**PROJECT TITLE: Maximizing Ecosystem Benefits through Integrated Wetland-Watershed Planning**

**I. PROJECT STATEMENT**

Wetlands play a vital role in overall watershed health including reducing flooding, protecting water quality, and providing wildlife habitat. However, wetland planning and watershed planning often occur in different silos, whereby watershed planning is often conducted without the most current and detailed wetland information available. While newly available wetland datasets for Minnesota can help address important wetland management and watershed planning questions, they are also large and have a learning curve that hinders wider use by local officials and citizens.

The Minnesota DNR and the St. Croix Watershed Research Station (SCWRS) propose to develop a web-based tool that delivers the most current and accurate wetland information from the newly updated National Wetland Inventory (NWI) and the new Restorable Wetlands Inventory GIS datasets. These large datasets will be analyzed and processed into meaningful metrics and presented in web-based maps, tables, and graphics.

The proposed web-based tool will help users better integrate wetlands into watershed planning efforts such as BWSR’s One Watershed One Plan (1W1P), MPCA’s Watershed Restoration and Protection Strategies (WRAPS) and local watershed management plans, and will be integrated into the existing web-based tool successfully employed by the DNR’s Watershed Health Assessment Framework (WHAF).

The specific wetland metrics will be defined by consulting with an advisory committee composed of representatives from targeted wetland and watershed planning groups. Developed metrics will incorporate both simple summary statistics as well as more advanced wetland functions including, but not limited to:

* Area of wetland type by watershed
* Current flood storage volume in wetlands
* Percent wetland loss by watershed
* Location and area of drained and partially drained wetlands
* Area of wetland by type within areas of high or outstanding biological significance
* Area of wetland by type within publicly owned lands

The overall aim of this project is to help local officials and citizens leverage valuable new wetland datasets leading to better prioritization decisions about wetland protection and restoration within a watershed planning framework. Potential users include watershed and land use planners, wetland regulators, local communities, land trusts and other conservation groups

**II. PROJECT ACTIVITIES AND OUTCOMES**

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| **Activity 1 Title: Define user requirements for wetland information deliverables** | **ENRTF BUDGET:**  **$79,173** |
| **Description:**This activity will analyze the information requirements of end users. We will review existing reports and literature to identify potential ecological metrics. An advisory committee of 6-7 state and local watershed and wetland managers will help identify specific information deliverables that are required to meet their planning needs. We will augment this input with a web-based survey for a wider range of potential users. Development of metrics will be prioritized based on their potential value to planning efforts as well as the feasibility to generate these metrics on a statewide scale. |  |

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| **Outcome** | **Completion Date** |
| *1. User requirements documentation* | *December 2020* |

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| **Activity 2 Title: Develop ecological and hydrological metrics for wetlands and watersheds** | **ENRTF BUDGET: $**  **$205,172** |
| **Description:**The SCWRS will have the primary role for this activity. This will involve compiling and analyzing the best available data for watershed and wetlands and evaluating the feasibility of computing the metrics defined by the users groups. A database of wetland and watershed metrics will be created based on user input for a variety of scales, supporting the ranking of watersheds and sites based on potential ecosystem service benefits. |  |

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| **Outcome** | **Completion Date** |
| *1. Create database of wetland and watershed metrics* | *November 2021* |
| *2. Document computational procedures and guidance on interpretation of results* | *February 2022* |

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| **Activity 3 Title: Develop, test, and deploy web-based wetland planning tool** | **ENRTF BUDGET:**  **$222,172** |
| **Description:**The DNR Watershed Health Assessment Framework team will have the primary role for this activity. This activity will involve developing, testing, and deploying an interactive map designed to assist a broad range of users by making the extensive data related to wetland planning more accessible. |  |

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| **Outcome** | **Completion Date** |
| *1. A web-based application to support integrated wetland and watershed planning* | *October 2022* |
| *2. User guidance and support material* | *February 2023* |

**III. PROJECT PARTNERS AND COLLABORATORS:**

The project team includes:

* Steve Kloiber (MNIT@DNR) – Project manager and wetland monitoring and analysis coordinator
* Beth Knudsen (DNR – EWR) – Watershed health assessment, program coordinator
* Ben Gosack (DNR – EWR) – Watershed health assessment, senior natural resource specialist
* Jason Ulrich (SCWRS) – Assistant scientist, lead data analyst

Collaborators in the monitoring network design and site selection include staff from BWSR, MPCA, and 6-7 representatives from local government units. The SCWRS will receive $200,000 of the project funds for their role. The remaining funds will be spent within DNR or MNIT@DNR.

**IV. LONG-TERM IMPLEMENTATION AND FUNDING:**

The Ecological and Water Resources Division of the DNR is committed to ongoing application support of this planning tool. EWR allocates funds each year to provide for routine minor maintenance of software applications created to support the division’s business goals.

**V. SEE ADDITIONAL PROPOSAL COMPONENTS:**

**A. Proposal Budget Spreadsheet**

**B. Visual Component or Map**

**C. Project Manager Qualifications and Organization Description**