

**Environment and Natural Resources Trust Fund  
2010 Request for Proposals (RFP)**

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**LCCMR ID: 006-A1**

**Project Title:**

Protecting Vermillion River Trout from Gravel Mining Impacts

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**LCCMR 2010 Funding Priority:**

A. Water Resources

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**Total Project Budget: \$** \$114,300

**Proposed Project Time Period for the Funding Requested:** 3 years, 2010 - 2013

**Other Non-State Funds: \$** N/A

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**Summary:**

Develop strategies, to be incorporated in model ordinance, that will protect trout reaches of the Vermillion River in Dakota County from gravel mining impacts.

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**Sponsoring Organization:** Vermillion River Watershed JPO

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**Location:**

**Region:** Metro

**County Name:** Dakota

**City / Township:** City of Lakeville, City of Farmington, Eureka Township

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_____ Knowledge Base	_____ Broad App.	_____ Innovation
_____ Leverage	_____ Outcomes	
_____ Partnerships	_____ Urgency	_____ TOTAL

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# MAIN PROPOSAL

**PROJECT TITLE: Protecting Vermillion River Trout from Gravel Mining Impacts.**

## I. PROJECT STATEMENT

The headwaters area of the Vermillion River and areas immediately downstream support a coldwater fishery including brown trout. This is a unique condition as it is the only such naturally reproductive and self-supporting fishery of its type that exists in an urbanizing setting. There is concern that the potential expansion of gravel mining operations in the headwaters area of the Vermillion River that extract from below the water table may negatively impact the river resource via impacts to the ground water. This proposal will determine the extent of high quality gravel reserves available to be mined in the area, the potential impacts to ground water levels and temperature due to the potential for expanded mining operations in the area, and develop protection measures that can be incorporated into local planning and zoning ordinances.

Gravel mining has been a prevalent activity in the Vermillion River Watershed for many years. It is expected that this activity will continue and that current reserves of good quality gravel will continue to be extracted where economically viable. There are significant deposits of good quality gravel in the headwaters area of the Vermillion River Watershed, however, these deposits generally occur in areas where the ground water table is relatively shallow. Interim use permit proposals for mining operations in this area have included mining below the water table with the end use becoming shallow lakes.

## II. DESCRIPTION OF PROJECT RESULTS

### **Result 1: Geological mapping**

**Budget:** \$ 23,400

Delineation of the extent of deposits of high value sands and gravels in the headwaters area of the Vermillion River.

#### **Deliverable**

1. *Reviews of existing water well logs for geologic interpretation*
2. *Analysis and interpretation of selected well logs and mapping*
3. *Develop report and present findings*

#### **Completion Date**

*January, 2011*  
*May, 2011*  
*July, 2011*

### **Result 2: Monitoring of existing pit lakes at five locations**

**Budget:** \$ 82,500

Monitoring of the impact of surfaced ground water through mining

#### **Deliverable**

1. *Site selections and installation of monitoring wells*
2. *Purchase and installation of data loggers*
2. *Monitoring*
3. *Data analysis and reporting*

#### **Completion Date**

*November, 2010*  
*November, 2010*  
*November, 2012*  
*March, 2013*

### **Result 3: Protective measures development and model ordinance**

**Budget:** \$ 25,000

Modeling of potential practices to protect the river resource

#### **Deliverable**

1. *Development of model to evaluate impacts of land use change*
2. *Calibration and validation of model to monitored data*
3. *Application of model (result 3) to various mining development scenarios*
4. *Development of a model ordinance based on model results*

#### **Completion Date**

*November, 2011*  
*March, 2013*  
*May, 2013*  
*June, 2013*

### **Result 5: Administration, Reporting and Communications**

**Budget:** \$ 17,100

Project management and oversight

**Deliverable**

1. Overall project management
2. Development of final report and mitigation recommendations
3. Production and delivery of communications (fact sheets)

**Completion Date**

June, 2013  
June, 2013  
June, 2013

**III. PROJECT STRATEGY****A. Project Team/Partners****Result 1: Geological mapping**

Dakota County Water Resources Department staff (in-kind) will be responsible for compiling well logs from the project area and reviewing log profiles for determination of applicability and quality of information for geological interpretation and mapping. Dakota County staff will also oversee any contracted environmental boreholes or soils engineering work completed to fill information gaps for this part of the project.

Minnesota Geological Survey. MGS will be responsible for making interpretations of geological information and transforming those into the identification and delineation of the extent and type of glacial deposits including the coordination and delivery of mapping. MGS will also present the findings of this part of the project.

