

MEETING DATE: June 9, 2016

TITLE: Authorization to Execute a Contract for Design and Construction Oversight for the Jennings Bay Wetland Restoration Project

RESOLUTION NUMBER: 16-057

PREPARED BY: Tiffany Schaufler

E-MAIL: tschaufler@minnehahacreek.org

TELEPHONE: 952-641-4513

REVIEWED BY: Administrator Counsel Program Director:
 Board Committee Engineer Other

WORKSHOP ACTION:

<input type="checkbox"/> Advance to Board mtg. Consent Agenda.	<input type="checkbox"/> Advance to Board meeting for discussion prior to action.
<input type="checkbox"/> Refer to a future workshop (date): _____	<input type="checkbox"/> Refer to taskforce or committee (date): _____
<input type="checkbox"/> Return to staff for additional work.	<input type="checkbox"/> No further action requested.
<input checked="" type="checkbox"/> Other (specify): Seeking final action at June 9, 2016 Board Workshop.	

PURPOSE or ACTION REQUESTED:

Authorization to execute a contract with RESPEC for design and construction oversight services for the Jennings Bay Wetland Restoration Project.

PROJECT/PROGRAM LOCATION:

City of Minnetrista land east of the Orchard Cove development (east of County Road 110 N and Orchard Cove)

PROJECT TIMELINE:

- June 2016: Award design services
- July 2016: Review of preliminary design
- August 2016: Review final design
- September 2016: Construction bid award
- October-November 2016 Construction

PROJECT/PROGRAM COST:

Fund name and number: Highway 101 Causeway Reconstruction, 3149

Current budget: \$1,604,308

Expenditures to date: \$0

Requested amount of funding: \$31,625

PAST BOARD ACTIONS:

- October 24, 2013 – Resolution to express support for working with Hennepin County on a plan for vegetated reinforced soil slopes in the Grays Bay causeway, and direct the staff to prepare a plan in consultation with the County, along with a project budget and cost share resolution.
- December 12, 2013 – Resolution to direct staff to:
 1. Communicate its commitment to reviewing the Bushaway Road Project for compliance with all MCWD rules, recommending enhancements to the Project as submitted by Hennepin County beyond current regulatory requirements for which the MCWD would take financial responsibility;
 2. These enhancements would include the design, construction and maintenance of the Wayzata Bay Restoration Shoreline Project, to be installed after the County has completed seawall construction and with a County funding contribution equal to the cost of the riprap design presented on October 24, 2013;
 3. The MCWD enhancements also would include improvements to stormwater management facilities, and the MCWD will be responsible for enhancements to the Project beyond those presented by the County on October 24, 2013 that exceed MCWD requirements for the entire project within the City of Wayzata.
- January 23, 2014
 - Approval of MCWD Permit 13-460
 - Resolution 14-008: Authorization to executed a Cooperative Agreement with Hennepin County for CSAH 101
- October 23, 2014 – Resolution 14-088: Authorization to execute a Cooperative Agreement with the City of Minnetrista to effect a transfer of the fee title interest in 3.26 acres of land to MCWD, for purposes of floodplain mitigation to fulfill the District’s regulatory obligation under permit 13-460 Bushaway Road.
- February 26, 2015 – Public Hearing for Highway 101 Causeway Reconstruction Project
- March 26, 2015 – Ordering of Highway 101 Causeway Reconstruction Project
- April 28, 2016 – Resolution 16-043: Authorization to Execute Contracts for Design and Construction Oversight for the Highway 101 Causeway Shoreline Reconstruction Project

SUMMARY:

Following review of Hennepin County’s proposed improvement to CSAH 101, at the October 24, 2013 Board Meeting, the Board of Managers resolved to express support for working with Hennepin County to develop a vegetated solution to the Grays/Wayzata Bay Causeway shoreline, including a project budget and plan to finance.

Through the cooperative agreement between Hennepin County and MCWD, the County provided for the District to implement a shoreline restoration project within the corridor, following road construction. This planned work to stabilize Lake Minnetonka shoreline with vegetated reinforced soil slopes (VRSS), similar to those used on Big Island, will fill some of the 100 year floodplain. Consequently, as a condition of District permit 13-460, MCWD obligated itself to provide “compensatory storage for floodplain fill along the causeway due to vegetative slope construction.”

The District’s cooperative agreement with the City of Minnetrista provided for the City to transfer the fee interest in the project parcel to the District. This, however, requires legislative action because the parcel is

**DRAFT for discussion purposes only and subject to Board approval and the availability of funds.
Resolutions are not final until approved by the Board and signed by the Board Secretary.**

former tax-forfeit land subject to a reverter interest in the State of Minnesota. This legislative action has not been secured, however the agreement further provides that absent such a transfer, the District may enter the parcel to construct and maintain the project indefinitely.

In March 2015, the Board ordered the Highway 101 Causeway Reconstruction Project which includes both the causeway shoreline restoration work ("causeway element") and the independent but associated flood storage replacement work ("flood storage element").

Staff distributed a Request for Proposals (Attachment 1) for design and construction oversight services for the flood storage element and received proposals from three consulting firms: RESPEC, Wenck Associates, Inc., and SRF Consulting Group, Inc. A staff selection committee consisting of the members of the Planning, Projects, and Project Maintenance & Land Management programs evaluated the proposals following the established procedure (see Attachment 2). Under this procedure, methodology and experience are weighted at 70-80 percent and cost is weighted at 20-30 percent. The selection committee agreed that RESPEC has the strongest proposal (Attachment 3) and demonstrates the best understanding of the project goals and needs.

Consultant	Submitted Budget
RESPEC	\$ 31,625
Wenck Associates, Inc.	\$ 28,893
SRF Consulting Group, Inc.	\$ 34,250

Staff is requesting that the Board authorize the District Administrator to enter into a contract with RESPEC for design and construction oversight services for an amount not to exceed \$31,625, and that the Administrator be authorized to use an additional contingency of 10 percent of the not-to-exceed as in his judgment circumstances require.

ATTACHMENTS:

- Attachment 1: MCWD Scope of Work Report: Design of Jennings Bay Wetland Restoration Project
- Attachment 2: Proposal Evaluation
- Attachment 3: Procedure RESPEC proposal and budget for engineering design and construction oversight services

RESOLUTION

RESOLUTION NUMBER: 16-057

TITLE: **Authorization to Execute a Contract for Design and Construction Oversight for the Jennings Bay Wetland Restoration Project**

WHEREAS, the Minnehaha Creek Watershed District (MCWD) has adopted a watershed management plan (WMP) in accordance with Minnesota Statutes §103B.231; and

WHEREAS, the WMP identifies the Highway 101 Causeway Reconstruction Project (“Project”) as a capital improvement project for the purpose of water quality and ecological benefits through the promotion of bioengineering techniques within the Lake Minnetonka subwatershed;

WHEREAS, the causeway shoreline restoration work (“causeway element”) involves fill within Lake Minnetonka floodplain and therefore, in accordance with District Rules and District permit 13-460, requires that the Project also include replacement of flood storage volume (“flood storage element”); and

WHEREAS, in 2014, the District and City of Minnetrista have entered into a cooperative agreement concerning a 3.26-acre parcel of degraded floodplain wetland riparian to the northwestern corner of Jennings Bay that the City owns as former tax-forfeit conservation land subject to a right of reverter in the State of Minnesota;

WHEREAS, under the agreement the District may enter the parcel to construct and perpetually maintain the flood storage element of the Project, in exchange for which the District will explore including additional flood volume storage in the design to meet the City’s requirement for the Enchanted Lane improvement and will incorporate such storage as feasible, with an allocation of costs as stated in the agreement; and

WHEREAS, on March 26, 2015, the MCWD Board of Managers ordered the Highway 101 Causeway Reconstruction Project; and

WHEREAS, staff solicited proposals from a pool of consultants for engineering services to design the flood storage element of the Project; and

WHEREAS, MCWD may exercise its judgment in making decisions to retain professional services, and in this instance used an internal evaluation protocol weighting methodology, experience and budget; and

WHEREAS, the MCWD Staff selection committee received and evaluated three proposals according to this protocol and recommends awarding the contract to RESPEC, and the Board of Managers concurs in the evaluation and the recommendation reached.

THEREFORE, BE IT RESOLVED, that the Minnehaha Creek Watershed District Board of Managers hereby authorizes the District Administrator to execute a contract with RESPEC for engineering design and construction oversight services for the flood storage element of the Highway 101 Causeway Reconstruction Project for an amount not to exceed \$31,625, and authorizes the District Administrator to use an additional contingency of 10 percent of the not-to-exceed as in his judgment circumstances require.

Resolution Number 16-057 was moved by Manager _____, seconded by Manager _____.
Motion to adopt the resolution ___ ayes, ___ nays, ___ abstentions. Date: _____.

Secretary Date: _____



Scope of Work Report

Design of Jennings Bay Wetland Restoration Project

1. **PURPOSE:** To identify the plan, scope, technical requirements, schedule and budget for design and construction observation of the Jennings Bay Wetland Restoration Project. The design proposal should include all the variables that need to be considered when designing all parts of the project and how these systems work together.
2. **RESOURCES:**
 - a. MCWD Hydraulic, Hydrologic, Pollutant Loading Study, 2003
 - b. Wenck Associates Memo: Lake Minnetonka Floodplain Mitigation Site – October 17, 2014
 - c. Wetland Delineation Report – September 2014
 - d. WCA Notice of Decision – October 27, 2014
3. **BACKGROUND:**

Project

The Minnehaha Creek Watershed District (District) wishes to restore a wetland and create flood volume storage on Lake Minnetonka to offset proposed floodplain fill associated with a District bioengineering project along the Wayzata Bay causeway. The District is currently designing the Wayzata Bay causeway project and preliminary concepts put the estimated floodplain fill at approximately 1,000 cubic yards. The District in coordination with the City of Minnetrista, have identified a city owned parcel along Jennings Bay to implement the floodplain mitigation project. The city parcel is located east of CR 110 North and east of Orchard Cove (see Figure 1). The City of Minnetrista may also have a need to create floodplain storage to mitigate a city road project.

Since the City of Minnetrista is the property owner of the parcel, a cooperative agreement with the District has been executed to secure the necessary rights to complete the restoration project. The city has also secured the rights to cross private property as necessary for the design, construction and maintenance of the project.

The intended design approach for the project would be to lower the grade across the interior portions of the parcel by means of excavation and soil scraping and to revegetate with native species to reestablish a shallow marsh wetland (see Figure 2). Additionally, if other water quality improvements on the site are feasible those design considerations will also be considered.

