

319 narrative

Conservation Marketplace of Minnesota (CMM) provides a system for market-driven payments for agricultural Best Management Practices (BMPs) that increase ecological value. In the past three years, CMM has created an operational framework with a network of buyers and sellers of environmental credits who are educated and engaged in a market-based conservation approach. CMM connects and oversees voluntary ecosystem market transactions resulting in measurable environmental benefits. Market research indicates that buyers may be interested in investing in water storage BMPs.

This project will develop and test a metric designed to quantify and report the water storage benefits. In conjunction with the metric development the team will select and implement at least 5 to 10 water storage BMPs. These new BMPs and several existing BMPs will be used in a vetting process to evaluate the water storage calculator performance. Enhanced water storage provides benefits through pollutant reduction and peak runoff flow and rate reductions. The project will also demonstrate how Payments for Ecosystem Service programs can integrate into a variety of efforts, including: flood reduction strategies, drainage authority assessments and drinking source water protection efforts.

CMM operates within the Sauk River Watershed the Greater Blue Earth River Basin, Middle Minnesota and Lower Minnesota River watersheds. Turbidity TMDLs that identify near channel sources of sediment as significant exist in the Getchell, Stony and Unnamed Creek watersheds within the Sauk, turbidity TMDLs also exist on many reaches within the Blue Earth River and Minnesota River mainstems. The near channel sources supply an ever increasing sediment load as the result of channel destabilization associated with the pressures of altered landuse and enhanced drainage systems.

The first task is to **develop a water storage calculator** generating repeatable measurable units, such as cubic feet stored or volume and rate of storage, for structural and vegetative BMPs. The calculator will be developed and tested by a professional engineer, but ultimately be used by SWCDs, NRCS, crop consultants and other natural resource professionals. The water storage calculator may be used in public programs such as eLINK, which is the Minnesota Board of Water and Soil Resources' (BWSR) electronic reporting and tracking system for conservation projects, as well as in ecosystem service markets.

A 10-15 member "**Water Storage Learning Group**" will be established to engage in dialog and generate pragmatic input on how to effectively store water in the rural landscape. Project partners will bring together a diverse team to tackle the subject. Members of the Water Storage Learning Group may include, but are not limited to, a DNR hydrologist, South Central Technical Services engineer, private drainage professional, SWCD technician, MPCA hydrologist, farmers/citizens, BWSR representative, University of Minnesota, contractual project partners and other erosion and hydrology specialists. The group will meet semi-annually throughout the project to talk about feasible ways to increase water storage, recommend adjustments and validate the water storage calculator and discuss how to help drive change.

New and existing water storage BMPs will be tested in development of the water storage calculator. Existing BMPs to be tested will include, but are not limited to, the following projects: 2-stage ditch, controlled drainage, offline storage and several vegetative practices. Selected sites will be quantified in pollutant reduction, key runoff flow and rate reductions by using an accurate, yet simple and transferrable matrix regarding the benefits provided. The matrix will be developed, tested and improved as a deliverable of this project. This innovative matrix will be based on a blend of best available science regarding runoff and channel flow hydrology while being tailored to be readily useable by conservation delivery professionals. The matrix design will quantify different types of water storage BMPs and provide a unified method for field conservationists to correlate the local environmental benefits to downstream issues like de-sequencing of hydrographs, reducing stream power and the resulting erosion from altered systems.

Approximately one-third of the project budget will be spent on **implementation of new practices and projects** in the Minnesota and Sauk River watersheds. At least 5 to 10 practices/projects will be implemented that demonstrate increased water storage and reduce nonpoint pollution. Additional water storage practices will be implemented using non-federal match dollars provided by GBERBA and Stearns SWCD. BMPs will include both structural and vegetative conversion BMPs ranging from field scale to small watershed scales. The selection of the BMPs will be accomplished solely at the discretion and decisions of local conservation professionals working with their agricultural producer(s). The project may, and indeed desires to leverage existing developing projects, but at no time will the public money exceed 75 percent of the implementation costs. The list of BMP opportunities currently includes: perennial vegetation, controlled drainage, offline storage (wetland or detention ponds at a larger scale) and cover crops. The Water Storage Learning Group may also introduce new and innovative BMPs to be implemented during this 3-yr project.

