

Workplan / Grant Application / Project Summary Report  
**Reducing Phosphorus Loads to Lake Betsy by  
 Protecting Willow Creek**

Submitted by: **Clearwater River WD WSHED**

Grant Fund Type: CWF Runoff Reduction

Fund Year: 2010

<i>Total Grant Amount:</i>	<b>\$70,900.00</b>	<i>Amount Budgeted for this Workplan:</i>	<b>\$73,151.36</b>	<i>Amount Spent for this workplan:</i>	<b>\$62,453.52</b>	<i>Amount Not Spent on this workplan:</i>	<b>\$10,697.84</b>
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**BMP Detail Summary**

Number of BMP's Installed	BMP Name	Shape Type	Linear Ft.	Total Acres	Total Mapped BMPs	Soil Loss Reduction Tons/Yr	Sediment Reduction Tons/Yr	Phosphorus Reduction Lbs/Yr
1	Storm Water Retention Basins - 155M	BMP Point			1	0.00	0.00	244.00
Total # installed BMPs: 1						0.00	0.00	244.00
Total # mapped BMPs: 1						Tons/Yr	Tons/Yr	Lbs/Yr

Initiative Name:

**Reducing Phosphorus Loads to Lake Betsy by Protecting Willow Creek**

Initiative Name: **Reducing Phosphorus Loads to Lake Betsy by Protecting Willow Creek**

Initiative Type: Technical and Engineering

Year: 2010

Description

Design a stormwater management system to capture and re-use (infiltrate or evapotranspire) stormwater runoff from the City of Kimball. The target design event is the 1.5 inch event for a 428 acre drainage area in and around Kimball. This will reduce phosphorus loads Lake Betsy, and runoff volumes to Willow Creek improving groundwater recharge in the area of the trout stream and reducing temperatures improving habitat.

Actual Results

A stormwater management system to capture and re-use (infiltrate or evapotranspire) stormwater runoff from the City of Kimball was designed and installed. The target design event is the 1.5 inch event for a 428 acre drainage area in and around Kimball. This will reduce phosphorus loads Lake Betsy, and runoff volumes to Willow Creek improving groundwater recharge in the area of the trout stream and reducing temperatures improving habitat. The project's construction will be completed in the spring.

The system was designed by Wenck Associates, Inc.

Comments

<u>FUND(s)</u>	<u>Budgeted</u>	<u>Approved</u>	<u>Spent</u>	<u>First Spend Date</u>	<u>Last Spend Date</u>
1. Local Match Willow Creek Design CRWD	30,000.00	30,000.00	30,000.00	3/10/10	11/10/10
2. 2010 - Runoff Reduction - Clearwater River WD (WSHED)	10,000.00	10,000.00	9,767.53	11/10/10	4/13/11
<b>Totals:</b>	<b>40,000.00</b>	<b>40,000.00</b>	<b>39,767.53</b>		

L&W Project Name:

**Reducing Phosphorus Loads to Lake Betsy by Protecting Willow Creek**

BMP(s)

1. Storm Water Retention Basins-155M *Mapped = Yes*

POLLUTION REDUCTION ESTIMATE(s)

-Water Pollution (Reduction Estimates)  
Phosphorus (est. reduction) 244.00 Lbs/Yr

<u>FUND(s)</u>	<u>Budgeted</u>	<u>Approved</u>	<u>Spent</u>	<u>First Spend Date</u>	<u>Last Spend Date</u>
1. City of Kimball O&M Match	12,000.00	0.00	0.00		
2. 2010 - Runoff Reduction - Clearwater River WD (WSHED)	60,900.00	60,900.00	50,434.63	9/22/10	12/8/10
3. City of Kimball - Additional Monies to Raise Hockey Rink	0.00	3,500.00	0.00		
<b>Totals:</b>	<b>72,900.00</b>	<b>64,400.00</b>	<b>50,434.63</b>		

Initiative Name: **Reducing Phosphorus Loads to Lake Betsy by Protecting Willow Creek**

Initiative Name: **Reducing Phosphorus Loads to Lake Betsy by Protecting Willow Creek** Initiative Type: Admin/Coordination

Year: 2010

Description

Oversee and Report on the Willow Creek Stormwater Project.  
 This project will reduce phosphorus loads Lake Betsy, and runoff volumes to Willow Creek improving groundwater recharge in the area of the trout stream and reducing temperatures improving habitat.

