



Red Lake Watershed District



Scoping Report

Watershed Plan and Environmental Assessment

Four Legged Lake Subwatershed

Clearwater County, Minnesota

February 2017



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1 Introduction

Four Legged Lake is located in northwestern Minnesota within the Clearwater River subwatershed of the Red Lake Watershed District (RLWD). Four Legged Lake is a natural lake made up of four shallow basins. Two of the basins are jointly called East Four Legged Lake and the other two basins are jointly called West Four Legged Lake. All four basins are separated from each other by county highways and local roads, but connected via culverts.

The lake is located in conjunction with Judicial Ditch #5. Prior to the ditch project, the water surface elevation (WSE) of the lake was estimated at 1,433 feet-MSL in the east lakes and 1,432 feet-MSL in the west lakes. The ditch was constructed through the lake basins in 1921 and drained into a channel at the southwestern portion of the westernmost lake. The ditch substantially drained the lake at that time. It is estimated that the elevation of the western outlet for the ditch was 1,421.7 feet-MSL. A 1939 aerial photograph shows haying where the lake had been. The channel into which it flows meets up with Ruffy Brook about 2,200 feet to the west, and then flows into Norway Lake. Ruffy Brook continues northwesterly to the Clearwater River.

Currently, the water elevation for the lake is controlled by a culvert underneath 233rd Avenue at the west outlet of the lake. The lake water levels were raised through various illegal actions beginning sometime between 1939 and 1960. Another illegal raising of the culvert under 233rd Avenue (lake outlet) in 1999 had the effect of increasing the WSE (up to 3 foot elevation rise) and size of the lake, which had become re-established over the judicial ditch route. It has been estimated that the aerial extent of the lake in 1960, after the first culvert raise, was 490 acres and increased to 910 acres after the 1999 culvert raising. It was estimated that the total potential storage in Four Legged Lakes above the 1921 outlet invert would be up to 3,136 acre-feet.

In 2010, the Red River Basin Commission (RRBC) established a region-wide goal to reduce peak flows along the mainstem of the Red River of the North (Red River) by 20 percent during a flooding event similar to the severe flood that struck the Red River Basin in 1997. In order to reach this goal, each tributary of the Red River was assigned peak flow and volume reduction goals as set forth in the RRBC's Long Term Flood Solutions Basin Wide Flood Flow Reduction Strategy Report (September 2011).

A Project Work Team (see Appendix A) was created to explore alternatives available to modify the current lake drainage characteristics to: 1) reduce flood risk to county highways and roads, and local landowners upstream and downstream; 2) enhance environmental conditions within the lake and subwatershed; and 3) maintain recreational benefits to Four Legged Lake. The Project Work Team consists of local land owners, the RLWD, and several local, state, and federal agencies, including the Minnesota Pollution Control Agency (MPCA), Minnesota Department of Natural Resources (MDNR), and United States Army Corp of Engineers (USACE).

Although the goals of the various stakeholders differ, working together to find solutions is well understood and agreed upon. As an example, property owners prefer sufficient water levels in

the lakes to provide year around recreational and aesthetic benefits. MNDNR prefers shallower water depths to improve wildlife habitat conditions. MNDNR considers West Four-Legged Lake a high diversity wetland and is interested in maintaining its diversity. A 26.4 acre wildlife management area (WMA) is located within the southwestern basin of West Four Legged Lake. The purpose of the WMA is to protect riparian and wetland habitat and provide public access and use of the lake. It is open to the public for hunting. It also features bird watching, hiking and wildlife viewing. NRCS and RLWD see the potential of adaptive water level management for the lake basins in order to provide flood damage reduction.

Although very little water quality monitoring data exists for Four Legged Lake, it has been considered to be in “outstanding” condition and a “lake of biological significance” by MNDNR. The lake has been within the top 5 percent of lakes in the state for aquatic plant species diversity (Olson 2016). Additionally, the lake has been important for waterfowl use over the years. However, there is concern that the high water level in the lake since the illegal culvert raising in 1999 has diminished breeding and migrating waterfowl habitat, as well as aquatic plant abundance, and that by lowering water levels to pre-1999 conditions or less, habitat could be improved.

