


**Minnesota Pollution  
Control Agency**

 520 Lafayette Road North  
 St. Paul, MN 55155-4194

# Project Work Plan

*Doc Type: Contract*

MPCA Use Only	
Swift #:	89268
CR #:	8070

**Project Title:** West Fork Des Moines River Major Watershed Project Phase II

## 1. Project Summary:

**Organization:** Heron Lake Watershed District (HLWD)  
**Contractor Contact Name:** Jan Voit  
**Title:** District Administrator  
**E-mail:** jan.voit@mysmbs.com  
**Address:** PO Box 345  
 Heron Lake, MN 56137  
**Phone:** 507-793-2462  
**Fax:** 507-822-0921

### Subcontractor(s)/Partner(s):

**Organization:** University of Minnesota Extension  
**Project manager:** Barb Radke, Leadership and Civic Engagement  
**Address:** 863 30<sup>th</sup> Ave SE  
 Rochester, MN 55904  
**Phone:** 507-995-1631  
**E-mail:** radke008@umn.edu  
 and  
**Project manager:** Karen Terry, Watershed Education Program  
**Address:** 46352 State Highway 329  
 Morris, MN 56267  
**Phone:** 320-589-1711  
**E-mail:** kterry@umn.edu

### MPCA contact(s):

**MPCA project manager:** Katherine Pekarek-Scott  
**Title:** Project Manager  
**Address:** 1601 East Highway 12, Suite 1  
 Willmar, MN 56201  
**Phone:** 320-441-6973  
**Fax:** 320-214-3787  
**E-mail:** katherine.pekarek-scott@state.mn.us

### Project information

**Latitude/Longitude:** 43.556/-94.956  
**County:** Murray, Nobles, Cottonwood, Jackson, Lyon, Pipestone, and Martin  
**Start date:** 03/26/2015                      **End date:** 06/30/2018  
**Total cost:** \$175,000.00  
**Full time equivalents:** 2.59

**Major watershed(s):**

- Statewide
- Big Fork River
- Upper Big Sioux Rvr
- Lower Big Sioux Rvr
- Blue Earth River
- Bois de Sioux River
- Buffalo River
- Cannon River
- Cedar River
- Chippewa River
- Clearwater River
- Cloquet River
- Cottonwood River
- Crow Wing River
- E Fork DesMoines Rvr
- Red Rvr of the North Grand Marais Creek
- Kettle River
- Lac Qui Parle River
- Lake of the Woods
- Lake Superior – North
- Lake Superior – South
- Le Sueur River
- Leech Lake River
- Little Fork River
- Little Sioux River
- Long Prairie River
- Red Rvr of the North Marsh River
- MN Rvr – Yellow Medicine River
- MN Rvr – Headwaters
- MN Rvr – Mankato
- Lower MN River
- Miss Rvr – Brainerd
- Miss Rvr – GrandRpds
- Miss Rvr –Headwaters
- Miss Rvr –LaCrescent
- Miss Rvr – Reno
- Miss Rvr – Sartell
- Miss Rvr – St. Cloud
- Miss Rvr – Twin Cities
- Miss Rvr – Winona
- Miss Rvr – Lake Pepin
- Mustinka River
- Nemadji River
- No Fork Crow River
- Otter Tail River
- Pine River
- Pomme de Terre Rvr
- Rainy Rvr – Hdwtrs
- Rainy Rvr – Baudette
- Rainy Rvr – Black Rvr
- Rainy Rvr – Rainy Rvr
- Rapid River
- Red Lake River
- Upper Red Rvr
- Redeye River
- Redwood River
- Rock River
- Root River
- Roseau River
- Rum River
- Red Rvr of the North Sandhill River
- Sauk River
- Shell Rock River
- Snake River
- So Fork Crow River
- Lower St. Croix Rvr
- Upper St. Croix Rvr
- St. Louis River
- Red Rvr of the North Tamarac River
- Thief River
- Two Rivers
- Upper/Lower Red Lk
- Upper Iowa River
- Vermillion River
- Upper Wapsipinicon River
- Watonwan River
- DesMoines Rvr Hdwtrs
- Lower DesMoines Rvr
- Wild Rice River
- Winnebago River
- Zumbro River