Figure 1- Project Site

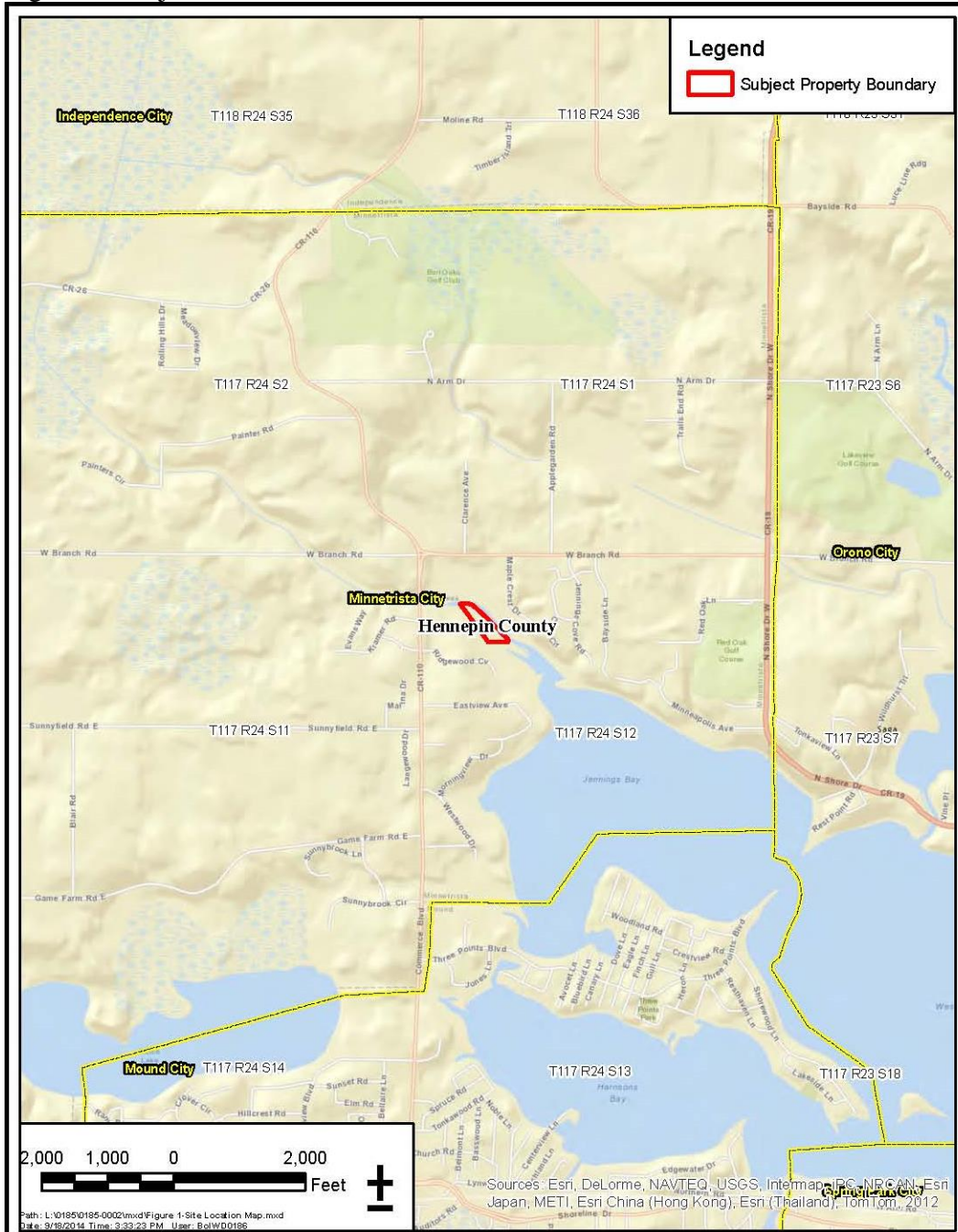
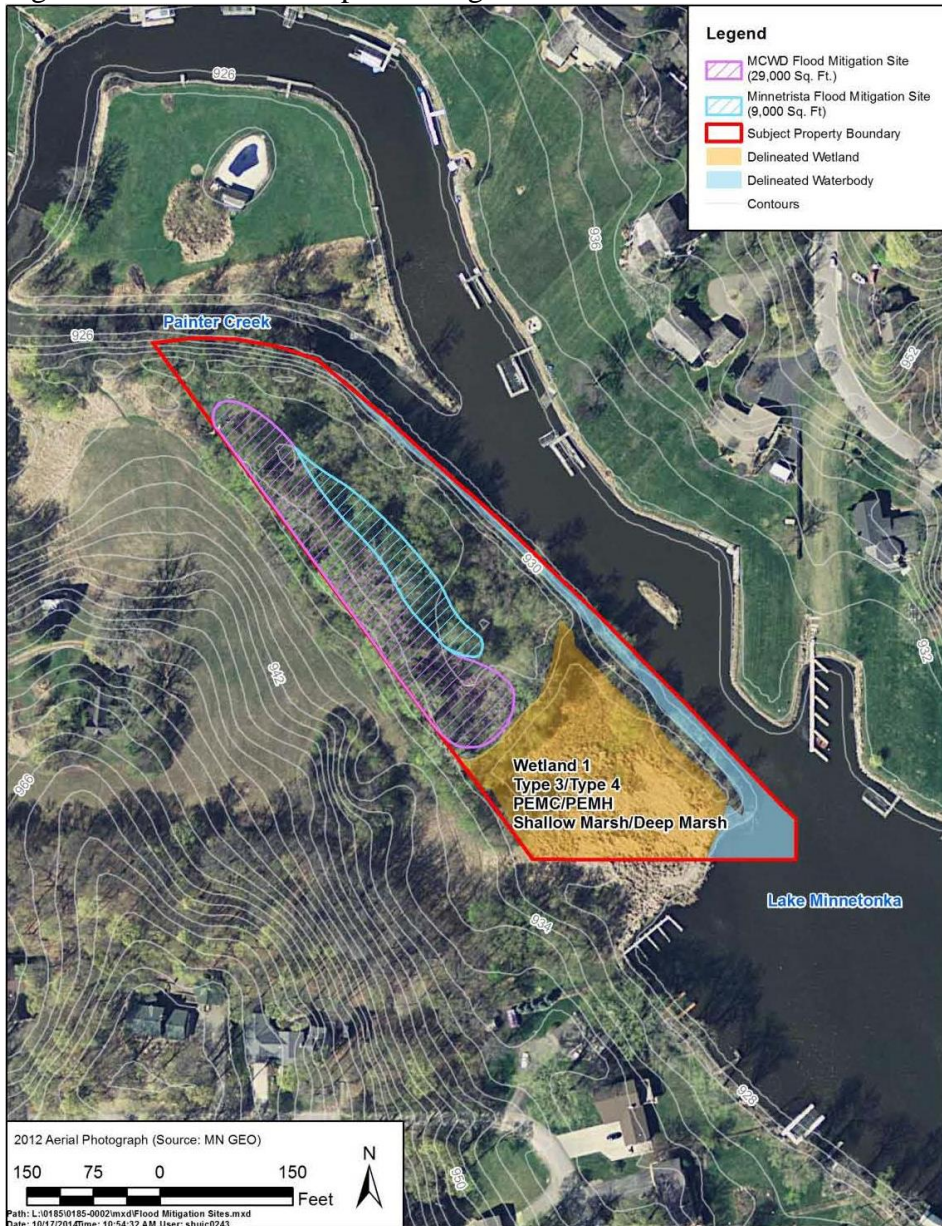


Figure 2 – Potential Floodplain Mitigation Areas



Goal

The main goal of this project is to create floodplain storage through the restoration of a likely filled wetland on the parcel.

Budget

MCWWD has budgeted a total of \$200,000 to cover the costs of design, construction and the first three years of maintenance for the project.

Timeline

The project is scheduled to be designed in the summer of 2016. Anticipated construction is fall of 2016.

4. PROJECT DELIVERABLES (CONTRACT SERVICES):

MCWD will contract the services of a CONSULTANT to complete a number of task items (detailed below):

a. Data Collection:

- CONSULTANT will collect and review project resources listed in section 2.
- CONSULTANT will collect additional survey data and site condition information as needed to develop site plans and biddable construction documents.

b. Preliminary Engineering and Design Draft Report:

- CONSULTANT will prepare 60% Preliminary Engineering and Design Draft Report suitable for review by District staff, City of Minnetrista staff, the MCWD Board and regulatory agencies.
- Plan sheets shall include:
 - Title Sheet with Location Map
 - Topographic Survey
 - Statement of Estimated Quantities
 - Removal Plan
 - Construction Notes
 - Stormwater Pollution Prevention Plan
 - Grading and Drainage Plan
 - Erosion Control Plan & Details
 - Site Details
 - Planting Plan
- Provide preliminary opinion of probable costs.
- Provide quantification of benefits from the project
- Prepare an operations and maintenance plan which provides for short and long-term maintenance of vegetation and other necessary project components included in the construction contract.
- Assumptions:
 - Designs must meet the technical standards and requirements of all relevant review agencies.
 - CONSULTANT will submit Preliminary Engineering and Design Draft Report to MCWD and City of Minnetrista for review and approval. CONSULTANT will meet with MCWD staff to discuss Draft Report and preliminary site plans.

c. Final Engineering and Design Report:

- CONSULTANT will utilize input on the draft report to complete a Final Engineering and Design Report for District staff review. In addition to the elements described in the draft report, the final report will contain the following:

- Project plans and specifications suitable for construction and regulatory review, including:
 - Title Sheet with Location Map
 - Topographic Survey
 - Statement of Estimated Quantities
 - Removal Plan
 - Construction Notes
 - Stormwater Pollution Prevention Plan
 - Grading and Drainage Plan
 - Erosion Control Plan & Details
 - Site Details
 - Planting Plan
- A detailed opinion of probable costs that itemizes the projected costs of implementation, including mobilization, grading, planting, erosion control materials. Cost-estimates must also include estimated long-term management costs projected annually.
- An operations and maintenance plan which provides for short-term maintenance of vegetation and other necessary project components included in the construction contract as well as long-term management of the project.

d. Permitting:

- CONSULTANT will prepare permit applications and all required submittals to all applicable agencies at the 60% design stage. Permits are anticipated to be needed from the following agencies: US Army Corps of Engineers, City of Minnetrista, and MCWD.
- CONSULTANT will develop a monitoring plan if required by the US Army Corps of Engineers.

e. Design Meetings:

CONSULTANT will plan for the following meetings/coordination and provide meeting minutes:

- Kickoff meeting with MCWD staff
- Coordination meetings with City of Minnetrista staff
- Coordination with other regulatory agencies as needed to obtain permits
- Meeting with MCWD staff to review 60% Preliminary Design Report and site plans
- Prepare for and attend District Board meeting at 60% design stage
- Meeting with MCWD staff to review 100% Final Design Report and site plans
- Stakeholder/neighborhood meeting
- Regular check-in calls/updates with MCWD project manager

f. Construction Bid Documents and Bidding:

CONSULTANT will:

- Prepare 100% final, signed plans (including sheets as noted in Task 4c), technical specifications, including plant guarantees and quality control

- Prepare engineer's cost estimate
- Consultant will prepare hard-copy bid specification packages and provide MCWD a PDF version of the bid specification package
- Prepare NPDES permit application in signature-ready format.
- Bid Coordination:
 - Prepare advertisement for bid.
 - Prepare for and attend pre-bid meeting.
 - Respond to bidder questions and prepare addenda, if necessary.
 - Bid opening.
 - Tabulate bids and prepare recommendation for contract award.
- Assumptions:
 - District staff will provide the contract portion of the specifications. The consultant will update the contract portion with project specific information including bid advertisement. The consultant will prepare the technical specifications including the bid forms.

g. Construction Observation & Administration

CONSULTANT will provide on-site supervision of contractor for site specific placement of prescribed practices. Anticipated activities include:

- Prepare for and attend pre-construction meetings with MCWD and Contractor
- Perform construction staking
- Observe construction operations at key points of project. Attend construction meetings as needed over the construction period.
- Perform post-construction survey and provide as-built record drawings and electronic GIS files.
- Contract management: Prepare quantities, pay requests and change orders
- Attend final inspection and prepare punch list

5. SUBMITTAL FORMAT:

All work submitted under this Scope of Work shall be submitted in the following formats:

- a. Written sections of the draft report shall be prepared using Microsoft Word processing software. Hard-copy submittals shall be on 8.5- by 11.0-inch white paper with accompanying electronic copies on compact disk. The report shall use the "Times New Roman" 12 font. The left-hand margin shall be 1 inch to allow for binding of the report.
- b. Plan sets may be submitted as 11 x 17 PDFs or other formats, as approved by District Staff.
- c. All drafts and final reports will be free of any corporate logos or commercial identification. MCWD will allow for identification of the plan author at the beginning of the report and credited references where necessary and appropriate.
- d. The CONSULTANT will submit two hard copies and one electronic copies of the draft report for review.

Attachment 1

- e. The CONSULTANT will submit two hard copies and one electronic copies of the Final report.
 - f. The CONSULTANT will submit any electronic ArcGIS or AutoCAD files created (including metadata): i.e. shape files, metadata in reference to shape files, line and point files, layer files (which correspond to hard copy version, etc.)
6. SCHEDULE & BUDGET:
- a. Consultant will identify a Schedule and Budget for each task item and subtask identified in Section 4 using the spreadsheet provided as Exhibit B.
 - b. The tentative schedule for construction calls for construction work in the fall of 2016.



MCWD Consultant Selection

PROCEDURE

Proposals for feasibility and design services will be subject to competitive evaluation. The District will send out a Request for Proposals (RFP), to which consultants will respond with a Statement of Methodology and Experience (SME) and a sealed project budget. SME will include background information about the consulting firm and the proposed project team along with information specific to the execution of the project (see Criteria below). First the SME will be evaluated according to the criteria by a committee of MCWD staff. Next the cost estimates will be opened and evaluated. Both total project cost and cost per hour of work will be considered. The committee will weight methodology and experience at 70 to 80% and cost at 20 to 30% during the selection process. The proposal with the best combined evaluation will be recommended for approval to the Board of Managers.

CRITERIA

The District will evaluate the quality of the SME based on the following criteria:

- **Methodology**
 - *Project Understanding:* Does the proposal make it clear that the consultant fully understands the scope, goals, and technical requirements of the project?
 - *Completeness and Specificity:* How fully does the proposal explain what the consultant will do to develop the required deliverables?
 - *Identification of Needs:* Does the proposal carefully consider what resources will be required to complete the tasks, including staff time, additional technical information, etc.?
 - *Innovation:* Does the approach incorporate modern or cutting edge techniques and analysis consistent with a technically sound product, where appropriate and requested in the RFP?