In 2015, the RLWD entered into a cooperative agreement with the United States Department of Agriculture, Natural Resources Conservation Service (NRCS) to advance the project. The proposed improvements within the Four Legged Lake Subwatershed are intended to meet the goals identified by the Project Work Team, while also supporting regional flow reduction goals of the larger Red River of the North watershed. NRCS, as the lead federal agency, has initiated NEPA analysis in the form of a Watershed Plan and Environmental Assessment (Plan-EA) to analyze impacts to the natural and human environment from this project. The EA process will comply with the Council on Environmental Quality’s (CEQ) regulations at 40 CFR Parts 1500-1508, which require an evaluation of potential environmental impacts associated with federal projects and actions.

The National Watershed Program Manual (NWPM) sets forth the policy for all watershed plans developed under the Watershed Program. No project will be funded under Public Law 83-566 authority (Watershed Protection and Flood Prevention Act) unless it meets the requirements set forth in the manual. Public Law 83-566 authorizes NRCS to provide technical assistance to sponsoring local organizations (SLOs) to prepare and implement Watershed Project Plans. Three general purposes for authority include: 1) Preventing damage from erosion, floodwater, and sediment; 2) Other resources...considered as appropriate, including air, cultural and historic resources, aesthetic resources, and others; and 3) NRCS technical assistance authorization.

Authorized project purposes may include: 1) Flood Prevention (Flood Damage Reduction); 2) Watershed Protection; 3) Public Recreation; 4) Public Fish and Wildlife; 5) Agricultural Water Management; 6) Municipal and Industrial Water Supply; 7) Water Quality Management; and 8) Watershed Structure Rehabilitation. The following documents those project purposes that pertain to this project.

The Plan-EA will be comprised of the following elements:

- Alternatives analysis of potential options for Four Legged Lake will include:



- No project
- Build single outlet structure to control elevations in all four lake basins
- Build two outlet structures; one for control of East Four Legged Lake and one for control of West Four Legged Lake.
- Restore lake to pre-1998 culvert elevations
- Restore ditch to original 1921 elevations.
- Detailed analysis of resources that may be affected for each of the alternatives that may satisfy the purpose and need for the project;
- Identification of potential mitigation measures to reduce or eliminate potential impacts; and
- A plan of public participation and government agency coordination throughout development of the Plan-EA.

The participation of the public is a vital component of the project so that those who are interested in or potentially affected by proposed alternatives have an opportunity to share their concerns and provide input. This Scoping Report outlines the comments received from the agencies and general public during the scoping process.

1.1 Purpose of and Need for Action

The purpose of this project is 1) **Flood Damage Reduction**: Reduce flood damages to lakeshore properties, shorelines, and Clearwater County Roads 2 and 23 caused by high water ranging from a 10-yr event above elevation 1,428 to a 100-yr event above elevation 1,430.

Four Legged Lake is located in conjunction with Red Lake Watershed District (RLWD) Judicial Ditch #5 (JD #5) which drains through an outlet at the western end of the lake. The ditch was constructed through the lake basins in 1921 and substantially drained the lake at that time. It is estimated that the ditch invert of the western outlet was originally set at elevation 1,421.7. Currently, JD #5 is submerged and non-functional, and the water elevation for the lake is controlled by a culvert at the west outlet of the lake.

The predominant normal lake water levels have been raised since 1921 through various un-permitted actions beginning sometime between 1939 and 1960. The most recent un-permitted raising of the culvert occurred in 1999 to an approximate invert elevation 1,427, which had the effect of increasing the lake levels up to and exceeding elevation 1,429 at its highest in 2014 (~50-yr event). At its peak in 2014, there were up to 300 acres of upland flooded by high water. Prior to 1999, the culvert invert was set at approximately elevation 1423.8.

Inundation of private and public uplands begins at about elevation 1427 and public roadway damage begins at about elevation 1429. This annual high water above elevation 1427 has resulted in degradation of upland habitat, drowned out timber, elimination of historical and landowner preferred terrestrial land uses, and property devaluation. Road damages have been incurred in prior years, and after placement of riprap the remaining concern is the flood risk associated with permanent high lake levels and the potential for roadway inundation when 1 to 3 feet water surface - road separation design standards are not met.