**Organization type:**

- Federal government
- For-profit
- Individual
- Non-profit
- Local/Regional government
- Private college/university
- Public college/university
- State government

**Project type:**

- Analysis/Interpretation
- Assessment/Evaluation
- Demo/Pilot project
- Education/Outreach/Engagement
- Modeling
- Monitoring
- Planning
- Research
- Restoration/Enhancement
- Technical assistance

**2. Statement of Problems, Opportunities, and Existing Conditions**

**Why the Project is Taking Place**

The Minnesota Pollution Control Agency (MPCA) is committed to working with a range of partners using a watershed approach that addresses all of Minnesota’s 81, 8-digit HUC watersheds, within a ten year cycle. The major components of the approach include unified methods to: 1) monitor and gather information, 2) assess the data, 3) develop implementation strategies to meet standards and protect waters, and 4) implement water quality protection and restoration activities. Intensive watershed monitoring began in the West Fork Des Moines River (WFDMR) 8-digit HUCs in 2014. This monitoring work expands on previously established routine water quality and flow sampling to include extensive fish and aquatic invertebrate surveys. Following completion of the intensive watershed monitoring, subsequent steps include assessment of the monitoring data to determine impairments, identification of stressors that are causing impairments, development of Total Maximum Daily Loads (TMDLs) using identification of pollutant sources using computer modeling and other techniques, civic engagement, and public education as approaches in progress towards water quality goals. The project will culminate in a set of strategies to restore impaired waters and protect unimpaired waters. These strategies will ultimately be executed by state and local governments, citizen organizations, businesses, and individuals.

In 2014, the WFDMR watershed initiated the MPCA’s Major Watershed Restoration and Protection Project process. This process encompasses a ten-year timeline where data collection, assessment, and implementation occur. The project commenced with intensive monitoring where biological data was collected along with physical and chemical data of streams and lakes in selected subwatersheds. There are 70 proposed stream sites to be sampled for biological data, 15 stream sites for water quality, and one site for fish tissue. Water samples will be collected on one lake. A majority of the data collection will be done by the MPCA with the exception of water samples collected by two local project sponsors. This monitoring will be conducted at 15 sites, is funded through the Surface Water Assessment Grant (SWAG) program, and is not reflected in this work plan.

A Watershed Coordinator will be reimbursed through this contract. Time spent on the project will be allocated to community involvement and education, assisting MPCA with biological monitoring and stressor identification, participating in meetings, analyzing information, identifying and using tools, developing priority areas and restoration/protection strategies, and coordinating the project.

In accordance with the federal Clean Water Act, the MN Clean Water Legacy Act (CWLA) states that “public agencies and private entities involved in the implementation of this chapter shall encourage participation by the public and stakeholders, including local citizens, landowners and managers, and public and private organizations, in identifying impaired waters, in developing TMDL’s, in planning, priority setting, and implementing restoration of impaired waters, in identifying degraded groundwater, and in protecting and restoring groundwater resources. ...The agency shall seek broad and early public and stakeholder participation [in]...actions...that are taken to achieve and maintain water quality...” (2013 MN Statute Section 114D.35) “.

**Watershed Description**

Locally, the Des Moines River Headwaters (8-digit HUC 07100001) and the Upper Des Moines River (8-digit HUC 07100002) are considered to be the WFDMR. For this reason, these two major watersheds will be combined into one project and the necessary tasks will be completed simultaneously with shared deliverables.

The WFDMR watershed is part of the Western Corn Belt Plains and Northern Glaciated Plains ecoregions. The watershed extends across seven counties: Murray, Cottonwood, Jackson, and Nobles and small portions of Pipestone, Lyon, and Martin. It covers an area of 1,333 square miles. The river originates in the northwestern part of the watershed from several lakes including its principal source Lake Shetek. The river flows from the Lake Shetek outlet near Currie in a southeasterly direction for 94 miles to the Minnesota/Iowa border and eventually enters the Mississippi River at Keokuk, Iowa. The river is mainly slow flat water except for some moderate rapids near Kilen Woods State Park. The overall gradient from the Talcot dam to Jackson is approximately 2.1 feet per mile. The dominant land use in the WFDMR watershed is row crop agriculture (~85.5%), with 9.5% pasture/open, 3% water/marsh, 1.5% urban, and 0.5% forested. Land adjacent to the stream is utilized for pasture, cropland, urban development, and recreation. Agricultural production is a dominant and vital part of the economy for this region.