- **Experience**
 - *Company Experience:* What other, similar projects has the consultant performed that are directly related to the proposed work (evaluated via the proposer's submittal materials)?
 - *Staff Experience:* What qualifications and work experience do the proposed staff members or subcontractors bring to the project?
 - *Area Knowledge:* Does the company or any of the project team have specific knowledge about the project area that would aid in the study?

We collaborate with public and private partners to protect and improve land and water for current and future generations.

RESPEC

RESPONSE TO REQUEST FOR PROPOSAL **for Design of Jennings Bay Wetland Restoration Project**

Submitted to
**Minnehaha Creek
Watershed District**
15320 Minnetonka Blvd
Minnetonka, MN 55345

Submitted by
RESPEC
1935 County Road B2 W
Suite 230
Roseville, MN 55113

Due June 2, 2016
RSI/P-3451

June 2, 2016

Ms. Tiffany Schaufler
Project and Land Manager
Minnehaha Creek Watershed District
15320 Minnetonka Blvd
Minnetonka, MN 55345

Dear Ms. Schaufler:

RE: Request for Proposal for Design of Jennings Bay Wetland Restoration Project

On behalf of the entire RESPEC team, we are pleased to submit this proposal for the Jennings Bay Wetland Restoration Project. Our proposal details our project team, relevant project experience, project approach, schedule, and fees. The following items highlight some of the reasons why we are the best choice to provide these services.

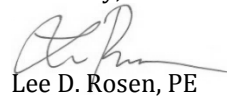
We are committed to providing top quality work with the most responsive service possible, just as we did with the Long Lake Creek Project. The Long Lake Creek Project team met all of the project deadlines while on an aggressive schedule, provided 60 percent design plans that were practically constructible, did not have any design change orders, and had a construction project that came in below budget and on time. We will work just as closely with the Minnehaha Creek Watershed District (MCWD) for the Jennings Bay Wetland Restoration project to meet all of the project goals on schedule and within budget by providing floodplain storage and creating an aesthetically pleasing restored wetland that improves water quality and habitat. We take pride in receiving repeat work from clients and look to achieve the same results as a part of this project.

Our diverse, experienced team was assembled to meet all of the technical aspects of the project. The team members at RESPEC have an established history of guiding projects from design through construction, especially restorations. RESPEC's commitment to this project is highlighted by our incredibly experienced Quality Assurance/Quality Control (QA/QC) staff who will oversee the different project elements at no additional cost to the project to ensure that they are delivered at the highest level possible. We have also enlisted the services of Prairie Restorations Inc. who is an experienced leader in native vegetation restorations in Minnesota.

The project approach and overall fee that we have provided will enable us to successfully deliver the project to our high level of internal standards and those of the MCWD. We have spoken with MCWD staff and reviewed the existing studies and plans to understand the full extent of what is needed for a successful project. We believe our approach clearly demonstrates how we will execute all to the project elements to the highest degree. We have provided competitive hourly rates and have accounted for sufficient time to work with MCWD while staying within our proposed fee.

Thank you again for reviewing this proposal. If you have any questions or would like to discuss how RESPEC can provide assistance to the Minnehaha Creek Watershed District, please contact Mr. Lee Rosen by email (lee.rosen@respec.com) or telephone (651.305.2275).

Sincerely,



Lee D. Rosen, PE
Staff Engineer



Julie A. Blackburn
Minnesota Area Manager

LDR:mth
Enclosure

cc: Project Central File 996-3520 — Category B

OUR BACKGROUND



We have assembled a team of three distinguished consulting firms (RESPEC, Prairie Restorations, and Westwood) with unique specialties to provide the Minnehaha Creek Watershed District (MCWD) with the best team possible for the Jennings Bay Wetland Restoration Project. Each firm's project-specific roles are listed in green below the firm name, and overall background of the firm is provided in the subsequent text.

RESPEC

Project Management | Design and Engineering | Permitting | Bid Phase | Construction Observation | Quality Assurance/Quality Control

RESPEC is a client-focused, consulting and services company that specializes in developing innovative and sustainable solutions to critical, environmental issues through collaboration and partnership. Our 100 percent employee-owned company has been advising clients for 44 years, with the majority of our work performed for returning clients. RESPEC uses theoretical science to develop applied science solutions. Through outstanding contract performance, sound management, quality practices, and applying appropriate technology, RESPEC has established a reputation as a responsive technical services provider that is sensitive to client needs.



We are committed to providing a high-performance team through our collective strengths, our dedication to our clients, and our collaborative spirit. RESPEC comprises engineers and scientists who are experts at integrating the technical aspects of water resources into effective watershed management. As a recognized leader in the Midwest in watershed and environmental management, we have a strong background in environmental planning and permitting, environmental hydrology, water resources engineering, natural resources and conservation, geology, and ecological restoration services. Our experienced staff has a reputation for being knowledgeable, innovative, and resourceful, while maintaining a genuine concern for client needs.

Prairie Restorations

Invasive Management | Wetland Planting Plan | Vegetation Performance Specifications

Prairie Restorations, Inc. (PRI) has been dedicated to the restoration and management of native plant communities for over 39 years. We are fortunate to have worked with thousands of clients on a wide variety of projects in both the public and private sectors throughout the Upper Midwest.

The PRI staff currently consists of 45 full-time professionals and approximately an equal number of seasonal employees who operate out of six Minnesota locations. Most of the staff has B.S. degrees in natural resource related fields such as biology, forestry, horticulture, or wildlife. As a full-service restoration company, PRI is able to provide our clients expertise and service in all facets of native landscape restoration. Along with consulting, design, installation, and land management services, we also produce our own local ecotype seed and plant materials which are used on all of our projects.

The PRI team is committed to and passionate about protecting and enhancing our valuable natural resources. This dedication is brought to each and every one of our projects. We are proud to offer the best expertise, services, and products available in the industry and appreciate the opportunity to provide you with this proposal.

Westwood Professional Services

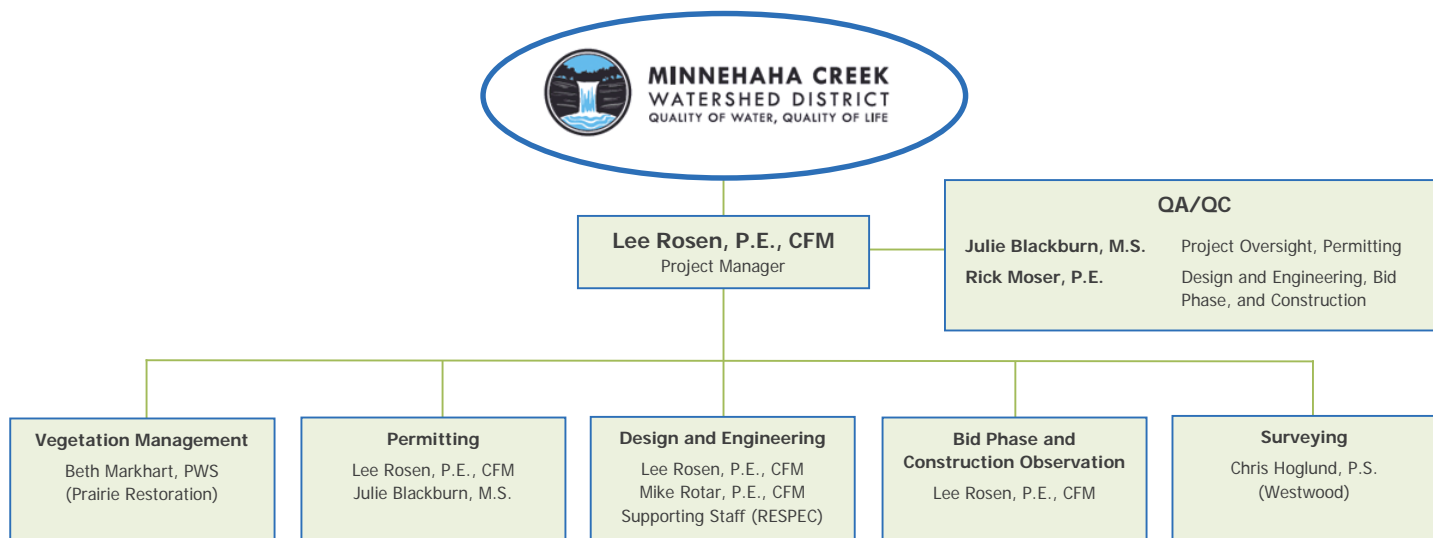
Topographic Surveying | Construction Staking | As-built Survey

Westwood Professional Services, Inc. (Westwood) is a multidiscipline survey and engineering firm that provides services for both public and private sector clients in a variety of markets. The company was established in 1972 and has been surveying the land since 1986. Westwood's surveyors approach projects with experience in regulations, processes, and subcontractor coordination, which makes tasks run smoothly. The nationally licensed staff meets project needs with professional experience, speed, and efficiency. Westwood has surveyed thousands of projects, ranging from 2-acre lots to 100-section substation surveys and 1,000-mile aerial photography ground control.

KEY PERSONNEL



The RESPEC team will be led by Mr. Lee Rosen as Project Manager and Ms. Julie Blackburn as Principal-In-Charge. They will be supported by the experienced and talented team of engineers, scientists, surveyors, and technicians listed below. Our experienced team includes two of RESPEC's Water & Natural Resources managers, who are specifically invested in this project, to ensure that the MCWD receives the best-quality product possible. The résumés of the key team members are included within this proposal.



Lee Rosen, P.E., CFM

Project Management | Hydrology and Hydraulics | Floodplain Management | Wetland Restoration Design | Construction Plans and Specification Development | Bid Phase Services | Construction Observation

Mr. Rosen has 9 years of engineering, planning, and design experience. He has developed construction plans and specifications for both local and state government projects. His career has focused exclusively on water resources projects, and he is experienced in hydraulic and hydrologic analyses, stream and wetland restoration design, and floodplain modeling. Mr. Rosen integrates custom-design practices into engineering solutions. He also is experienced with bid phase services and oversees on-site construction activities to ensure each project is successful from start to finish. Mr. Rosen's client-based focus and communication skills assist him in providing the highest quality projects that meet and exceed client expectations on schedule and within budget. *Percent Time Contribution—49% (+30% for RESPEC technician)*

Project Manager
Design and Engineering;
Permitting; Bid Phase &
Construction Observation



Julie Blackburn, M.S.

Comprehensive Watershed Management Planning | Watershed Implementation | Facilitation/Stakeholder Process | Environmental/Wetland Regulation and Policy | Government Relations | Strategic Communications

Ms. Blackburn's 20 years of experience in watershed implementation projects include large-scale projects involving environmental assessments, excavation and disposal of materials, obtaining permits from multiple agencies, construction oversight, and project management. She is exceptional at communicating with all project team members and stakeholders. Ms. Blackburn gained her expertise as the administrator for the Sauk River and Middle Fork Crow Watershed Districts. She acquired additional expertise in natural resource policy and regulations as Assistant Director of the Minnesota Board of Water and Soil Resources (BWSR). Ms. Blackburn has implemented large-scale program management activities and excels in executing innovative solutions and actions to resolve critical issues on projects. *Percent Time Contribution—2% +3% (QA/QC is incidental to the project)*

Principal-In-Charge
Overall QA/QC &
Permitting Support



Design and
Engineering Support

Mike Rotar, P.E., CFM

Floodplain Management | Wetland Mitigation/Restoration Design | Hydrology and Hydraulics | Aquatic Habitat Improvement | Construction Engineering and Management

Mr. Rotar has 26 years of experience in river and riparian restoration design, sediment transport, hydrologic and hydraulic analyses, bioengineered streambank stabilization, urban stormwater management, wetland mitigation and restoration design, and construction management. He has applied this knowledge to numerous stream and floodplain restoration projects, hydrologic and hydraulic modeling, flood control and mitigation, and aquatic habitat improvement projects. Mr. Rotar has directed the development of numerous plan, specification, and estimate packages for floodplain and wetland mitigation/restoration projects that were completed for local government units, state agencies, and the National Park Service. *Percent Time Contribution—3%*



QA/QC for
Design, Engineering,
Bid Phase, Construction
Observation

Rick Moser, P.E.

