

**Grant Application Form**



*Prepared For  
Local Government*

**MN DNR  
Division of Ecological and Water Resources**

*Please return application and supporting materials to your DNR Waters  
Area Hydrologist*

**FLOOD DAMAGE REDUCTION PROGRAMS  
HAZARD MITIGATION GRANT APPLICATION**

Application Date: 1/12/2018 <i>(Amended 03/07/2018)</i>
Local Unit of Government Applicant: Lake Shamineau Lake Improvement District
Authorized Agent: Bob Koll, Chairman
Address: Number and Street: 3435 Pine View Blvd City/State: Motley, MN Zip Code: 56466 County: Morrison
Phone No: 218-296-2933 Fax: <a href="#">Click here to enter text.</a> Cell: 218-296-2933
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Contact Person (if different from authorized agent): <a href="#">Click here to enter text.</a>
Address: Number and Street: <a href="#">Click here to enter text.</a> City/State: <a href="#">Click here to enter text.</a> Zip Code: <a href="#">Click here to enter text.</a> County: <a href="#">Click here to enter text.</a>
Phone No: <a href="#">Click here to enter text.</a> Fax: <a href="#">Click here to enter text.</a> Cell: <a href="#">Click here to enter text.</a>
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**Project Funding Breakout**

Total Estimated Project Cost	<i>\$2,750,000</i>
Amount Requested From DNR Waters	<i>\$1,375,000</i>
Amount from other state agencies	0
Total share of all local government sources	0
Estimated in-kind match	0
Federal share	0
Private share	<i>\$1,375,000</i>

Check the following types of flood damage reduction activities included in project along with a quantity (if applicable) and cost or percentage of total project costs.

	Activity	Quantity		Cost or Percentage
	Acquisition	Click here to enter text.	Number of Homes	Click here to enter text.
	Levee	Click here to enter text.	Miles	Click here to enter text.
	Levee Improvement	Click here to enter text.	Lineal Feet	Click here to enter text.
	Floodwall	Click here to enter text.	Lineal Feet	Click here to enter text.
	Ring Dike	Click here to enter text.	Number of Ring Dikes	Click here to enter text.
	Ring Dike Improvement	Click here to enter text.	Number of Ring Dikes	Click here to enter text.
	Flood Storage Easement	Click here to enter text.	Acres	Click here to enter text.
	Impoundment	Click here to enter text.	Acre Feet	Click here to enter text.
	Impoundment Improvement	Click here to enter text.		Click here to enter text.
	Flood Warning System	Click here to enter text.		Click here to enter text.
	Feasibility Study	Click here to enter text.		Click here to enter text.
	Flood Insurance Study	Click here to enter text.		Click here to enter text.
	Floodplain Mapping	Click here to enter text.		Click here to enter text.
	Geographic Information System	Click here to enter text.		Click here to enter text.
	Hydrology / Hydraulic Study	Click here to enter text.		Click here to enter text.
	Pump Station/Highwater Lake Outlet	1		100%

**Please answer the following questions Yes or No:**

**Applicant must be able to answer the following four questions yes, before continuing.**

- Y X N**  A. Are local matching funds currently or imminently available?
- Y X N**  B. Has an environmental review (if mandatory) been completed for the proposed project or included in the application as part of the project?
- Y X N**  C. Is your project the least environmentally damaging (or the most environmentally enhancing) feasible and prudent alternative?
- Y X N**  D. Is your project consistent with local comprehensive watershed management planning?

