOSPHORUS (EST. REDUCTION)	1.5 LBS/YR	Blue Lake	WINSLAMM	
Near Shore Stormwater/Erosion BMPs	SEDIMENT (TSS)	9.4 TONS/YR	Blue Lake	WINSLAMM	
Urban Stormwater Projects	SEDIMENT (TSS)	.17 TONS/YR	Blue Lake	WINSLAMM	
SE Sand Filter	Total Suspended Solids (TSS)	4.9 Mg/L	Blue Lake	WINSLAMM	

Activity Details

Activity Name	Question	Answer
Administration	Are you interested in applying for CWP Loans for this project?	No
Administration	Dollar amount requested for Ag BMP Loan Program:	0
Technical Assistance	Are you interested in applying for CWP Loans for this project?	No
Technical Assistance	Dollar amount requested for Ag BMP Loan Program:	0
Near Shore Stormwater/Erosion BMPs	Are you interested in applying for CWP Loans for this project?	No
Near Shore Stormwater/Erosion BMPs	Dollar amount requested for Ag BMP Loan Program:	0
Urban Stormwater Projects	Are you interested in applying for CWP Loans for this project?	No
Urban Stormwater Projects	Dollar amount requested for Ag BMP Loan Program:	0
SE Sand Filter	Are you interested in applying for CWP Loans for this project?	No
SE Sand Filter	Dollar amount requested for Ag BMP Loan Program:	0
Community Engagement and Education	Are you interested in applying for CWP Loans for this project?	No
Community Engagement and Education	Dollar amount requested for Ag BMP Loan Program:	0

Activity Name	Question	Answer
Project Development	Are you interested in applying for CWP Loans for this project?	no
Project Development	Dollar amount requested for Ag BMP Loan Program:	0

Application Image



Map Image