Quality Assurance and Quality Control | Hydrology and Hydraulics | Channel Restoration | Construction Plans and Specification Development | Bid Phase Services | Construction Observation

Mr. Moser has over 28 years of experience in water resources planning and design. He has served as a project engineer, project manager, and principal-in-charge for numerous channel restoration and urban stormwater projects. These projects have included both design development and construction document preparation. Various work elements successfully completed include hydrologic and hydraulic modeling, channel stability analysis and design, wetland and riparian plantings, and designing erosion and sediment control measures. Mr. Moser also has experience with including complementary and multiuse objectives into a stormwater project. Multiuse stormwater facility designs have included integrating park and open-space areas, pedestrian trails, water supply storage, habitat enhancement, and wetland mitigation. *Percent Time Contribution—3% (QA/QC is incidental to the project)*



Vegetation Management
(Wetland Specialist)

Beth Markhart, PWS (Prairie Restorations)

Vegetation Installation and Management | Certified Wetland Delineator

Ms. Markhart has 40 years of experience in plant ecology, physiology of plants, design and restoration monitoring of wetland systems, and environmental regulation. Her work has included development of standard plans and specifications for wetland systems throughout the Upper Midwest, which are then adapted to wetland mitigation, stormwater system, and floodplain restoration projects. Ms. Markhart has collaborated extensively with hydrologists and restorationists to bridge site modeling and design and vegetation installation and management. She holds a bachelor's degree in environmental, population, organismal biology; a master's in plant physiology; and a professional wetland scientist certification. *Percent Time Contribution—6%*



Surveying

Chris Hoglund (Westwood)

Topographic Surveys | As-built Surveys | Boundary Surveys

Mr. Hoglund is a project manager specializing in delivering topographic surveys, section subdivisions, boundary surveys, platting, land title surveys, lot surveys, and construction staking for land and energy projects. His knowledge of commercial, residential, and energy project management helps drive the success of projects. Mr. Hoglund works directly with clients, civil engineers, site superintendents, architects, and government officials to ensure each phase of the project is completed properly. *Percent Time Contribution—2% (8% for Westwood survey crew)*

KEY PERSONNEL



The RESPEC, Prairie Restoration, and Westwood team is the same team that helped design and install the Long Lake Creek Corridor — Phase II Project for MCWD in 2015. Our team has strong working relationships, and we are excited to provide the same level of service and outcomes on this wetland restoration project!

Table 1. Key Personnel Qualifications

Name	Company	Title	Qualifications		Areas of Expertise
Lee Rosen, P.E.	RESPEC	Project Manager	P.E. CFM B.S.	Minnesota, California, and Colorado Certified Floodplain Manager Civil Engineering	Project Management Hydrology and Hydraulics Floodplain Management Construction Plans and Specification Development Bid Phase Services and Construction Management
Julie Blackburn	RESPEC	Principal-In-Charge	M.S. B.A.	Environmental and Forest Biology Cultural Anthropology and Environmental Science	Comprehensive Watershed Management Planning Watershed Implementation Stakeholder Communication and Outreach
Mike Rotar, P.E.	RESPEC	Design and Engineering (Support)	P.E. CFM M.S. B.S.	Montana, South Dakota, Missouri, and Colorado Certified Floodplain Manager Civil Engineering Architectural Engineering	Stream Restoration Wetland Mitigation/Restoration Design Hydrologic/Hydraulic Modeling Construction Engineering and Management
Rick Moser, P.E.	RESPEC	QA/QC	P.E. M.S. B.S.	Minnesota, Colorado, and New Mexico Civil Engineering (Water Resources) Mining Engineering	Quality Assurance/Quality Control Hydrology and Hydraulics Restoration Projects Drainage Design and Plans
Beth Markhart	PRI	Wetland Specialist	CWD PWS M.S. B.S.	Certified Wetland Delineator Professional Wetland Scientist Plant Physiology Environmental, Population, Organismal Biology	Native Landscape Plan Design Vegetation Management Wetland Restorations Public Outreach
Chris Hoglund, P.S.	Westwood	Surveying	PS/PLS B.S. A.A.S.	Minnesota, Iowa, South Dakota, and California Land Surveying and Mapping Civil Technologies	Topographic Surveys As-Built Surveys

Team Communication and Working Together

RESPEC prides itself in its internal integration and collaboration as well as its ability to team with other firms to provide its clients the highest quality deliverables. Internally, RESPEC collaborates on projects daily between the Minnesota, Montana, Colorado, and South Dakota offices. We use Microsoft Lync and CISCO WebEx to share screens and video conference, and we store our files on shared servers to manage our projects effectively. When travel is necessary, we have made trips at no expense to the client to ensure that the project needs are met.

We have a long history of teaming with other companies to meet project demands. We have often served as both the prime and as the subconsultant on projects, from small to large, so we understand how to manage a variety of projects effectively. RESPEC and Prairie Restorations also have a history of working together, and we are excited to be teaming on this project.

Mr. Lee Rosen, the project manager, will manage the RESPEC, Prairie Restorations, and Westwood teams. He will ensure that the deliverables are being provided on time and are of the highest quality.



Long Lake Creek Corridor Restoration

This project for the MCWD in the City of Long Lake established a more natural, sinuous channel that is similar to its historic alignment as well as restored wetlands in an area of a decommissioned Wastewater Treatment Plant (WWTP). As a result of these efforts, water quality improved, habitat increased, wetland and ecological functions were restored, and floodplain storage increased. The project was completed in spring 2015.

RESPEC provided the design, bid phase, and construction management services. The project components consisted of data collection, surveying, sediment sampling, hydrologic, hydraulic and floodplain modeling in XPSWMM, construction plans and specifications, an operation and maintenance manual, a permitting component (including an EAW, a 404 permit, and local permitting), and wetland delineations.



Excavating the former WWTP



Native Wetland Plantings

The project included reestablishing a more natural, sinuous channel that was aligned through the former WWTP and surrounded by restored wetlands. A portion of the dike originally constructed to separate the creek from the WWTP was removed, along with the WWTP outlet structure, to allow the two to become reconnected. As part of the project, invasive vegetation removal and wetland plantings are improving the area's aesthetics. Tanager Lake, which is currently impaired, lies 2 miles downstream of the project and should benefit from enhanced and improved water quality. Overall, the neighborhood and general public will benefit from the restoration project. Implementing the project as designed will result in the following:

- Improved stream functionality
- Increased habitat
- Restored wetland and ecological functions
- Increased floodplain storage.

The project was located in an area surrounded by hydraulic features that include two stormwater ponds, a former wastewater treatment pond, and a MnDOT floodplain mitigation pond. As part of the project, the MCWD's XPSWMM model was updated with the proposed improvements. The XPSWMM model was used to design the improvements without increasing the floodplain elevations and assured that no adverse impacts would result as part of the project. HydroCAD was used to simulate local hydrology and determine any effects on the existing pond network, which had previously been modeled in HydroCAD. The MIDS calculator was also used to understand the impact of the Best Management Practices (BMPs).



Restoration Using Native Plantings

RESPEC was responsible for the water resources permitting components and coordination with the corresponding agencies consisting of USACE, DNR, BWSR, MPCA, MnDOT, Hennepin County, City of Long Lake, MCWD and Met Council. Wetland delineation and functional assessments using the Minnesota Routine Assessment Methodology were performed by RESPEC's certified wetland delineators using existing data and field verification. These reports were used to help with the WCA determination and other permitting requirements.



Post Restoration

An EAW was completed with the preliminary design of the site. This included coordinating with the State Historic Preservation Office and the DNR regarding endangered species. Based on the EAW and the minimal comments received, it was determined that an Environmental Impact Statement (EIS) would not be necessary. The project was permitted under a 404 general permit, which has allowed it to remain on its aggressive schedule. Other permitting items, such as the Public Waters and local permitting requirements, were also obtained.

References:

Mike Hayman, Minnehaha Creek WD, 952.471.8226



RELATED PROJECTS

Story Mill Community Park—Restoring Ecological Services in an Urban Environment

The Trust for Public Land is endeavoring to create a new community park in the northeastern corner of Bozeman, Montana. The proposed 54-acre Story Mill Community Park occurs at the confluence of Bozeman Creek and East Gallatin River and includes over a ½ mile of the East Gallatin River. In the past century, the expansive riverine and wetland ecosystem in this confluence area was first transformed to support the Story Mill agricultural hub, which included a mill and granary, stockyard, slaughterhouse, a pond, and stock pastures.



More recently, urban and commercial development continues to encroach on wetland and floodplain habitat in this area. Because of its unique location, this site offers a rare and remarkable opportunity to combine ecological restoration with multiple other community benefits to residents and the city of Bozeman. RESPEC scientists and engineers were hired to assist The Trust for Public Land plan and design the restoration of wetlands, riparian habitats, and streams. The goal of the restoration project is to “...restore and protect on-site natural processes necessary for a functioning riparian and wetland system.” The ecosystem functions that will be improved by this project include water quality improvements, temporarily storing water in the spring and releasing water later in the season (i.e., sponge effect), recreation and education opportunities for the Bozeman community (including Montana State University), and habitat for resident and migratory wildlife species.

A rigorous planning and stakeholder process resulted in selecting a preferred restoration alternative that will build resilience into the riverine ecosystem and help to ensure river health. Eight acres of wetland were restored, which more than doubles the current wetland acreage; this substantially restores floodplain areas along the East Gallatin River and Bozeman Creek and removes debris along 0.5 miles of streambanks and streambed on the East Gallatin River. The Story Mill Community Park proposal was recently approved by the City Commission and the restoration was implemented in 2015.



References:

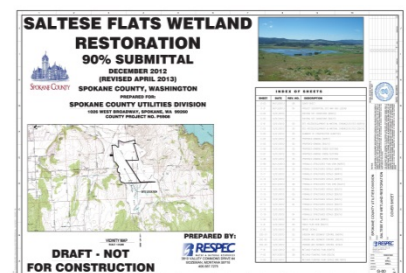
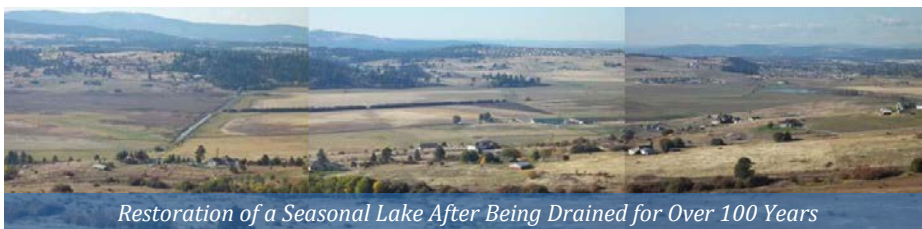
- Maddy Pope, *The Trust for Public Land*, 406.522.7450
- Deb Love, *The Trust for Public Land*, 406.522.7450

Saltse Flats Wetland Restoration Project

This project will restore natural hydrology to the Saltse Flats (Flats), which historically supported a seasonal lake before being drained for agricultural purposes in the early 1900s. The total project area on the Flats is 515 acres. The initial phase of the project will involve reintroducing a natural hydrologic regime by allowing water to enter the Flats at the south end of the project area and then flow north through several new channel and wetland features designed by our staff. These features will include (1) a large (approximately 30 acres) wetland area, (2) new stream channels connecting the proposed wetland area with an existing open-water area at the north end of the Flats, and (3) modifying and/or replacing several inlet/outlet structures to facilitate water control and management. Upon completion, the project area will include a trail network developed on the property that will be open for public use.

References:

- Ben Brattebo, *Spokane County Utilities Division*, 509.477.7521
- Dave Moss, *Spokane County Utilities Division*, 509.477.3604





Dead Run Stream Restoration

Dead Run flows from headwaters near the highly developed Tyson's Corner area of Fairfax County, Virginia, and is a tributary to the Potomac River. In many areas, significant channel degradation has occurred as a result of high storm-runoff volumes. Aquatic habitat quality within Dead Run is classified as very poor. RESPEC assisted Fairfax County with assessing the channel conditions and subsequently designing stream improvements, through McLean Central and Dead Run Stream Valley Parks in McLean, Virginia. The stream improvement project length is 4,200 feet, and the overarching goal was to increase channel and bank stability by applying restoration techniques that have a minimal impact on the existing riparian vegetation, including large trees and native shrubs, brush, and groundcover. The following tasks were completed as part of the project:

- Geomorphic assessment of the stream channel, which included using Wolman pebble counts, the Schumm channel evolution model, and Rosgen's stream classification system
- Topographic survey of the channel and immediate floodplain, including a longitudinal profile and channel cross sections
- Preliminary wetlands investigation along the stream bank to identify jurisdictional wetlands
- Evaluation of an existing hydrologic model (XP-SWMM) developed for the Dead Run Watershed
- Hydraulic modeling using the HEC-RAS hydraulic model.