The Heron Lake subwatershed has an established watershed district. The Heron Lake Watershed District (HLWD) was formed in 1970 with a mission to protect and improve the water resources within its boundaries by supporting watershed residents through the use of education and financial programs. The HLWD covers about 472 square miles and works with the landowners in this area to install Best Management Practices (BMP) to increase the water quality. They are also active in informing citizens about environmental issues, research conducted, and education on BMPs.

**Existing Conditions**

To date, 24 stream reaches and 15 lakes have been assessed. These stream reaches and lakes have been found to not be meeting at least one beneficial use. Within the 24 stream reaches, there are 36 impairments listed on the draft 2012 Impaired Waters List with some reaches not meeting more than one beneficial use. In 2009, a TMDL Report was approved by the Environmental Protection Agency addressing 33 impairments on 21 stream reaches and two lakes. Table 1 identifies those stream reaches and lakes that have been identified as impaired.

**Table 1: Impaired waters in the WFDMR watershed**

Reach Description	ID	Impaired Use	Impairment Cause	TMDL Status
Des Moines River: Windom Dam to Jackson Dam	07100001-501	AqLife	Ammonia (Un-ionized), Dissolved Oxygen	Required
Des Moines River: Windom Dam to Jackson Dam	07100001-501	AqRec AqLife	Fecal Coliform, Turbidity	Approved
Lake Shetek Inlet: Headwaters to Lk Shetek	07100001-502	AqRec	Fecal Coliform	Approved
Beaver Creek: CD 20 to Des Moines R	07100001-503	AqRec AqLife	Fecal Coliform, Turbidity	Approved
County Ditch 20: Headwaters to Beaver Cr	07100001-504	AqRec	Fecal Coliform	Approved
Jack Creek, North Branch: Headwaters to Jack Cr	07100001-505	AqLife	Turbidity	Approved
Elk Creek: Headwaters to Okabena Cr	07100001-507	AqRec AqLife	Fecal Coliform, Turbidity	Approved
Lower Lake Sarah Outlet : First Unnamed cr on Lk Sarah outlet str to Lk Shetek inlet	07100001-508	AqRec	Fecal Coliform	Approved
Jack Creek: JD 26 to Heron Lk	07100001-509	AqRec AqLife	Fecal Coliform, Turbidity	Approved
Okabena Creek: Unnamed cr to T102 R38W S6, north line	07100001-512	LimUse	Escherichia coli	Required
Upper Lake Sarah Outlet: Lk Sarah to Unnamed cr	07100001-513	AqRec	Fecal Coliform	Approved
Unnamed creek: Unnamed cr to Unnamed cr	07100001-517	AqRec	Fecal Coliform	Approved
Unnamed creek: Unnamed cr to Lk Shetek	07100001-519	AqRec	Fecal Coliform	Approved
Des Moines River: Heron Lk outlet to Windom Dam	07100001-524	AqLife	Turbidity	Approved
Heron Lake Outlet: Heron Lk (32-0057-01) to Des Moines R	07100001-527	AqLife	Turbidity, pH	Approved