**Please answer the following questions Yes or No:**

- Y X N**  A. Have the floods caused loss of lives or posed health and safety problems?
- B. Have floods damaged:**
- Y X N**  a. Residences/farmsteads?
- Y  N X** b. Critical facilities; schools, hospitals, evacuation shelters, or power plants?
- Y X N**  c. Public facilities/utilities?
- Y  N X** d. Intensively farmed land?
- C. Does the proposed project involve:**
- Y  N X** a. Protection of lives?
- Y  N X** b. The relocation of structures out of the floodway?
- Y  N X** c. The relocation of structures out of the 100-year regulatory floodplain?
- Y  N X** d. Nonstructural measures such as structural acquisition, storage easements, wetland restoration or others?
- D. Does the proposed project involve a reduction in flood damage potential to:**
- Y X N**  a. More than 10 structures?
- Y  N**  b. 5 to 10 structures?
- Y  N**  c. 1 to 5 structures?
- E. Will you be able to avoid major social impacts with the proposed project, such as:**
- Y X N**  a. Neighborhood disruption?
- Y X N**  b. Transportation disruption?
- Y X N**  c. Aesthetics?
- Y X N**  F. Has the acquisition of all necessary lands, easements and rights-of-way been included in the project proposal?
- Y  N X** G. Does your community have a flood warning system and/or emergency evacuation plan or is this part of the proposed project?
- Y X N**  H. Has your local government conducted public information or education programs about floods?
- Y X N**  I. Has your local government taken actions in the past to mitigate the effect of flooding?
- Y X N**  J. Is your local government participating in a local water planning effort?

**(Please attach a copy of the completed Minnesota Natural Heritage Information System Data Request Form).**

Please see the attached MN Natural Heritage Information System Data map.

## Project Narrative

*(Please attach resolutions authorizing application and signature, a map of the site, highlighting area(s) damaged and the location of the proposed project.)*

### **I. a.) Briefly describe and itemize the damage(s):**

Lake Shamineau is a 1600 acre lake located in Central Minnesota. *It is home to approximately 100 year round residents, 285 seasonal residents, and 4 commercial properties.* Lake Shamineau water levels have been rising, causing shoreline erosion, loss of trees, wildlife habitat destruction, loss and/or changes of aquatic vegetation, reduced water clarity, flooding of properties, challenging water quality, and causing hundreds of thousands of dollars of property damage and loss. Shoreline damages caused from ice jacking is also a significant impact to the lakeshore caused by the highwater during winter conditions. Property owners have attempted to lessen the effect of shoreline damages from ice jacking by using lake aeration systems. These systems help minimize the size of the ice slabs reducing damages from the ice jacking effects. Lake Shamineau has 32 lake aeration permits currently issued, the most for any lake in Minnesota, which is a strong indication of the significant damages the highwater is causing to the shoreline of Lake Shamineau relative to other developed lakeshores. A recent survey of lake owners found that an estimated \$1.520 million in expenses due to high water level. See the attached Expense responses sheet from property owners showing their expenses due to the high water. There is also a map showing the dwellings that have been impacted by the highwater. The lake level has steadily increased and is currently over 1.5 feet above the OHWL (Ordinary High Water Level). A survey of Lake Shamineau property owners describing property damage is attached.

### **b.) Describe the repetitive nature of the flooding:**

Lake Shamineau is located in a closed watershed basin. The total contributing drainage area to Lake Shamineau is approximately 11.91 square miles. A natural outlet does not exist for Lake Shamineau so the lake relies on groundwater movement, evaporation and evapotranspiration to maintain or lower the Water Surface Elevation (WSE). A review of the historic and recent problems appear due to the wet hydrologic cycle and the lake not having an outlet. During the more recent wet hydrologic cycle, inflows from runoff and groundwater have exceeded outflows and have caused Lake Shamineau's sustained WSE to rise. Since the early 1990's, higher than normal precipitation has occurred and the WSE has been rising above the OHWL (Ordinary High Water Level) since early 2000's. The WSE has been consistently above the OHWL since 2013 and is currently over 1.5 feet above the OHWL. Please see the attached comments from property owners on how the Lake levels have changed.

## Project Narrative

### II. **Describe the proposed project and its objective:**

*(Please include project location, a list of funding sources, how local funding will be obtained and identify implementing parties and their roles.)*