Because of the sensitive nature of the existing riparian corridor and the goal to minimize soil disturbance and reserve existing trees to the extent possible, the design strategy for channel and streambank restoration emphasizes treatments that minimize bank re-grading and the corresponding potential for loss of mature trees that include the following:

- Bioengineering techniques to minimize stream system impact and maximize ecological function
- Stormwater outfall identification and recommendation for treatment of outfall locations
- Wetland creation in select floodplain areas to provide retention of stormwater discharges and channel overbank flows.

References:

Ron Tuttle, Fairfax County – Dept. of Public Works, Stormwater Planning Division, 703.324.5860

Matt Myers, Fairfax County – Dept. of Public Works, Stormwater Planning Division, 703.324.5500



Dead Run Stream Channel—Before



Immediately Following



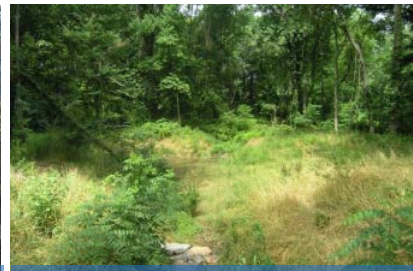
After



Library Parking Lot Outfall—Before



Immediately Following



After



Trail Creek Stream and Wetlands Restoration Projects

For nearly 10 years, RESPEC has worked with Douglas County and the Coalition for the Upper South Platte River in Colorado to address the hydrologic and hydraulic impacts of the Hayman Fire, which burned 138,000 acres in 2002. Our project experience has covered all aspects of post-fire flood mitigation and channel restoration. Specific service items that we have provided include:

- Post-fire hydrology (including calibration models)
- Public education outreach events and brochures
- Inventorying existing drainage infrastructure
- Identifying potential problem areas
- Designing stream stability measures
- Wetland restorations
- Modeling water quality and sediment transport in burn areas
- Low-cost stream gage monitoring
- GIS mapping and burn area analysis
- Dam breach analysis for burn area reservoirs
- Designing sediment mitigation measures
- Creating an emergency flood alert system and model
- Providing projects to be constructed by volunteers
- Design and construction plans
- Bid phase services and construction oversight.

RESPEC coordinated with multiple agencies, municipalities, groups, and individuals to provide the best solutions to the problems that originated in the aftermath of the fire. We helped protect infrastructure in the communities affected by the fire through a variety of channel stabilization and restoration techniques including seeding, bank stabilization, timber fence installation, tree contouring, and erosion mitigation.

References:

Garth Englund, Douglas County, Colorado, 303.660.7479
Carol Ekarius, Coalition for the Upper South Platte, 719.748.0033



2006 Flooding in Hayman Fire Burn Area



Wetland restoration near burn area

"The construction plans for cross culvert improvements and stream stabilization measures were done quickly and with minimum review and revisions. The improvements constructed since the fire have proved to be very effective at protecting the public and the habitat... we would like to commend you on being responsive to all of our needs..."

Garth Englund Jr., P.E., Douglas County, Colorado



Stream Instability Within Burn Area



Cross Vane Installation Project with David Rosgen



Ham Lake Wetland Restoration

This project is roughly 120 acres located north of Blaine, Minnesota, to create wetland mitigation bank credits on the Anoka Sandplain. The site was most recently used to grow turf sod but was excavated and shaped to create the hydrology amenable to sedge meadow restoration. A moderately high (40-50) species diversity was the goal. PRI completed final site preparations and performed the seeding.

After 5 years, most of the planted wetland areas developed excellent populations of native plants. Several piles of peaty soil have not been as successful and are vegetated with narrow leaf cattail, but continue to be managed. There are strong populations of native grasses, sedges, and wildflowers that established and the project received official wetland mitigation credits.



Mud Lake Wetland Restoration



The Mud Lake Wetland Restoration consisted of PRI installing over 75 species from seed in the appropriate microhabitats and planting 143 tree saplings. During construction the top 12 inches of wetland topsoil was stockpiled then replaced after contouring. Access to the planting zones was limited because temporary bridges had already been removed and all other areas were forested. Grass seed was broadcast twice at right angles followed harrowing to ensure good seed to soil contact. Flower seed was hand broadcast without harrowing. Wetland areas and floating bogs were saturated, unable to support heavy equipment and hand broadcast several times for even distribution. In one zone, 93 Black ash and 50 Silver maple saplings were planted. Deer enclosures were placed around each sapling to provide the best chance of survival.

Heritage Park Phases 1 and 2

As part of the new Heritage Park development in Minneapolis, a series of sediment basins, ponds and forebays were created as a means to filter stormwater before it enters the Mississippi River. This unique and innovative design incorporated the use of native vegetation as an integral element of the system. A combination of upland, mesic, wetland and aquatic species were used throughout the project area.

Once the infrastructure work was completed by the general contractor, PRI mobilized and began the seeding and planting activities. The freshly excavated soil was lightly tilled and raked to prepare a suitable seed bed. Custom, diverse seed mixes were sown throughout the entire project area and then covered with erosion blanket. Approximately 50,000 native plants were then installed in the various microhabitats throughout the project area. PRI's crews have been actively maintaining the site since the completion of the installation utilizing techniques such as spot herbicide application, spot mowing, and prescribed burning.



RELATED PROJECTS



Table 2. Related Projects and Services

Related Projects and Services	Project Highlighted	Project Management	Data Collection	Surveying	Water Quality Modeling	Floodplain Modeling	Permitting	Channel Design	Wetland Design	Public Education and Outreach	Construction Plans and Specifications	Reclamation/Remediation	Bid Phase Services	Construction Oversight
Long Lake Creek Corridor Restoration – Phase II (MCWD)	•	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Story Mill Community Park (Trust for the Public Land)	•	✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓
Saltese Flats Wetland Restoration (Spokane County)	•	✓	✓		✓	✓	✓	✓	✓	✓	✓			
Dead Run Stream Restoration (Fairfax County)	•	✓	✓			✓	✓	✓	✓	✓	✓		✓	✓
Cottonwood Creek (SEMSSWA)		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓
YMC Wetland Delineation, Restoration, and Monitoring (YMC)		✓	✓	✓		✓						✓		
Ham Lake Wetland Restoration (PRI)	•								✓			✓	✓	✓
Mud Lake Wetland Restoration (PRI)	•								✓					
Heritage Park Phases 1 and 2 (PRI)	•								✓					
Piney Creek Trail (City of Aurora)		✓	✓	✓	✓	✓	✓	✓			✓		✓	✓
Four Mile Canyon Creek (UDFCD and City of Boulder)		✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	
Tributary 6400 Drainageway Improvements (Town of Castle Rock)		✓	✓	✓	✓	✓	✓	✓		✓	✓		✓	✓
Rock Creek Channel Restoration (UDFCD)		✓	✓	✓		✓	✓	✓	✓	✓	✓		✓	✓
Terminal Water Quality Pond (Denver International Airport)		✓	✓	✓	✓	✓	✓	✓			✓		✓	✓
Big Dry Creek at Easter Road (SEMSSWA)		✓	✓	✓		✓	✓	✓			✓		✓	
South Platte River Bank Stabilization (UDFCD and Adams County)		✓	✓	✓		✓	✓	✓			✓		✓	✓
Region 2 Bridge Enterprise: I-25 over Sull Creek (CDOT)		✓	✓	✓		✓	✓	✓			✓		✓	✓
East Plum Creek (Town of Castle Rock)		✓	✓	✓	✓	✓	✓	✓			✓		✓	✓
Trail Creek Stream and Wetland Restorations (Douglas County)	•	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓



RESPEC will work closely with the MCWD to meet all the project goals by providing an aesthetically pleasing restored wetland that provides the necessary floodplain storage and helps improve the water quality and habitat, on schedule and within budget.

Project Management

Experienced project management, technical excellence, and quick client response time are critical elements and will be delivered on this project. The RESPEC designated project manager is Mr. Lee Rosen, and he will be responsible for coordinating with the MCWD staff and leading the entire consultant team. From the start of the project, he will create a detailed schedule with input from the MCWD staff from critical permitting and plan deliverable dates to scheduling a time to meet with the MCWD project manager on a weekly basis. He will ensure that the team is on schedule and within budget by using RESPEC's project management and cost-tracking software.

Project Goals

- Add Floodplain Storage
- Restore Wetland
- Provide Maintenance Access
- Improve Water Quality
- Provide Habitat
- Enhance Aesthetics

Quality Assurance/Quality Control

RESPEC implements a rigorous QA/QC process to deliver high-quality work products by including its most qualified individuals and leaders on projects. The QA/QC team (Ms. Julie Blackburn and Mr. Rick Moser) will work directly with Mr. Rosen and the project team throughout the project. They will be involved in correspondence, team meetings, and internal reviews of deliverables before being submitted to the MCWD. Both the entire project concept and the details within the plans are essential in ensuring the project is always moving forward and can be built as envisioned by all team members and stakeholders.

Data Collection

The data collection elements will begin upon notice to proceed and consist of reviewing existing resources (i.e., MCWD tree survey), performing a site visit, and conducting a detailed topographic survey. The team members have already reviewed the resource documents that were provided while preparing this proposal. Westwood will perform a detailed topographic survey of the project area using the datum of the District's choice (NGVD 29 or NAVD 88) to create one-foot contours and pick up any trees or vegetation flagged during the aforementioned site visit.

Preliminary Design and Engineering

RESPEC's design and engineering team will be composed of professional engineers Mr. Lee Rosen and Mr. Mike Rotar with a support staff skilled at drafting plans using AutoCAD Civil 3D. We will apply our knowledge in hydrology and hydraulics, floodplain management, fluvial geomorphology, water resources engineering, water quality assessment, and stream and riparian restoration to the site. Our ability to meld both water quality and water quantity evaluations can provide the MCWD with a unique advantage in optimizing restoration solutions. We will also keep potential permitting issues in mind during the design to avoid lengthy delays that could result from needing a USACE 404 permit and Public Waters Permit.

The wetland planting and native vegetation design will be completed by Ms. Beth Markhart and the experienced Prairie Restoration Staff. She will also lead the plan to manage the invasive species and set performance standards for the new vegetation using a similar template to the Long Lake Creek Corridor—Phase II Project.

Throughout the preliminary design, the RESPEC team will establish consensus with the MCWD staff and the stakeholders on wetland restoration goals, floodplain storage objectives, and to identify preferred habitat types and general aesthetics of restoration elements.

In the initial stages of the design process, we will use hand sketches to coordinate our design ideas and get consensus, which will be followed by a plan set using computer-aided design. Our deliverables will consist of 60 percent preliminary plans with all the sheets mentioned in the scope, a design report, cost estimate, and an operations and maintenance plan.

Final Engineering and Design Report

Based on input and comments from the MCWD staff, board, and other stakeholders, the 60 percent preliminary plans, report and cost estimate will be updated into construction-level design documents. Specifications will also be developed during this phase.



Permitting

Permits will be required from the City of Minnetrista and the MCWD. Permit application packages will be prepared that will address all requirements and guide the reviewer through the proposed project and any impacts. RESPEC feels that a USACE 404 permit will not be required as part of this project if the excavated material is removed from the site as outlined in the feasibility study, which will save the District review time and fees, and therefore, has not been included as part of the bid. The other potential permit is the DNR's Public Water Permit, but as described in the clarifications provided by the District, it was not included as part of the bid, and this can be managed by confirming site elevations are above the OHWL or managing the locations of excavation on the site if necessary based on the PWI.

Design Meetings

RESPEC will lead or attend all meetings outlined in the RFP's scope of work and will distribute meeting minutes to the attendees. We will work closely with the MCWD staff throughout the course of the project and have incorporated time into the budget under the respective scope items.

Bid Phase

RESPEC will prepare the bid advertisement, solicit bids using QuestCDN, lead a pre-bid meeting, respond to questions and prepare addenda if necessary, attend the bid opening, and tabulate bids for the recommendation of the award.

Construction Observation & Administration

Construction observation and administration will be performed by the project manager, Mr. Lee Rosen, who will have a sound understanding of all aspects of the project. A preconstruction meeting will be held, where the plans will be reviewed in detail to ensure that the contractor understands exactly what needs to be done and why. The construction oversight will occur at the critical times during the construction such as [i.e., during the installation of the construction BMPs, major grading operations, and wetland plantings], and a total of 6 visits to the field have been assumed. Construction staking is assumed to be completed by the contractors, which will minimize overall costs and remove risk from the District.

