

## Wisconsin Department of Natural Resources SWIMS Project Summary

### General Project Information

**Project ID:** NOR\_04\_CMP13B

**Name:** St. Croix River Tributary Load Investigation (USGS 9KH60) - NOR\_04\_CMP13B

**Type:** Competitive Projects

**Subtype:** TMDL Monitoring

**Status:** ACTIVE

**Start Date:** 7/1/2013

**End Date:** 6/30/2014

**Purpose:** This project will monitor streamflow and nutrient concentrations as well as compute nutrient loads at 3 major tributaries to Lake St. Croix; Apple, Kinnickinnic and Willow Rivers. This information will be used in the implementation of the Lake St. Croix and Lake Mallaieu TMDLs, used to validate SWAT models of the Willow and St. Croix watersheds, used as input for a previously funded NPS/USGS intensive study, and used to measure the watershed response to agricultural land management practices initiated by the Discovery Farms project, sponsored by the University of Wisconsin, for the Willow River Basin.

**Objective:** Gauge stations will be funded on the Apple River near Sommerset (WBIC 2614000), the Kinnickinnic River near River Falls (WBIC 2601800) and the Willow River at Willow River State Park near Burkhardt (WBIC 2606900). Continuous flow data will be collected at each station and chemistry data collected monthly and during 10 events at each station. These samples will be collected by hand (monthly samples) and by automated samplers for the 10 event samples.

**Comments:** Continuing project from last year and this is year 2 of 3. Gauges are installed and running and this years cost is for data collection and reporting. The cost of the project may be less than listed. Based on the latest information I could find the cost will be \$26,558. This project is for the period of July 1, 2013 to June 30, 2014.

**Outcome:** This project will quantify daily sediment and nutrient loads for three tributaries to Lake St. Croix during base flow conditions and storm events using the Graphical Constituent Loading Analysis System. These three tributaries are three of the six largest nutrient contributors to the St. Croix River. These data will be used to compute accurate loads on both annual and daily time frames to allow for validation of multiple components of the water and nutrient budgets in the SWAT Model.

**Study Design:** The USGS will install real time equipment to measure discharge and to sample river water during storm events in order to compute loads as follows: 1) Discharge will be measured over the range of flows that occur during the study using standard methods. A relation between stage and discharge will be refined from existing ratings for the sites as contemporary measurements are added. 2) Nutrient samples will be collected at a fixed interval with additional automated samples during events. Fixed samples will be collected manually using the equal-width-increment (EWI) sampling method. Samples will be analyzed for suspended sediment in addition to nitrite, nitrate+nitrite, ammonia, total nitrogen, total phosphorus, and dissolved ortho-phosphate. Nutrient samples will be analyzed at the National Water Quality Lab and suspended sediment concentrations will be analyzed by the Kentucky Sediment Lab. 3) A datalogger program that controls the gauge will be written to include operating instructions for an ISCO water sampler. Samples will be collected at a regular interval during a storm event. 4) Daily sediment and nutrient loads will be computed using GCLAS, the Graphical Constituent Loading Analysis System by which concentration are interpolated between samples and multiplied by daily stream flows.

### QA Measures:

### People

Name	Role	Status	Start Date	End Date	Organization	Comments
AARTILA, THOMAS P	SUPERVISOR	COMPLETE	7/2/2012	12/31/2012	Wisconsin DNR	
CAHOW, JAMES M	TEAM_MEMBER	INACTIVE	7/2/2012	12/31/2012	Wisconsin DNR	
CUNNINGHAM, JOSEPH L	TEAM_MEMBER	COMPLETE	7/2/2012	12/31/2012	Wisconsin DNR	
Juckem, Paul	TEAM_MEMBER	ACTIVE	7/2/2012		USGS	
LALIBERTE, PAUL J	SUPERVISOR	COMPLETE	7/1/2013	6/30/2014	Wisconsin DNR	
Sorge, Patrick W	PROJECT_LEAD	ACTIVE	7/2/2012	12/31/2012	Wisconsin DNR	

7/25/2024

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Date	Reported By	Status	Comments
3/21/2012	MOLLI MACDONALD	Proposed	
2/8/2013	RUTH PERSON	Proposed	Proposed for continuing through 6/30/2013.

**Project Status Detail****Answer Set: DEFAULT**

Question	Answer
1. Number of Sample Sites (Enter the station IDs if you know them).	3
2. Number of Sample Events (Indicate how many trips into the field you anticipate for this project).	8
3. Proposed Dates for Sample Collection	Monthly starting in October and 4 events in the fall.
4. List applicable databases and who will enter data?	USGS database - We will need to get this data in a form to enter into SWIMS.
5. Did you receive competitive projects funding in the previous year?	Yes
6. If yes to question 5, did you complete the projects including data entry and reports as necessary? If not, why not?	Yes
7. Reviewer Notes: Identify questions or issues with project (use during review period)	
8. Reviewer Decision: Is this project recommended for funding?	

**Actions**

Action	Detailed Description	Start Date	End Date	Status
TMDL (USEPA) Approved	Alto Creek TMDL Approved	7/2/2012	12/31/2012	PROPOSED

**Monitoring Stations**

Station ID	Name	Comments
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**Assessment Units**

WBIC	Segment	Local Name	Official Name
835900	1	Alto Creek	Alto Creek

**Lab Account Codes**

Account Code	Description	Start Date	End Date
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**Forms**

Form Code	Form Name
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**Methods**

Method Code	Method Description
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**Fieldwork Events**

Start Date	Status	Field ID	Station ID	Station Name
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**Documents**

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Title	Description	Author	Published	Comments
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Budget

Budget Description:	St. Croix Tributary Loading Budget 1 2013	Start Date:	7/1/2013	End Date:	12/31/2013
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Code	Description	Quantity	Units	Unit Cost	Total Cost	Comments
FTE	FTE Hours		Hours	\$0.00	\$0.00	
LTE SAL	LTE Salary	100	Hours	\$13.00	\$1,300.00	
LTE FR	LTE Fringe				\$321.10	
LTE IND	LTE Indirect				\$262.13	
LTE TOT	LTE Total Cost				\$1,883.23	
SUPPLY	Supplies				\$0.00	
EQUIP	Equipment				\$0.00	
MILEAGE	Mileage	700	Miles	\$0.72	\$504.00	
MEAL	Meals	8	Meals	\$9.00	\$72.00	
LODGE	Lodging				\$0.00	
TRAVEL	Travel Total				\$576.00	
BUG	Bug Contracts				\$0.00	
OTHER	Other Contracts				\$0.00	
USGS	USGS Costs	1		\$26,558.00	\$26,558.00	USGS Contract
TOTAL	Total Cost (excludes SLOH)				\$29,017.23	

Total WSLH Lab Costs: \$0.00  
Total Budget: \$29,017.23

Combined Budgets: \$29,017.23  
Combined WSLH: \$0.00  
Combined Total: \$29,017.23

Funding

Organization	Source	Type	Amount	Start Date	End Date
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