The final task is related to **outreach, education and demonstration**. The water storage calculator and effective BMPs will be demonstrated to a minimum of 20 conservation professionals (3-5 highly technical professionals in yr 1, 8-10 natural resource professionals in yr 2, and 10 or more diverse professionals in yr 3). The professionals will be asked to apply the calculator on three sites. Effort will be made to reach out to technical service providers, certified crop advisors, SWCDs, and NRCS so this technology and thinking can be applied in everyday work. A goal of this project is to provide resources to support a shift in how land managers are delivering their work. Trainings will be partnered with other efforts, when possible, such as SWCD Annual Conference, SWCS meeting or the Nutrient Tracking Tool (NTT) trainings, which will also be offered by project partners. We will offer 3 field days per year [9 total] demonstrating and discussing these techniques. In addition, we will offer two technical workshops each winter [6 total] focusing on water storage issues and the water storage calculator.

The Minnesota River Board (MRB) will be responsible for project management and coordination with Dr. Shannon Fisher leading project efforts. The Assistant Project Coordinator will complete administrative duties (budget management, contracting and subcontracting); the Ecosystem Services Specialist will coordinate daily operations and ensure project reports are submitted as scheduled. Kieser and Associates will lead development of the water storage calculator. MRB will facilitate the Water Storage Learning Group and organize efforts to identify BMPs to test the calculator. The Greater Blue Earth River Basin Alliance and Stearns SWCD will implement BMPs; Rural Advantage will lead the education, outreach and demonstration component.

Conservation Marketplace of Minnesota has begun to establish mechanisms for civic engagement. Policy, Technical, and Aggregator Committees have formed in each of the geographic project areas. These committees represent a cross-section of stakeholders: farmers, crop consultants, elected officials, local and state agency and municipal representatives. In the Sauk Watershed, a farmer listening session and field representative training session was successfully held. Crop consultants are important in CMM's structure; CMM works through crop consultants and local conservation delivery professionals, who are viewed as trusted professionals to the producer. CMM has demonstrated an ability to bridge communication gaps. In the Cold Spring Source Water Protection project, city staff and local landowners are able to work through CMM to implement BMPs, even though earlier attempts had been ineffective.

The MRB is dedicated to innovative methods of civic engagement. The MRB was an early financial supporter of the Upstream-Downstream Friendship Tour, which was the model for the recent "New Approaches to Watershed-Based Civic Engagement" workshop held earlier this year. CMM affiliates continue to participate in innovative civic engagement programs in the Le Sueur Watershed and elsewhere around the state.

Final products will include a water storage calculator to be used conservation delivery professionals, 5-10 fully implemented new water storage BMPs, establishment of a diverse Water Storage Learning Group, coordination of over 20 training and outreach events, and semi-annual and final reports.

Schedule and Milestones

Year	Milestones
1	<ul style="list-style-type: none"> Develop water storage calculator Establish water storage learning group (meet 2 times/yr) Select 5-10 implementation sites and several other existing sites used to assess and enhance calculator Begin project implementation Field Days [3], Workshops [2] Evaluate calculator with 3-5 technical professionals (engineers) Semi-annual reporting
2	<ul style="list-style-type: none"> Modify water storage calculator Facilitate water storage learning group (meet 2 times/yr) Fully implement 5-10 new water storage BMPs Train 8-10 Conservation Delivery Professionals for further implementation assessments Presentations [3], Field days [3], Workshops [2] Apply evaluations and revisions, semi-annual reporting
3	<ul style="list-style-type: none"> Final modifications to water storage calculator Facilitate water storage learning group (meet 2 times/yr) Train 10-20 additional Conservation Delivery Professionals Presentations to new audiences [3] Field Days [3], workshops [2] Evaluation and Revisions Applied in Final Report, Semi-Annual and Final Reporting