RESPEC will handle the contract management and has assumed a total of two pay requests, four requests for information (RFIs), and one change order to calculate our fee. When construction is complete, Westwood will perform a topographic survey and as-built plans will be prepared by RESPEC. We will provide our project files in an organized and complete manner to the MCWD at the end of the job.

Project Schedule

Our proposed schedule provided in Table 3 was developed to begin construction in Fall 2016 per MCWD's request. RESPEC has a track record of delivering on projects with aggressive schedules and feels that the proposed schedule outline below will provide plenty of buffer time to implement the project, especially with MCWD's dedicated staff and clear direction typically provided.

Table 3. Project Schedule

Task	June	July	August	September	October	November
1. Data Collection	■					
2. Preliminary Engineering		■				
3. Final Engineering			■			
4. Permitting				■		
5. Design Meetings	■	■	■	■		
6. Bid Phase				■	■	
7. Construction Observation and Admin					■	■

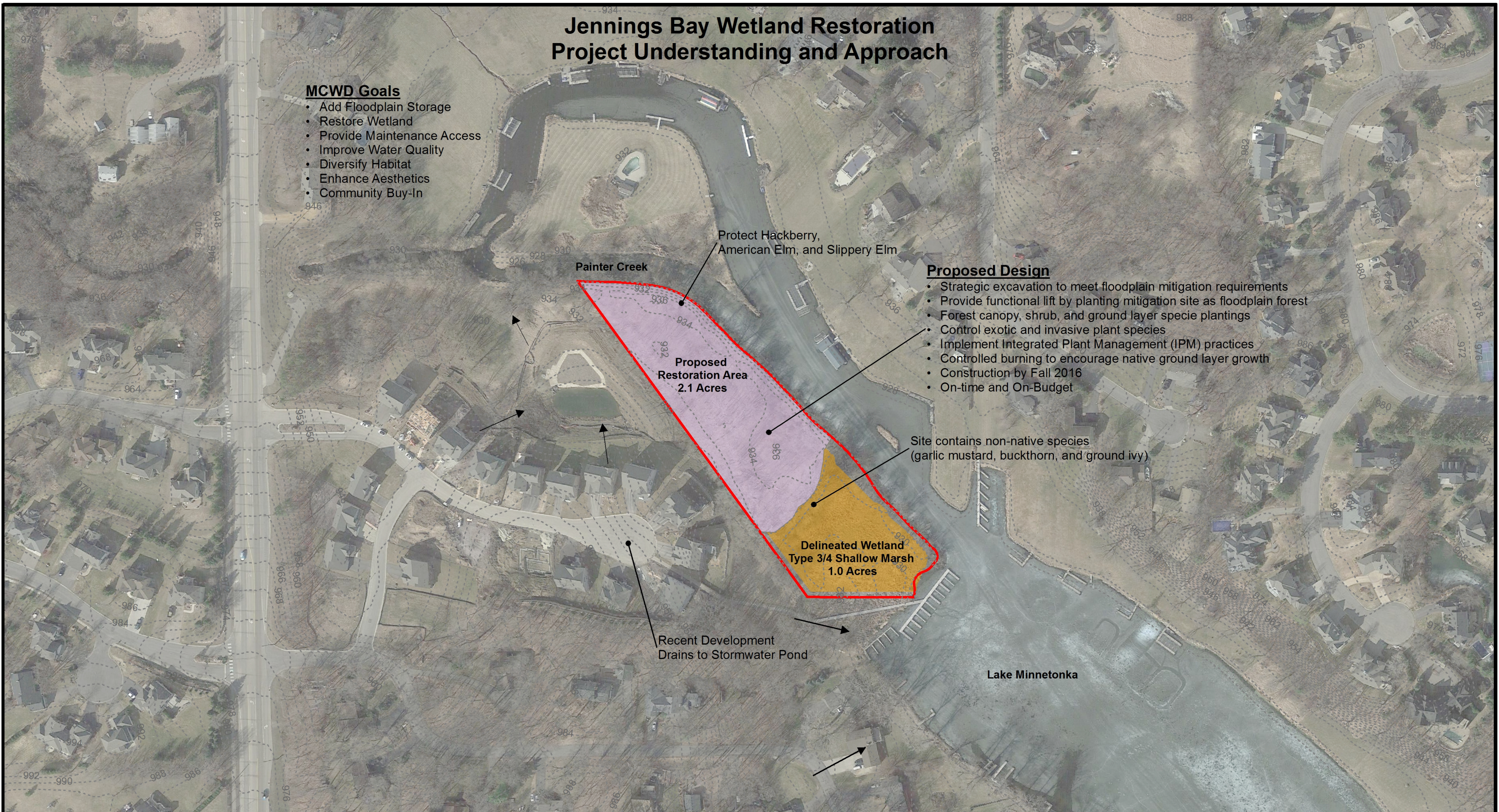
Jennings Bay Wetland Restoration Project Understanding and Approach

MCWD Goals


- Add Floodplain Storage
- Restore Wetland
- Provide Maintenance Access
- Improve Water Quality
- Diversify Habitat
- Enhance Aesthetics
- Community Buy-In

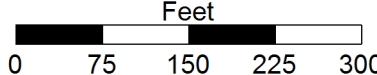
Proposed Design


- Strategic excavation to meet floodplain mitigation requirements
- Provide functional lift by planting mitigation site as floodplain forest
- Forest canopy, shrub, and ground layer specie plantings
- Control exotic and invasive plant species
- Implement Integrated Plant Management (IPM) practices
- Controlled burning to encourage native ground layer growth
- Construction by Fall 2016
- On-time and On-Budget



- 2-ft Contours
- Minnetrista Parcel
- Delineated Wetland
- Proposed Restoration Area







CONTACT INFORMATION



If you have any questions, please contact Lee Rosen:

Lee Rosen, P.E.

Project Manager

1935 West County Road B2, Suite 230

Roseville, MN 55113

651.305.2275

Lee.Rosen@respec.com

Budget Worksheet

The project budget worksheet is included as a separate file as requested by MCWD.

Conflict of Interest Statement

RESPEC, Prairie Restorations, and Westwood have no conflicts of interest associated with this project or the Minnehaha Creek Watershed District.

Graves Creek Channel Restoration Progress (RESPEC)



Graves Creek Original State



Bank Stabilization



3 Months After Stabilization



Graves Creek Channel Restoration



APPENDIX A:

RESPEC



Lee D. Rosen, PE, CFM

MINNESOTA WATER RESOURCES ENGINEERING PROGRAM MANAGER

OVERVIEW

Mr. Rosen has 9 years of engineering, planning, and design experience. He has developed construction plans and specifications for numerous local and state government projects. His career has focused exclusively on stormwater-related projects, and he is experienced in hydraulic and hydrologic analyses, floodplain modeling, channel restoration, water quality Best Management Practice (BMP) design, and sediment and erosion control.

PROJECT EXPERIENCE

Long Lake Creek Corridor Improvement Project, Minnehaha Creek Watershed District, Minnesota. Mr. Rosen is the project manager for a wetland and channel restoration project to improve water quality, reconnect the floodplain, improve habitat, provide native wetland vegetation, enhance aesthetics, and increase floodplain storage. The project restored 10 acres of open space in the city of Long Lake and provided for 1,250 linear feet of restored channel. Mr. Rosen was responsible for coordinating with stakeholders, collecting data, designing, engineering, permitting, preparing the bid, and construction management.

Two Rivers Lake Targeted Conservation Practices Plan, Stearns County Soil and Water Conservation District (SWCD), Minnesota. Mr. Rosen was responsible for leading the urban portion of the project to identify the most cost-effective projects in the city of Albany to reduce nutrients flowing into Two Rivers Lake. RESPEC developed a P8 model for the entire city to have a detailed understanding of the existing conditions' yield and export and to model potential projects. Potential projects included pond modifications, bioretention systems, iron-enhanced sand filters, and numerous other water quality BMPs. The projects were ranked based on a cost benefit, and treatment train combinations were run separately to help guide the SWCD and city of Albany to make informed project implementation decisions.

Tomar Court Drainageway Improvements, City of Sioux Falls, South Dakota. Mr. Rosen is the project manager responsible for analyzing and designing a 1,400-linear-foot drainageway that experience severe degradation and incising. The hydrology and existing and proposed conditions hydraulics are being performed using XPSWMM. The plans include an improved channel alignment and geometry, grade control, maintenance access, outfall retrofits, realigned sanitary sewer, and culvert crossing improvements. The project involves an individual 404 permit, local permitting, public outreach, and several other components.

Stearns County Ditch 32 Repair Project, North Fork Crow River Watershed District, Minnesota. Mr. Rosen is the project manager for the repair of a public drainage system consisting of 23.7 miles of public ditch and tile mains located in Raymond, Getty, and North Fork Townships in western Stearns County. The planning consisted of hydrologic analysis using HEC-HMS and hydraulic analysis using HEC-RAS. Construction plans and specifications for the repair, as well as several water quality improvement projects using Clean Water Fund grants, were also developed. Bid services and construction administration are also being provided as part of the project.

Technical Expertise

- ✓ Hydrology and Hydraulics
- ✓ Floodplain Analyses
- ✓ Water Quality BMP Design
- ✓ Stream & Wetland Restoration
- ✓ Sediment and Erosion Control
- ✓ Design and Construction Plans
- ✓ Specification Development
- ✓ Bid-Phase Services
- ✓ Construction Management

Education

BS in Civil Engineering, University of California, Los Angeles, CA (2007)

Registrations & Licenses

Professional Engineer in Minnesota, South Dakota, California, and Colorado
Certified Floodplain Manager (CFM)

Professional Memberships

American Council of Engineering Companies
Chi Epsilon Engineering Honor Society
Colorado Association of Stormwater and Floodplain Managers
Minnesota Association of Floodplain Managers
Engineers Without Borders

Work History

RESPEC
(2013–Present [Roseville, MN])
(2011–2013 [Denver, CO])
Moser & Associates Engineering
(2007–2011)

[Big Fork Watershed Restoration and Protection Strategies, Koochiching SWCD and the Minnesota Pollution Control Agency \(MPCA\), Minnesota](#). Mr. Rosen is the project manager responsible for extending the Big Fork Watershed HSPF model and writing the restoration and protection strategies report. This project aims to incorporate recent monitoring data; plan and develop the total maximum daily loads (TMDLs) for impaired waters; support the determination of natural background and reclassification of currently listed impaired waters if applicable; develop watershed restoration and protection strategies; lead civic engagement meetings and supporting activities; and provide project administration, coordination, and fiscal management. The project provides an opportunity to assess and leverage the local community's capacity to engage in watershed management and to adopt protection and restoration practices.

[Lake of the Woods Nutrient TMDL Study, Lake of the Woods SWCD and MPCA, Minnesota](#). Mr. Rosen is the project manager for the extension of the Lake of the Woods (LOW) nutrient TMDL study approach that will (1) identify water quality standards and goals for the Minnesota portions of the LOW and Rainy River Watershed, (2) recommend nutrient allocations to achieve TMDLs where waters do not meet water quality standards, and (3) provide opportunities for stakeholders and local communities to engage in the watershed-management planning process to adopt protection and restoration practices.

[Minnesota Stormwater Manual Update \(Pretreatment\), MPCA, Minnesota](#). Mr. Rosen is the project manager responsible for leading the team to update the Minnesota Stormwater Manual to include a section on pretreatment items. The information will be used by stormwater practitioners to implement the most effective and cost-efficient practices for managing stormwater runoff volume and pollutants and to meet regulatory requirements associated with stormwater permits. The sections will focus on hydrodynamic separators, underground settling devices, filters, vegetated filter strips, and forebays.

[Tributary 6400 East Drainageway Improvements, Castle Rock, Colorado](#). Mr. Rosen was the project engineer for the design that stabilized over 1,000 linear feet of channel that was actively degrading. The existing detention basin was modified to provide additional water-quality improvements and help the town meet its Municipal Separate Storm Sewer System (MS4) requirements. Floodplain analyses were performed on the project reach and, before construction, a Conditional Letter of Map Revision (CLOMR) was approved by the Federal Emergency Management Agency (FEMA). Mr. Rosen also provided bid-phase and construction-management services. After preparing as-built documents, a Letter of Map Revision (LOMR) was completed and approved.