Secondary benefits from the Project may include:

- Temporary flood detention during high runoff events;
- Contribution to a regional goal of reducing peak flows along the Red River by 20 percent during flooding events;
- Establishing a water level regime for the benefit of waterfowl and other wildlife;
- Elimination of the perched condition of the west outlet culvert and associated aquatic life migration barrier.

1.2 Scoping Goals and Objectives

The public involvement process for this project helps identify environmental resources and sensitivities within the watershed, developing the most thorough and effective options for meeting project goals, maintaining public buy-in for the project objectives, and the alternatives selection process. The process complies with NRCS requirements that are a condition for the grant supporting this work. The initial Public Participation Plan outlined the planning and decision-making process for the assessment and identified stages when the public would be invited to provide input on the project.

Objectives of the public involvement process are as follows:

- Use clear and concise messaging to communicate with the public and various stakeholders.
- Implement a communication process between the public and the project team that provides opportunity for interested parties to comment on the project.
- Successfully communicate realistic goals and schedule for the assessment.
- Promote science-based decision-making informed by public and stakeholder input.
- Provide appropriate notice of opportunities for public participation.



2 Scoping Process Summary

Scoping questions, comments, and concerns were requested from the public and government agencies during the scoping period via written submittal of comments. The following summarizes the scoping process and efforts made to engage the public and government agencies to date.

2.1 Scoping Schedule

The following dates outline the milestones for the scoping process:

May 27, 2016: Cooperating Agency Invitation Letter Sent (Appendix A).

June 27, 2016: Invitation Letters Sent to Public (Appendix A).

June 29, 2016 and July 6, 2016: Public Notice Published in *The Leader Record* and RLWD Project Page (Appendix A).

July 12, 2016: Public Scoping Open House.

Date: Scoping Period Open per RLWD

2.2 Scoping Notice

An invitation letter was created and distributed to all landowners in the Four Legged Lake subbasin, all members of the stakeholder project team, and agencies and organizations identified as cooperating agencies. The letters were mailed to the public on June 27, 2016 and to potential Cooperating Agencies on May 27, 2016. The scoping notice gave a description of the Project, location and overview, purpose and need, and requested public participation. The scoping notice also identified the location of the public meeting, and contact information to submit written comments. A copy of the invitation letters are in Appendix B. The scoping notice was also posted on the RLWD Project website.

The public and interested stakeholders were notified of the Public Meeting by public notice placed in *The Leader Record*. The RLWD placed the public notice and the notice ran on June 29 and July 6, 2016.

2.3 Scoping Meeting

The primary purpose of the scoping meeting was to gather input and feedback on the Project's purpose and need statement, potential alternatives for consideration, environmental issues to be addressed in the EA, methodologies to be used to evaluate impacts, and the overall public participation process. A combined government agency and general public scoping open house was held on July 12, 2016 from 4:00 PM to 6:00 PM at the City of Gonvick Community Center. No formal presentation was given at the scoping meeting. Exhibit boards and handouts were available and can be found in Appendix B.



Twenty-one members of the public and agency representatives attended and signed-in at the scoping meeting. Participants were invited to submit comments in writing either at the meeting or subsequently by mail, fax or e-mail during the scoping comment period. Attendance at the meeting was counted using a sign-in sheet that is located in Appendix B.

2.4 Scoping Mailing List

The mailing list was prepared by NRCS, RLWD and HDR to inform the government agencies and general public about the scoping process for the project. A total of 61 letters were mailed.



3 Scoping Results

3.1 Scoping Meeting

The combined agency/public scoping open house was conducted on July 12, 2016 from 4:00 PM to 6:00 PM. There were 21 public attendees and agency representatives at the meeting. Three written public comments were submitted at the meeting. three written comments were sent to the RLWD website, and there were 3 written comments submitted at the meeting.