Actual Results

During the project, multiple contacts were made via phone, e-mail, and on-site visits by CRWD staff to ensure timely completion of the project. On-site visits with city council members, as well as attendance at city council meetings, were conducted. Contact with Xcel Energy, MN DOT, MN DOH, MN DNR, Stearns County SWCD, local lions club, and District engineers in the forms of phone calls, e-mails, and visits (on- and off-site) regarding the project was completed. Grant reporting, project accounting, survey staking, and various small tasks were also done by staff. This project will be completed this spring.

Comments

<u>FUND(s)</u>	<u>Budgeted</u>	<u>Approved</u>	<u>Spent</u>	<u>First Spend Date</u>	<u>Last Spend Date</u>
1. 2010 - Runoff Reduction - Clearwater River WD (WSHED)	2,251.36	2,251.36	2,251.36	3/10/10	4/13/11
<b>Totals:</b>	<b>2,251.36</b>	<b>2,251.36</b>	<b>2,251.36</b>		

**Program Specific Workplan Items**

*Needed TMDL Load Reduction (If Applicable):*

*Secondary benefits of this project include:* Protection of trout habitat on Willow Creek  
Providing stormwater management to City of Kimball  
The opportunity to engage the City of Kimball in a successful project may open up future opportunities, the hope is that this is the first of many successful collaborations  
Recharge of local groundwater will improve baseflow in Willow Creek.  
P load reduction to Lake Betsy and downstream lakes (Scott Lake, Lake Louisa, Lake Marie, Lake Caroline, and Lake Augusta-- as well as the other lakes in the chain that are not impaired).

*Success for this application will be measured by:* Project success will be measured through the CRWD's annual monitoring project and specific monitoring of the success of the project. The DNR has measured temperature continuously in Willow Creek and will continue to do so. Though peak temperatures are driven by the diurnal cycle, the impact of storms on in-stream temperature should diminish, baseflow should increase.

*If the project addresses a TMDL, what portion of the required load reduction will this address?* 3% of the required watershed load reduction

*What is the Total Maximum Daily Load for the pollutant you are addressing?* 7.9 lbs/ day

*The pollutant causing the impairment is:* phosphorus

*How is the hydrologic impact calculated?* Drainage area x design event to be infiltrated

*What is the estimated amount of hydrologic benefit?* 53.5 ac-ft (per year infiltrated)

*By what mechanism is this project affecting hydrology?* 1.00

*8 Digit HUC Code (81 Majors)* 17.0007010203

*Estimated Reduction Pollutant #3*

*Pollutant #3*

*Estimated Reduction Pollutant #2*

<i>Pollutant #2</i>	
<i>Estimated Reduction Pollutant #1</i>	244 lbs/ yr
<i>Pollutant #1</i>	TP
<i>What hydrology impacts will this project have?</i>	The project will reduce stormwater runoff volumes from the City of Kimball Willow Creek, a nearby troutstream. The volume reduction will also facilitate a phosphorus load reduction for Lake Betsy into which Willow Creek Flows. Lake Betsy is impaired for nutrients. Because Lake Betsy is part of a chain of lakes, downstream lakes also realize a load reductions. Secondary benefits include stormwater treatment for TSS and bacteria through stormwater BMP.
<i>Water Plan Reference:</i>	Clearwater River Watershed District Comprehensive Plan as amended July 2003
<i>TMDL Reference:</i>	Clearwater River Watershed District-Wide TMDL Implementation Plan (DRAFT) April 2009
<i>Watershed Name (81 Majors)</i>	Upper Mississippi St. Cloud
<i>Name of Water Resource targeted for activities:</i>	Betsy Lake, Willow Creek
<i>TMDL finalized and implementation plan approved?</i>	N
<i>Project Description:</i>	To reduce phosphorus loads to Lake Betsy via protection of tributary stream "Willow Creek," a stormwater infiltration basin is beng constructed on City of Kimball park land. This basin will serve to protect the creek, a designated trout stream, from incoming nutrient-rich, warm water runoff from the City of Kimball.
<i>Primary Pollutant Targeted:</i>	Phosphorus
<i>Estimated Amount of Primary Pollutant Reduction:</i>	244 lbs./yr.
<i>Secondary Pollutant Targeted:</i>	
<i>Estimated Amount of Secondary Pollutant Reduction:</i>	
<i>Additional Pollutant Targeted:</i>	

*Estimated Amount of Additional Pollutant  
Reduction:*

*Estimated number of plans/designs to be  
completed (if applicable):*