The proposed project is located at and near Lake Shamineau in Morrison County in Central Minnesota. The purpose of this project is to establish a maximum operating level of Lake Shamineau for economic and natural resource benefits. This can be accomplished by managing the high-water levels of Lake Shamineau at an elevation that protects adjacent property owners and sustains a healthy wildlife environment. The need for the project is to significantly reduce future property and shoreline damages, reduce property owner costs and provide more efficient strategic planning abilities for the LID, County and State. The proposed project involves the construction of a permanent outlet for Lake Shamineau. The proposed outlet includes a pumping station that will pump water from Lake Shamineau along a proposed alignment to a channel that will be constructed along Highway 10. The Lake Shamineau Lake Improvement District (LSLID) is the implementing party and has contracted with Houston Engineering to manage and oversee the engineering, design, permitting and construction of the project. LSLID will seek special assessment funding from all Lake Shamineau property owners and we hope the FDR Grant Assistance Program will provide additional/supplemental governmental funding assistance. While we have checked with other funding sources including Morrison County, no funds are available and there are no other known funding options. There are five exhibits attached to help understand the highwater impacts and conceptual design on Lake Shamineau. The different exhibits are a map of the impacted area, property owner comments and damages, Feasibility Report, and the Cursory Environmental review. 1) The first exhibit shows the dwellings impacted by highwater. This document has been included because it shows that a large portion of the property owners are impacted by highwater at Lake Shamineau. 2) Property owner comments can be found in the next section of documents and describes the various changes to the lake levels, damage from the highwater levels, and repairs property owners have made. The property owner comments provide insight about damage that has occurred over the years. Many of these issues occur within the areas shown on the map with dwelling impacts. The property owners also shared various damages that have been caused by the highwater, and the cost of the repairs. Also included in this exhibit is a document showing the estimated expenses for the highwater damage that has already occurred. The repairs are likely to continue to occur if nothing changes. The majority of damage has been done to shoreline, housing, and landscaping. 3) The third attachment is a draft of the Engineers Feasibility Report. This document provides insight into the conceptual design and basis of recommendation for the proposed alternative. 4) The last set of documents shows the different environmental aspects near Lake Shamineau. These documents represent that a cursory environmental review has been completed and shows the findings.

## Project Narrative

### **III. a.) Summarize the alternative flood mitigation measures that were considered to achieve the desired benefits.**

Five alternative flood mitigation measures were evaluated: 1) Do nothing – The problems with high WSE and the damaging effects it has on the adjacent shoreline would remain. There would continue to be a lack of freeboard provided for significant rainfall or spring runoff events. This could cause significant damages to lower lying properties. 2) Buy out low lying property – While this alternative was mentioned by the Soil and Water District, this alternative will not impact inflow or outflow and will not significantly increase the lake's storage amount. 3) Divert inflows – Altered hydrology including, road/trail grades without culverts, existing culverts set at high grades and blocked drainage ways due to historic standing water with limited flow have been identified, however, mitigating these factors alone will likely not have a significant impact on reducing sustained WSE. The Lake Shamineau Lake Improvement District (LSLID) intends to work with Morrison County Planning Department and Soil and Water Conservation District in an effort to improve these contributing factors. 4) Northeast Bound Outlet – While this alternative route leads to effective downstream drainage systems, there are a number of reasons that make this alternative less appealing including a high ridge that will require a significant amount of pipe boring. In addition, the DNR has expressed concern because this alternative would involve discharging flows from Lake Shamineau through Stanchfield Lake which has sensitivity issues through the DNR Fisheries Program. 5) Southwest Bound Outlet – This is the preferred route and is described in more detail in other sections of this document.

### **b.) Is the proposed project the least environmentally damaging alternative that is feasible and prudent? Why?**

Yes. The proposed project disturbs the least amount of soil, is immediately adjacent to existing roadways which makes access and construction much less damaging and the proposed piping length is the shortest of other alternatives.

(If project requires a mandatory environmental review)

### **c.) Has an environmental review been completed for the proposed project? If not, is an environmental review part of the application proposal?**

A cursory environmental review has been completed and the engineer has considered many different environmental aspects for this project. Some of the considerations that went into the design were things such as the location of Calcareous Fens, Impaired waters, and invasive plants and animals. With the main concern being the invasive species Eurasian Water-Milfoil that has invaded Shamineau Lake. To prevent the spread of the invasive species, a screen filter will be utilized in the pumping station to ensure no transfer of invasive species downstream.