Table 1 identifies Project personnel who were in attendance at the scoping meeting. These representatives were there to describe the project purpose and answer any questions. The list of attendees is in Appendix B.

Table 1. Scoping Meeting Project Representatives

NAME	ORGANIZATION	TITLE
Christina Rolfes	HDR	Public Involvement
Nate Dalager	HDR	PE, Project Manager
Shelley Richards	HDR	PE, Environmental Lead
Myron Jesme	RLWD	Administrator
Tammy Audette	RLWD	Office Manager
Nick Olson	RLWD	Engineering Tech II
Lee Coe	RLWD	Board Member
Terry Sorenson	RLWD	Board Member
Les Torgerson	RLWD	Board Member

The scoping meeting was held the same day as the Pine Lake scoping meeting.

3.2 Written Comments

As part of the scoping process, an Open Event Summary Report was produced at the July 12, 2016 scoping meeting where three written comments were received. Three more public written comments were sent to the RLWD website on July 1, July 8, and July 12, 2016. One comment letter dated August 2, 2016 was received from MNDNR (Appendix C) after the scoping meeting. Verbatim written comments are in Appendix B and Appendix C. A summary of the scoping and interagency concerns are as follows:

Private Landowners:

- Maintain or increase lake water levels in order to continue enjoyment of seasonal recreation.
- Concern that lowering water levels would result in water shortages.
- Belief that they are protected from 100-year flood because of flood protection at Crookston.
- Clean out drainage ditches and maintain open culverts to improve water flow between lakes.
- Install larger diameter culverts.
- Increase water level in southeast basin by 24 inches.
- Install riser on pipe under County Road 23 to increase water level by 24 inches.
- In past, water ran over the dividing line between two lower lakes and that was a good level.



MNDNR

- Described illegal raising of the culverts by 2 feet affecting County Road 2.
- West Four Legged Lake is a high diversity wetland. Maintain this. It is considered a MNDNR priority shallow lake.
- High water levels may diminish habitat for breeding ring-necked ducks and migrating waterfowl.
- Maintain 1-foot water levels.
- Enter winter at low elevation, having the ability to store water in spring when needed.
- Maintenance of constant flow through the system with one foot of water in each basin achieves habitat goals.
- Beavers in system may need to be controlled.
- Phosphorous sensitivity.
- Three existing aquatic plant species of special concern.
- Wild rice present in West Four Legged Lake. High level of cultural, ecological and economic value.
- Protect island Wildlife Management Area (WMA) in West lake.
- Water flows from the lake to Ruffy Creek. The Creek is listed on the State of Minnesota impaired waters list for fecal coliform. Investigation of the fecal coliform source is recommended.
- **MNDNR recommends:**
 1. Assess and place culverts at an elevation to maintain 1 foot water.
 2. Restore primary outlet elevation to an optimum condition to maintain species diversity.
 3. Develop an alternative that would return lake to lower level in fall to provide thorough winterkill, which may help improve/maintain water clarity.
 4. Develop an alternative that places water control structure at southwest culvert, to hold water in basins when needed for short periods in the spring (holding capacity).
 5. Develop and adopt comprehensive water level management plan for each season, each basin, and range of conditions.



4 Resource Concerns

Table 2 is a list of resource concerns based on required scoping elements outlined in the National Watershed Program Manual Section 501.24 B.