[Region 2 Bridge Enterprise Program, Colorado Department of Transportation \(CDOT\), Southern and Eastern Colorado](#). As project manager, Mr. Rosen provided the hydraulic design and scour countermeasures on six bridges in southern and eastern Colorado. He oversaw the hydrologic and hydraulic analyses, bridge sizing, pier geometry, floodplain characteristics, local channel improvements, and stormwater management plans. He also coordinated with public entities and irrigation ditch companies.

[47th Avenue LOMR, City and County of Denver, Colorado](#). Mr. Rosen was the project manager for a LOMR along Sand Creek as part of the newly constructed 47th Avenue bridge. He was responsible for the hydraulic analyses, floodplain analyses and delineation, and correspondence with the affected landowners. The LOMR was accepted by FEMA and the Urban Drainage Flood Control District (UDFCD).

[Terminal Water Quality Pond, Denver International Airport \(DIA\), Denver, Colorado](#). Mr. Rosen was the project engineer responsible for designing an extended detention basin upstream of Third Creek to treat runoff from the terminal area at the DIA. He performed the hydrologic analyses for existing and future land uses, performed a hydraulic review of the existing storm sewer system that outfalls into the basin, analyzed the effects of the floodplain, and prepared a CLOMR. His design accounted for airport-specific regulations that included an enclosed micropool to eliminate potential wildlife attractants. He also provided bid- and construction-phase services for the DIA.

[Four Mile Canyon Creek Low-Flow Channel Improvements, UDFCD and City of Boulder, Colorado](#). Mr. Rosen prepared construction plans and specifications for the low-flow channel and restoration of a disturbed area within the reach using bioengineered solutions. He held a public meeting and worked with local residents to provide a design that fit within the community. As part of the design process, he performed a sediment analysis study and prepared a formal report for a channel reach that was experiencing excessive aggradation.



Julie A. Blackburn

MINNESOTA AREA MANAGER

OVERVIEW

Ms. Blackburn has over 20 years of professional experience working in a leadership capacity in watershed protection and implementation and water resource management, as well as providing overall strategic management of natural resource programs.

During her time as the Assistant Director of Policy and Programs at the Minnesota Board of Water and Soil Resources, Ms. Blackburn worked extensively with soil and water conservation districts, watershed districts, and state and federal conservation agencies in the fields of watershed management, drainage management, Total Maximum Daily Load (TMDL) implementation, and resource conservation planning. Ms. Blackburn facilitated in resolving highly controversial issues with diverse and often polarized interests to achieve workable outcomes. She also directed strategic communications and public relations programs, worked to achieve successful coordination of state and federal wetland regulations, and coordinated environmental policy development and government relations programs.

As Administrator of the Middle Fork Crow Watershed District and the Sauk River Watershed District, Ms. Blackburn provided leadership to these special-purpose units of government and oversaw all facets of comprehensive watershed management, including surface water monitoring and analysis, TMDL studies and implementation plans, stormwater management, public drainage systems, permitting programs, conservation practice planning and implementation, strategic planning, communications, outreach, and public relations.

As Associate Professor and Extension Educator at the University of Minnesota Extension Service, Ms. Blackburn worked with diverse interests in the central Minnesota lake region on lake and stream management programs, as well as with agricultural interests on manure, irrigation, pasture, and drainage management programs.

TECHNICAL EXPERIENCE

Environmental/Wetland Regulation. Ms. Blackburn has extensive knowledge of federal, state, and local water-related statutes and rules, including wetland, drainage and water pollution program areas. In her leadership role at both state and local agencies, she led the development of rules and permitting programs at state and local government levels, including working with stakeholder groups and regulating agencies to establish performance standards and enforcement policies. As Assistant Director of a state agency, she was responsible for developing, interpreting, and implementing Minnesota statute and rules and their potential connections to both local and federal provisions.

Watershed Assessment and Comprehensive Planning. Ms. Blackburn managed and implemented comprehensive lake and river monitoring and assessment programs on the Sauk and Middle Fork Crow Watersheds in central Minnesota. Based on the results of monitoring and assessment

Technical Expertise

- ✓ *Watershed Assessment and Planning*
- ✓ *Watershed Implementation*
- ✓ *TMDL Planning and Support*
- ✓ *Environmental/Wetland Regulation*
- ✓ *Legislative/Government Relations*
- ✓ *Meeting Facilitation/Civic Engagement*
- ✓ *Communication and Outreach*

Education

- M.S. in Environmental and Forest Biology With System Ecology Emphasis, State University of New York College of Environmental Science and Forestry, Syracuse University, Syracuse, NY (1998)*
- B.A. Cultural Anthropology and Environmental Science, St. Cloud University, St. Cloud, MN (1992)*

Certifications & Training

- Senior Leadership Institute, University of Minnesota, Humphrey Institute of Public Affairs (2012)*
- Stream Fluvial and Geomorphology, Minnesota Department of Natural Resources (2005)*

Honors & Awards

- Environmental Leadership Award, Minnesota Erosion Control Association (2006)*
- Natural Resource and Environment Outstanding Achievement Award, University of Minnesota Extension Service (2002)*

Work History

- RESPEC (2012–Present)*
- Minnesota Board of Water and Soil Resources (2008–2012)*
- Middle Fork Crow River Watershed District (2006–2008)*
- Sauk River Watershed District (2002–2006)*
- University of Minnesota Extension Service (1997–2002)*

Julie A. Blackburn

programs, she planned, initiated, and supported lake and river nutrient, bacteria, and biota and TMDL studies. Ms. Blackburn also wrote and acted as a technical advisor on developing comprehensive watershed management plans at the county, watershed, and state levels.

Watershed Implementation. Ms. Blackburn acquired funding and provided overall management to resource protection and restoration implementation projects that totaled over \$15m, including individual landowner practices (e.g., raingardens, feedlots, shoreline restorations, and septic systems) and large multigovernment, multilandowner projects (e.g., stormwater, drainage, and aquatic plant management programs). Through these efforts, Ms. Blackburn worked cooperatively with federal (Natural Resources Conservation Service (NRCS), US Fish & Wildlife Service (USFWS), US Environmental Protection Agency (EPA) and state agencies as well as conservation organizations (Ducks Unlimited, Pheasants Forever) to implement protection and restoration strategies and programs.

TMDL Planning and Support. Ms. Blackburn has led planning efforts and provided leadership for over 20 lake and stream TMDL studies throughout Minnesota during the last 12 years. Through her experience in watershed monitoring, data analysis and assessment, and lake and watershed restoration, she provides expert guidance at the finest details as well as overall conceptual development and issue analysis. Ms. Blackburn understands the impacts of TMDL regulatory aspects and works proactively with regulated parties throughout the study. Her unique background that bridges both outreach training and technical expertise allows her to communicate with a broad audience, including citizens, scientists, and agency representatives.

Legislative/Government Relations. Ms. Blackburn is experienced at coordinating environmental policy development, including working through the legislative and agency rule-making process with diverse stakeholders on highly pivotal issues (such as Minnesota's Wetland Conservation Act). Ms. Blackburn has extensive legislative experience and has successfully moved agency budget and policy initiatives through the legislative process from bill creation through final authorization. As a result of her experience, Ms. Blackburn has highly developed legislative and government relations skills at federal, state, and local levels.

Meeting Facilitation/Civic Engagement. Ms. Blackburn facilitated multiple stakeholder processes that led to resolving highly controversial topics, including developing water quality standard regulations, manure management and feedlot ordinances, and sewage treatment issues in sensitive landscapes. She also advised and facilitated the Minnesota Local Government Roundtable's development of the "One Watershed-One Plan" approach that resulted in developing legislation that directed statewide watershed planning efforts, which was signed into law in 2012.

Communication and Outreach. Throughout her career, Ms. Blackburn has developed strategic internal and external communications plans for project-specific, legislative, and unique initiatives by using multitiered, multimedia approaches. These skills were more fully developed during her role as CIO at a state agency where she was responsible for executing all agency communications, including crisis communications, and acting as an intergovernmental communications liaison.

PROJECT EXPERIENCE

Stearns County Ditch 32 Repair Project, North Fork Crow River Watershed District, Minnesota. Ms. Blackburn was the Principle-In-Charge and responsible for all regulatory and permitting requirements for the repair of a public drainage system that consisted of 23.7 miles of public ditch and tile mains and is located in Raymond, Getty, and North Fork Townships in western Stearns County. Regulatory approvals and permits were acquired from all local, state, and federal agencies regarding potential impacts to flood plains, wetlands, and public waters. The project consisted of hydrologic analysis using HEC-HMS and hydraulic analysis using HEC-RAS, development of construction plans and specifications, and several water quality improvement projects using Clean Water Fund grants.

Approaches to Setting Numeric Nutrient Targets in the Red River of the North. Ms. Blackburn was project manager for and provided oversight to a comprehensive literature review of the available scientific methods for setting nitrogen and phosphorus water-quality targets. Based on the findings of the literature review, she assisted in developing recommendations to the International Red River Board of the International Joint Commission on the most appropriate methods for setting nutrient targets in the Red River.



Michael A. Rotar, PE, CFM

SENIOR ENGINEER/GROUP MANAGER

OVERVIEW

Mr. Rotar is a group manager/water resources engineer in RESPEC's Bozeman, Montana, office. He has 26 years of professional experience in river and riparian restoration design, sediment transport analyses, hydrologic and hydraulic analyses, bioengineered stream bank stabilization, urban stormwater management (including low-impact development [LID] techniques), highway drainage, wetland mitigation design, and construction management. Mr. Rotar has applied his expertise to a broad spectrum of water resource projects, including channel relocation, hydrologic and hydraulic modeling, drainage analyses, flood control and mitigation, and wetland design for water quality improvement. He has led large-scale channel-design efforts in a variety of environments that range from highly confined urban areas to severely disturbed, mined drainages. Mr. Rotar has provided oversight and construction management for many of the projects he designed.

Technical Expertise

- ✓ *Water Resources Engineering*
- ✓ *Stream Restoration*
- ✓ *Wetland Mitigation/Restoration Design*
- ✓ *Hydrologic/Hydraulic Modeling*
- ✓ *Flood Hazard Analyses*
- ✓ *Stormwater Management*
- ✓ *Construction Engineering and Management*

Education

MS in Civil Engineering, University of Colorado, Boulder, CO (1991)

BS in Architectural Engineering, University of Colorado, Boulder, CO (1988)

Registrations & Licenses

Professional Engineer in Colorado, Idaho, Missouri, Montana, Nebraska, Nevada, North Dakota, Ohio, South Dakota, Texas, Virginia, Washington, and Wyoming

Certified Floodplain Manager (CFM)

Professional Memberships

Association of State Floodplain Managers

Environmental & Water Resources Institute (EWRI-ASCE)

Certifications & Training

Applied Fluvial Geomorphology, Wildland Hydrology, Inc. (1992)

Honors & Awards

South Dakota Department of Transportation Quality Award for Grading Design

2004 Environmental Stewardship Award, National Association of Environmental Professionals

Work History

RESPEC (2013–Present)

Atkins/PBS&J (2005–2013)

Inter-Fluve (1997–2004)

Aquatic & Wetland Co. (1991–1997)

PROJECT EXPERIENCE

Little Knife River Restoration, Dunn County, North Dakota. Working under subcontract to Kadrmas, Lee & Jackson (KLJ), Mr. Rotar is serving as the engineer of record for the stream restoration portion of this project. Work tasks have included (1) developing stream restoration design plans, specifications, and cost estimate; and (2) quality assurance/quality control (QA/QC) inspection of project construction. Design work was completed in early 2014, with project construction commencing in August 2014.

Lower Gallatin Watershed Restoration Plan, Montana. Mr. Rotar assisted with several components of the Lower Gallatin Watershed Restoration Plan (WRP), including identifying restoration activities and best management practices (BMPs) and developing and prioritizing restoration projects for impaired stream segments. Mr. Rotar also co-lead several community outreach meetings with a variety of stakeholders. The intent of the Lower Gallatin WRP is to provide a framework for implementing water quality improvements for sediment, nutrient, and *E. coli* pollutants on the 15 Total Maximum Daily Load- (TMDL-) listed streams within the planning area.

Upper West Fork Nitrogen and Sediment Reduction Project, Big Sky, Montana. Working with the Blue Water Task Force (BWTF), Mr. Rotar assisted with developing conceptual designs for 16 potential projects to reduce sediment and nitrogen pollution from nonpoint sources within the Upper West Fork Gallatin River Watershed. Proposed projects include vegetation enhancements and riparian restoration along the river.