Division Creek: Okabena Cr to Heron Lk (32-0057-06)	07100001-529	AqLife	Turbidity	Approved
Des Moines River: Lime Cr to Heron Lk outlet	07100001-533	AqRec AqLife	Fecal Coliform, Turbidity	Approved
Lime Creek: Lime Lk to Des Moines R	07100001-535	AqRec AqLife	Fecal Coliform, Turbidity	Approved
Des Moines River: Jackson Dam to JD 66	07100001-541	AqLife	Turbidity	Approved
Des Moines River: Lk Shetek to Beaver Cr	07100001-545	AqLife	Turbidity	Approved
Des Moines River: Beaver Cr to Lime Cr	07100001-546	AqRec AqLife	Fecal Coliform, Turbidity	Approved
Unnamed creek: String Lk to Des Moines R	07100001-551	AqLife	Turbidity	Required
Okabena Creek: Elk Cr to Division Cr	07100001-602	AqRec AqLife	Fecal Coliform, Turbidity	Approved
Des Moines River: JD 66 to MN/IA border	07100002-501	AqRec AqLife	Fecal Coliform, Turbidity	Approved
Judicial Ditch 56: Unnamed cr to Des Moines R	07100002-505	AqLife	Turbidity	Required
Talcot	17-0060-00	AqRec	Nutrient/Eutrophication Biological Indicators	Required
Flaherty	32-0045-00	AqRec	Nutrient/Eutrophication Biological Indicators	Required
Heron: North Marsh	32-0057-01	AqRec	Nutrient/Eutrophication Biological Indicators	Required
Heron: Duck	32-0057-02	AqRec	Nutrient/Eutrophication Biological Indicators	Required
Heron: North Heron	32-0057-05	AqRec	Nutrient/Eutrophication Biological Indicators	Approved
Heron: South Heron	32-0057-07	AqRec	Nutrient/Eutrophication Biological Indicators	Approved
Yankton	42-0047-00	AqRec	Nutrient/Eutrophication Biological Indicators	Required
First Fulda	51-0021-00	AqRec	Nutrient/Eutrophication Biological Indicators	Required
Lime	51-0024-00	AqRec	Nutrient/Eutrophication Biological Indicators	Required
Bloody	51-0040-00	AqRec	Nutrient/Eutrophication Biological Indicators	Required
Shetek	51-0046-00	AqRec	Nutrient/Eutrophication Biological Indicators	Required
Sarah	51-0063-00	AqRec	Nutrient/Eutrophication Biological Indicators	Required
Currant	51-0082-00	AqRec	Nutrient/Eutrophication Biological Indicators	Required
East Graham	53-0020-00	AqRec	Nutrient/Eutrophication Biological Indicators	Required
West Graham	53-0021-00	AqRec	Nutrient/Eutrophication Biological Indicators	Required

### 3. Goal, Objective, Tasks, and Subtasks

**Goal:** The primary goal of this project is to develop a comprehensive Watershed Restoration and Protection Strategies (WRAPS) Report to be used on the local level. Achieving this goal will require sound working relationships between local government units (LGUs), watershed citizens, and state government. Gathering input from these groups will be critical in drafting a WRAPS report that can be utilized by local decision-makers. Working groups will be convened to become informed of the watershed management process and to assist watershed professionals in engaging the public and producing the WRAPS report.

#### Objective 1: WRAPS Development

##### Task A: Community Outreach

##### Sub-Task 1: Local Work Group

- Convene seven county and Soil and Water Conservation District (SWCD) staff, HLWD Watershed Coordinator, HLWD Watershed Technician, and HLWD District Administrator on a semi-annual basis or as needed.
- Provide Local Work Group with information about existing tools such as Zonation, Hydrologic Simulation Program Fortran (HSPF), Geographic Information Systems (GIS) maps.

- Use information obtained from tools and public information meetings to develop priority areas and restoration/protection strategies in cooperation with Citizen Council.
- Attend Local Work Group sessions.

**Responsible Parties:** HLWD

**Sub-Task 2:** Citizen Council

- Citizen Council Identification: Identify individuals in the watershed to serve as the Citizen Council. Invitee list will be co-created between the University of Minnesota (UM) Extension, HLWD staff, and selected others knowledgeable on spheres of influence and network relationships within the watershed.
- Citizen Council Team Building: UM Extension will provide coaching to HLWD, consultation to Citizen Council on work team development, network mapping, and asset mapping.
- Citizen Council Civic Capacity Building: UM Extension will be responsible for training Citizen Council to co-convene three different watershed update sessions.
- Evaluation: For program components delivered by UM Extension, evaluation and synthesis of the evaluation will be designed and administered.
- Progress Tracking: Work with MPCA staff to develop and implement a scheme for tracking progress towards measurable outcomes.
- Provide council members with information about existing tools such as Zonation, HSPF, GIS maps, or others identified by the Local Work Group.
- Use information obtained from tools and public information meetings to develop priority areas and restoration/protection strategies in cooperation with the Local Work Group.
- Attend Citizen Council Identification, Citizen Council Team Building, and Citizen Council Civic Capacity Building sessions.