**Result 2: Monitoring of existing pit lakes at five locations**

Dakota County SWCD (in-kind). Lead staff will provide assistance with site selection and monitoring program design and project oversight. An intern or part time staff will implement instrumentation and complete regular monitoring and maintenance activities with direction from SWCD. Data management and reporting will be coordinated between the part time staff of the Dakota County SWCD and staff of the Vermillion River Watershed JPO.

**Result 3: Protective measures development and model ordinance**

This activity will be performed through contracted services.

**Result 4: Administration, Reporting and Communications**

Temporary Staff hired through Dakota County will be responsible for the overall project management.

Brian Nerbonne, DNR Fisheries, Janell Miersch, DNR Waters, Mark Zabel and Paula Liepold of Dakota County will also provide in kind support to the project.

**B. Timeline Requirements**

This project will be completed in three years. The monitoring component will be performed over two open water seasons

**C. Long-Term Strategy**

The findings of this study may require application of mitigation strategies.

## Project Budget

### IV. TOTAL PROJECT REQUEST BUDGET (3 years)

<b>BUDGET ITEM</b>	<b>AMOUNT</b>
<b>Personnel:</b>	\$ -
Project Manager - 0.10 FTE (1 staff involved)	\$ 11,200
<b>Contracts:</b>	\$ -
Minnesota Geological Survey (geological interpretation and mapping)	\$ 3,400
Dakota County SWCD (monitoring data collection and analysis)	\$ 25,000
Well Drilling / Soils Engineering (contractor selected through RFP process)	\$ 32,500
Computer Modeling (contractor selected through RFP process)	\$ 17,200
<b>Equipment/Tools/Supplies:</b>	
Monitoring Data Loggers and Probes (continuous sampling of water level and temp.) \$500 per well, 50 wells	\$ 25,000
<b>TOTAL PROJECT BUDGET REQUEST TO LCCMR</b>	<b>\$ 114,300</b>

### V. OTHER FUNDS

<b>SOURCE OF FUNDS</b>	<b>AMOUNT</b>	<b>Status</b>
<b>Other Non-State \$ Being Applied to Project During Project Period:</b>	\$ -	NA
<b>Other State \$ Being Applied to Project During Project Period:</b>	\$ -	NA
<b>In-kind Services During Project Period:</b> Dakota County Financial Services Department support	\$ 5,000	<i>secured</i>
<b>Dakota County Water Resources staff</b>	\$ 18,700	<i>secured</i>
<b>DNR Fisheries</b>	\$ 2,500	<i>secured</i>
<b>DNR Waters</b>	\$ 2,500	<i>secured</i>
<b>Dakota County SWCD</b>	\$ 5,000	<i>secured</i>
		<i>secured</i>
<b>Remaining \$ from Current Trust Fund Appropriation (if applicable):</b>		NA
<b>Funding History:</b>	\$ -	NA

## **Project Manager Qualification and Organization Description**

**Project Manager:** Mark Zabel

**Position:** Administrator for the Vermillion River Watershed Joint Powers Organization

Mark has been the Administrator for the VRWJPO since July of 2008. Previously Mark was with the Minnesota Department of Agriculture for nearly 18 years as a hydrologist working mainly in the area of monitoring, providing lead staff capacity and project management for the ground water monitoring activity. Mark also worked for consulting engineering firms and the Dakota County SWCD previous to his experience with the MDA. Mark will be the primary contact and will provide the overall management for this project. Mark's oversight will be provided as in-kind service to the project.

The **Vermillion River Watershed Joint Powers Organization** (VRWJPO) is a joint powers watershed management organization formed in September of 2002 under Minnesota Statutes 471.59 for the purposes set forth in Minnesota Statutes 103B.201 through action of the Boards of Dakota County and Scott County. The VRWJPO is governed by a three member Board made up of two Commissioners from Dakota County and one Commissioner from Scott County. The VRWJPO exists to:

- Protect, preserve, and use natural surface and groundwater storage and retention systems.
- Minimize public capital expenditures needed to correct flooding and water quality problems.
- Identify and plan for means to effectively protect and improve surface and groundwater quality.
- Establish more uniform local policies and official controls for surface and groundwater management.
- Prevent erosion of soil into surface water systems.
- Promote groundwater recharge.
- Protect and enhance fish and wildlife habitat and water recreational facilities.
- Secure the other benefits associated with the proper management of surface and groundwater.