Table 2. NRCS Required Scoping Elements

ITEM/CONCERN	Relevant to proposed action?		RATIONALE
	YES	NO	
SOILS			
Upland Erosion		X	May affect lake phosphorous sensitivity.
Sedimentation	X		May affect lake phosphorous sensitivity.
Prime and Unique Farmland		X	Evaluated for all NRCS projects; some may be affected by project.
WATER			
Surface Water Quality	X		Good quality. Phosphorous sensitivity.
Surface Water Quantity	X		Flooding potential.
Groundwater Quantity		X	Groundwater should not be affected
Clean Water Act	X		Alternatives may require USACE 404 permit
Regional Water Mgt. Plans and Coastal Zone Management Areas	X		2010-2020 Clearwater County Comprehensive Local Water Management Plan. RLWD 10-year Comprehensive Plan (May 2006)
Floodplain Management	X		Roadway impacts.
Wetlands	X		Minor impacts to wetlands
Wild and Scenic Rivers		X	Not present (NRCS FOTG Section II)
AIR			
Air Quality		X	NPDES SWPPP dust suppression during construction will be enforced
Clean Air Act		X	No permits are expected to be needed; NPDES SWPPP dust suppression during construction will be enforced
PLANTS			
Endangered and Threatened Species		X	Analysis of effects required by Endangered Species Act; Not present.
Essential Fish Habitat		X	Not present
Invasive Species	X		Management plan will be developed.
Natural Areas		X	Not present in area of project.
Riparian Areas	X		Protection of these areas where existing
ANIMALS			
Fish and Wildlife Habitat	X		Evaluated for all NRCS project; Water fowl use.
Coral Reefs		X	Not present
Endangered and Threatened Species		X	Not present
Invasive Species	X		Management may be developed.
Migratory Birds / Bald and Golden Eagles		X	Purpose of action is not to take migratory birds or eagles. Actions to be implemented outside of nesting season.
HUMANS			
Flood Damages	X		Primary concern of sponsors and NRCS.
Cost, Sponsor	X		Proposals must be within the economic capacity of the sponsors (RLWD)
Cost, NED	X		Required criteria by Economic & Environmental Principals and Guidelines (P&G)
Historic Properties		X	Analysis of effects required by National Historic Preservation Act; no historic sites present in APE.
Environmental Justice		X	No impact. No EJ zones within project area.
Local and Regional Economy			Water level changes, especially high water with flooding, impedes local population and may affect recreation. Downstream effects are possible with flooding.
Potable Water Supply		X	No impact to groundwater
Public Health and Safety	X		Primary concern of sponsors and NRCS.
Recreation	X		Dependent on water levels and time of year. Landowners want higher water levels all year.
Scenic Beauty and Parklands		X	Rural agricultural area. Should not affect scenic vista and no parklands.



Table 3 lists resource concerns compiled for the project, including concerns identified by the public, sponsoring local organization, or agencies during the scoping meeting and scoping period. An analysis of resource concerns specific to this project will be completed during the development of the Draft Plan and EA. Relevant and Non-relevant resource concerns will be added or eliminated from further consideration upon concurrence by NRCS.

Table 3. Preliminary Identified Resource Concerns

Economic, Social, Environmental, and cultural concerns	Degree of Concern	Degree of Significance to Decision Making	Remarks
Human Health and Safety	High	High	Primary concern of sponsors and NRCS
Flood damages	High	High	Primary concern of sponsors and NRCS
Surface Water Quantity	High	High	Primary concern of sponsors and NRCS
Fish and Wildlife Habitat	High	High	Evaluated for all NRCS projects; MNDNR
Surface Water Quality	Moderate	Moderate	Evaluated for all NRCS project.
Wetlands and Riparian Areas	Moderate	Moderate	Analysis of effects required by Clean Water Act and Executive Order 11990; Potential for disturbance temporary and permanent of wetlands.
Recreation	Moderate	Moderate	Primary concern of landowners.
Cultural Resources	Moderate	Moderate	Analysis of effects required by the National Historic Preservation Act; historic sites present in APE. Local, not national interest.
Aesthetics	Moderate	Low	Important to landowners; Minimal, temporary impact.
Endangered and Threatened Species	Low	Low	Analysis and effects required by Endangered Species Act; no impact.
Prime and Unique Farmland	Low	Low	Evaluated for all NRCS projects; none affected by the project.
Highly Erodible Cropland	Low	Low	Evaluated for all NRCS projects; none effected by the project.
Sedimentation and Erosion	Low	Low	Minimal / temporary with BMPs / bank stabilization
Invasive Species	Low	Low	Management plan will be developed.



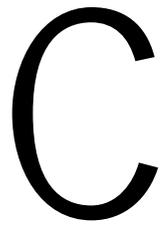
A

Project Work Team



B

Four Legged Lake Public
Meeting Summary

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MNDNR Comment Letter