**Responsible Parties:** HLWD, UM Extension

**Sub-Task 3:** Public Participation and Education

- Shared Leadership: Two sessions facilitated by UM Extension would provide for relationships to develop/strengthen for shared leadership and network building to move the WRAPS project forward.
- Non-point Education for Rural Officials (NERO)/The Watershed Game: This workshop would provide education related to watershed dynamics, existing conditions, TMDLs, BMPs for rural areas and small cities, and ecosystem services for healthy watersheds. The Watershed Game, an interactive educational tool, would be used to help participants understand the connection between land use practices and water quality. These sessions would be facilitated by UM Extension Watershed staff.
- Educational sessions: Conduct two educational sessions, workshops, or tours based upon needs identified by the Local Work Group. These sessions would be facilitated by UM Extension staff.
- Evaluation: For program components delivered by UM Extension, evaluation and synthesis of the evaluation will be designed and administered.
- Progress Tracking: Work with MPCA staff to develop and implement a scheme for tracking progress towards measurable outcomes.
- Attend Shared Leadership, NERO/The Watershed Game, and educational sessions.

**Responsible Parties:** HLWD, UM Extension

**Task A Timeline:** March 2015 – June 2018

**Task A Deliverables:** Local Work Group and Citizen Council, watershed update sessions, priority areas and restoration/protection strategies, workshops, education sessions, and/or tours

**Task B:** Information Analysis

**Sub-Task 1:** Data Collection

- Inventories conducted may include, but are not limited to buffer, septic, gully/ravine, terraces, wetlands, grassed waterways, side inlets, streambank, stream visual assessment protocol, and pastures (active, inactive, and loss) as identified by Local Work Group.
- Inventories will be conducted by the HLWD Watershed Coordinator with assistance from county and SWCD staff.
- Compile inventory results for use in determining priority areas.

**Responsible Parties:** HLWD

**Task B Timeline:** March 2015 – June 2018

**Task B Deliverables:** Inventory results

**Task C:** Project Coordination

**Sub-Task 1:** Project Management

- Complete and submit reports in accordance with work plan requirements.
- Complete and submit reimbursement requests in accordance with work plan requirements.
- Provide training for HLWD Watershed Coordinator. Training registration, lodging, and meals will be reimbursed

through this contract.. Training will need to be approved by the MPCA Project Manager and pertinent to the project.

- Meet with East Fork Des Moines River staff on a semi-annual basis, or as needed, to communicate project progress and foster partnering efforts.
- Assure work plan requirements are met.

**Responsible Parties:** HLWD

**Sub-Task 2:** Assist MPCA in Data Collection in Watershed Approach

- Biological monitoring – contribute to the bio monitoring process by taking part in data collection.
- Stressor identification – assist stressor identification crew with data collection; collect additional water chemistry data, pictures, field data, and perform stream recon work.
- Participate in MPCA meetings on an annual basis; provide input to MPCA.

**Responsible Parties:** HLWD

**Task C Timeline:** March 2015 – June 2018

**Task C Deliverables:** Reports and reimbursement requests, data collection, provide input and participate

#### 4. Measurable Outcomes

Community outreach programs will be measured using:

- Increasing number of citizens participating in education and outreach events.
- Fostering information and idea exchange around watershed issues through relationships and social networks.
- Involving community members in crafting civic engagement activities/plans in which they feel ownership and an obligation to implement.
- Promoting awareness, concern, and watershed stewardship to community organizations/institutions.

Outcomes will be: defined roles and responsibilities for the Local Work Group and Citizen Council; a Local Work Group that provides leadership and connects with the Citizen Council; a Citizen Council that helps guide the watershed project and related work based upon local values and needs; project partners, elected officials, and the public that are engaged and informed and develop a sense of personal responsibility for water resources problems and solutions; and a local civic infrastructure and leadership for promoting watershed management strategies.

An additional outcome of this project will be a set of complete watershed management strategies to address restoration of impaired water and protection of un-impaired waters. These watershed management strategies will also include detailed descriptions of priority work areas and the practices that will benefit specific impairments. Upon completion, MPCA technical staff and local partners will have an adequate understanding of the watershed to select and prioritize strategies to move forward with water resource protection and restoration activities.

#### 5. Gantt charts (*Attached*)

#### 6. Project Budget (*Attached*)