Project Narrative

IV. **Describe and itemize the costs (including environmental and natural resource costs) associated with the project:**

*(Please include a budget/cost schedule. If the project will be completed in phases, please include a phasing schedule for the project.)*

Environmental costs do not need to be quantified in terms in money.

Construction Cost - \$2,020,000

Other Costs - \$730,000

Total Project Cost – \$2,750,000

Note- Other Costs include construction contingency (15%), design and construction engineering, permitting, surveying, soils investigation, legal, right of way acquisition proceedings, funding processing, and other miscellaneous costs.

*Approximate Financing Cost (Interest) - \$650,000 (Not included in this grant total)*

*Financing Cost (Interest) assumes biannual payments over a 10-year period at a 4% interest on \$2,750,000.*

**Proposed Project Phasing Schedule**

**Phase 1**

<i>Preliminary Design, Environmental Permitting</i>	<i>\$150,000</i>
<i>Right of Way Acquisition</i>	<i>\$100,000</i>
<i>Final Design, Plans, and Specifications</i>	<i>\$75,000</i>

<i>Total Phase 1 Cost</i>	<i>\$325,000</i>
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*Note- Package will be ready for construction at the completion of phase 1.*

**Phase 2**

<i>Construction (Contract Construction, Construction Engineering, and 15% Contingency) =</i>	<i>\$2,425,000</i>
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## Project Narrative

**V. Describe and itemize the benefits (including environmental and natural resource costs) associated with this project:**

*(Please describe the anticipated results of this project.)*

Environmental benefits do not need to be quantified in terms of money.

The proposed drainage system improvements to Lake Shamineau will provide the following benefits: 1) Increase the capacity of the outlet for Lake Shamineau. 2) Increase the capacity of existing original drainage upstream and downstream. 3) Reduce lake bounce duration and magnitude. 4) Significantly reduce the frequency of high lake stages exceeding the Ordinary High Water (OHW) elevation of Lake Shamineau causing damages to adjacent property owners. 5) Improve lake shore land use management and planning. 6) Reduce lake shore erosion. 7) Increase the predictability of US Hwy 10 hydraulic operations. 8) Improve the general management efforts, operation and maintenance of the drainage system.

Project Narrative

**VI. List opportunities for public involvement and describe public response to the proposed project:**

Lake Shamineau Lake Improvement District has held many meetings in which the public and other governmental entities have been invited including: 1) 2016 LSLID annual meeting in which LSLID members voted unanimously to approve funding for feasibility studies. 2) Stakeholder meeting for representatives of Scandia Valley Township, Morrison County, Todd County, Soil and Water Conservation District, MN DNR, MN DOT, etc to discuss the project and invite comments. No red flags were indicated. 3) Stakeholder meeting for downstream and affected property owners to discuss the project and seek comments. All indicated no opposition for the project and no red flags were indicated. Concerns expressed can be effectively managed in the project's operation and maintenance plan. 4) Stakeholder meeting for Lake Shamineau property owners to discuss the project and seek comments. 5) Public meeting to discuss the project and seek input from the public. 6) Public meeting of LSLID property owners to discuss the project and vote to move the project forward. Approximately 2/3 of Lake Shamineau property owners at the meeting voted to move the project forward knowing that property owners may be assessed the cost of the project.

**a.) Describe partners (if any) and their role in this project.**

LSLID anticipates many partners. Houston Engineering will have a primary role to manage and oversee the project's engineering, design, permitting and construction. This project will be a cooperative undertaking between many different agencies. Some of these agencies would be MNDNR, Houston Engineering, Morrison County, Todd County, Scandia Valley Township, and Fawn Lake Township.

Project Narrative

**VII. Flood Insurance: Do the local government units within your jurisdiction participate in the National Flood Insurance Program?**

Yes, Morrison County Participates in the NFIP.

**VIII. Zoning Ordinances: Is your local government unit administering a state approved shoreland ordinance and flood plain ordinance?**

No

**IX. Is this proposed study, plan, or project identified in a comprehensive local water plan prepared under M.S. Chapter 110B or 112 or M.S. 473.875-473.883?**

Shamineau Lake is listed as one of the lakes that Morrison County wants to increase protection from floodwaters in their 2010-2020 comprehensive watershed plan.