Clark Fork River Plains Reach Assessment and Restoration Prioritization, Montana. Mr. Rotar co-lead a comprehensive, reach-scale study of the Clark Fork River near Plains, Montana. The study included a review of existing hydrologic data, a geomorphic assessment, a Channel Migration Zone (CMZ) analysis, a streambank erosion analysis, an evaluation of restoration alternatives, project prioritization, and a review of permitting requirements and potential funding sources. A suite of restoration alternatives were identified to improve conditions along the Plains Reach of the Clark Fork River and restore natural channel processes while protecting critical infrastructure and economically important lands.

[Whatcom County CMZ Analysis, Whatcom County, Washington.](#) Mr. Rotar assisted with evaluating erosion and flooding potential along several miles of the South Fork Nooksack River near Acme, Washington. The purpose of the analysis was to complete a hazard analysis that identified and prioritized sites along the river where erosion poses a significant risk to infrastructure. Delineation of a CMZ was completed. The CMZ is the area where the active channel of a stream is prone to move over a given time frame. Protection for CMZ functions is critical to reduce flood hazards and habitat loss and to avoid the need for future bank/shoreline stabilization.

[Saltese Flats Wetland Restoration, Spokane County Division of Utilities, Spokane County, Washington.](#) The Spokane County Division of Utilities is evaluating potential wetland restoration opportunities at Saltese Flats, located in the southwest portion of the Spokane metropolitan area. The Saltese Flats wetland restoration project could provide a variety of benefits: a natural treatment system for reclaimed water, delayed runoff to recharge the Spokane Valley-Rathdrum Prairie Aquifer and increase flows in the Spokane River during late summer months, a diverse wildlife habitat, and a community resource for public recreation and education. Saltese Flats occupies roughly 1,200 acres within a watershed of approximately 14,000 acres. Saltese Flats includes land that currently functions as wetland and was a lake/wetland system but has been drained and used for agriculture for more than 100 years. Mr. Rotar serves as the engineering project manager. He recently completed the preliminary design phase of the project (2011–2012) and is currently working on the final engineering design.

[Upper Little Blackfoot Restoration Project, Montana.](#) Aquatic and riparian habitat restoration treatments were implemented along approximately 2 miles of the Little Blackfoot River in 2009. Post-restoration monitoring in 2010 and 2011 included pool measurements; large, woody debris counts; an eroding streambank assessment; and repeat surveys at six established cross sections. Habitat enhancement structures were also evaluated.

[Silicon Mountain Aquatic Resource Mitigation Site, MDT, Silver Bow County, Montana.](#) Mr. Rotar served as the lead engineer for a stream and wetland mitigation project near the intersection of I-15/I-90 west of Butte, Montana. The MDT plans to realign and widen a section of German Gulch Road and replace an existing bridge over the Union Pacific Railroad (UPRR) to provide improved access to the Silicon Mountain Tech Park. As part of this effort, the MDT plans to complete stream restoration treatments along Sand Creek and construct several new wetland areas as mitigation to existing aquatic resources.

[Dead Run Stream Restoration, McLean, Virginia.](#) Mr. Rotar completed a fluvial geomorphic assessment of the stream channel, including use of Wolman pebble counts, a channel evolution model and Rosgen's stream classification system. He evaluated an existing hydrologic model (XP-SWMM) developed for the Dead Run Watershed and used the design flows and channel topography to create a hydraulic model of the project reach by using HEC-RAS. Subsequently, he completed a channel and bank stabilization design package, which included engineering drawings and technical specifications. Bioengineering techniques are proposed for use in most areas to minimize impacts to the stream system and maximize ecological function. Mr. Rotar identified stormwater outfalls and provided recommendations for treatment of these outfall locations.

[Yellowstone Mountain Club, Big Sky, Montana.](#) Working as part of a multidisciplinary design group (engineers, wetland scientists, soil scientists, and plant ecologists), Mr. Rotar participated in designing, constructing, and monitoring over 70 wetland restoration or mitigation sites in a high-elevation, mountainous environment. The restoration and mitigation sites included both former wetland areas and adjacent stream channels.

[Logan Creek Geomorphology and Value Analysis, Glacier National Park, Montana.](#) Mr. Rotar was the project engineer for this project that provided a geomorphic analysis and hydraulic design recommendations for the Logan Creek Bridge. The study provided technical analyses of the hydrology and geomorphology at the Logan Creek Bridge to prepare for a value analysis, which included an analysis of design options related to management of Logan Creek.

[Whites Gulch Placer Mine Restoration, Montana.](#) Mr. Rotar assisted with design and construction oversight of a stream and floodplain restoration project for 3,000 feet of a placer-mined drainage. He conducted hydrologic, hydraulic, and geomorphic investigations necessary for designing and reconstructing the stream channel and floodplain. He developed construction drawings and specifications for all phases of the project, coordinated geotechnical investigations and engineering considerations, and produced construction bid package materials.



Rick R. Moser, PE

VICE PRESIDENT, WATER & NATURAL RESOURCES

OVERVIEW

Mr. Moser has 28 years of experience in water resource planning and design. He has successfully completed numerous projects that involved designing such features as stormwater quality facilities, channel restoration efforts, detention facilities, constructed wetlands, and temporary and permanent erosion-control measures. He has served as project manager on a variety of water resource projects for numerous local and state government agencies.

PROJECT EXPERIENCE

[James Robb State Park Colorado River Bank Stabilization, Colorado State Parks, Colorado.](#) As the project manager, Mr. Moser was responsible for overseeing the design and analysis for bank stabilization measures along the Colorado River for two sites within the James Robb State Park. The project included hydraulic analyses to determine parameters for designing bank stabilization, including scour velocities, scour depths, and shear stresses. Bendway scour analysis indicated that geotextile fabric and riprap should be implemented to repair damaged banks and mitigate future erosion.

[Erosion-Control Inspections—CDOT Region 1 Construction Projects, CDOT, Colorado.](#) Mr. Moser was the inspection coordinator responsible for scheduling inspections and, along with the Region Erosion Control Advisory Team, responsible for interviewing the project professional engineer. In addition, Mr. Moser reviewed the Stormwater Management Plan (SWMP) and the project field conditions, prepared an action item report, and completed the project evaluation and rating form.

[Pine River Bank Stabilization, Bechtolt Engineering and Southern Ute Indian Reservation, Ignacio, Colorado.](#) Mr. Moser was the project manager responsible for the hydraulic analysis of approximately 2,000 feet of the Pine River near Ignacio, Colorado. The hydraulic information was used in designing a gabion slope mattress to protect the channel bank from further erosion. The slope mattress thickness, lateral extents, and vertical extents were established.

[Broadway Avenue Storm Sewer Design, Carter-Burgess and City of Boulder, Colorado.](#) A hydrologic analysis that used the CUHP and UDSWM computer models for a large off-site watershed tributary to Broadway Avenue was completed. The calculated peak flows were then used to identify alternatives and required storm sewer trunk line sizes within Broadway Avenue to adequately convey the 5-year design event. Mr. Moser also served as the project manager for completing construction plans for approximately 3,000 linear feet of storm sewer trunk line improvements.

[Todd Creek Hydraulic Analysis and Conditional Letter of Map Revision \(CLOMR\) Request, Washington Group, Adams County, Colorado.](#) Mr. Moser was the project engineer responsible for a hydraulic analysis completed for the main stem of Todd Creek and two tributaries. The analysis included HEC2 modeling and identifying changes to the 100-year Federal Emergency Management Agency (FEMA) regulatory floodplain. A CLOMR request and the necessary FEMA application forms were completed.

Technical Expertise

- ✓ *Hydrologic and Hydraulic Models*
- ✓ *Watershed Master Planning*
- ✓ *Bridge Scour Analyses*
- ✓ *Channel Restoration*
- ✓ *Drainage Design and Plans*

Education

MS in Civil Engineering (Water Resources), University of Colorado at Denver, Denver, CO (1992)
BS in Mining Engineering, South Dakota School of Mines & Technology, Rapid City, SD (1984)

Registrations & Licenses

Professional Engineer in Colorado, Minnesota, New Mexico, South Dakota, and Wyoming

Professional Memberships

American Public Works Association
Colorado Association of Stormwater and Floodplain Managers (CASFM)

Work History

RESPEC (2011–Present)
Moser & Associates Engineering (2000–2011)
AECOM (1996–2000)
Colorado Department of Transportation (1986–1996)

[Pleasant View Outfall Systems Planning Study, Jefferson County and UDFCD, Colorado](#). Mr. Moser was the project manager responsible for using CUHP and UDSWM to determine the peak flow rates and volumes at various design points within the study area. Several alternatives to mitigate or eliminate flooding problems were identified, and a preliminary design report was completed.

[Spring Gulch Channel Improvements, Highlands Ranch Metropolitan District and UDFCD, Colorado](#). Mr. Moser was the project manager for two drop structures: one grouted sloping boulder drop structure and one vertical concrete drop structure with riprap. These structures were designed, in addition to 500 feet of channel improvements, including side slopes flattening and erosion-control blanket. Construction plans and specifications were prepared.

[City of Englewood Outfall Systems Planning Study, Englewood and UDFCD, Colorado](#). Mr. Moser was the project manager responsible identifying flood-prone areas through citizen input and HEC-RAS modeling. Prioritized improvement recommendations were made based on estimated construction costs, environmental impacts, utility constraints, and right-of-way requirements. An approximate floodplain was defined and a preliminary design report completed.

[Detailed Infrastructure Master Plan for Stapleton, Stapleton Development Corporation, Colorado](#). Mr. Moser was the project manager responsible for the stormwater and drainage management portions of the infrastructure planning project for the 4,700-acre former airport site were completed. Water systems modeling was also completed for the proposed distribution system.

[Straight Creek Erosion-Control Project, CDOT, Colorado](#). Mr. Moser was the project engineer responsible for the designing and construction of 11 sediment basins to reduce sediment loading to the creek. Basin volume, geometry, and release rates were designed to efficiently capture sanding material from winter maintenance operations and from erosion of highway cut slopes.

[Cottonwood Creek Channel Restoration, Southeast Metro Storm Water Authority \(SEMSWA\), Arapahoe County, Colorado](#). Mr. Moser was the project manager responsible for construction plans that included channel restoration, 100-year flood conveyance, and eliminating public safety hazards. The project included approximately 2,500 feet of channel realignment or preservation, flattening large vertical channel banks, a considerable amount of wetland/riparian plantings, and three wetland drop structures. The circular, multitier drops were constructed from steel sheet pile to create both an upper wetland pool and a lower stilling basin. Feature boulders created a gentle, cascading transition between the upper tier and the stilling basin to provide invertebrate passage along the creek. Vegetation, boulders, and pooling water created a structure that visibly appears more organic and provides improved water quality.

[East Plum Creek Channel Restoration, CDOT, Aurora, Colorado](#). As a project manager, Mr. Moser was responsible for successfully implementing phased channel improvements along East Plum Creek. The improvements included grade-control structures to flatten and restore the channel slope, which added the benefit of raising the local water table, a multilevel drop structure to protect the upstream improvements along with the Preble's Meadow Jumping Mouse habitat banking area, minor channel realignment, and bank protection. Construction plans and specifications were prepared for the improvements.

[Flagstaff Road Sediment Control, City of Boulder, Colorado](#). As the project manager, Mr. Moser was responsible for overseeing the preparation of a Sediment Control Action Plan document that addressed means to control natural erosion and adverse impacts from roadway sanding material for approximately 3 miles of Flagstaff Road. The document identified types of best management practices and their locations to protect receiving water quality. As Phase 1 of implementation, construction documents were prepared for a roadside sediment basin that was installed to intercept vehicle traction sand from the highest sand application area.

[East Plum Creek Trail, Town of Castle Rock Parks and Recreation, Colorado](#). Mr. Moser was responsible for overseeing the design and analysis of a new 3-mile recreational trail along East Plum Creek in the town of Castle Rock. The project required cross drainage analysis and culvert design, hydraulic design for two low-water stream crossings, and developing an updated floodplain model.



Beth Markhart



Beth Markhart is the Outreach Coordinator at Prairie Restorations, Inc.'s Princeton office. She started with PRI in 2016. Her responsibilities include sales, native landscape plan design and proposals, management plans, and interaction with university and community groups.

Summary of Qualifications

Education:

BA Degree – Environmental, Population, Organismal Biology – University of Colorado – 1979

MS Degree – Plant Physiology – University of Minnesota – 1986

Certifications:

Certified Professional Wetland Scientist, USA; No. 260; 1995

Wetland Delineator Certified, #1174; MN Wetland Delineator Certification Program; St. Paul, MN; 2008

Rare Plant Surveys Pre-Qualification; Minnesota Department of Natural Resources; Minnesota; 2008

Career Experience:

Invited, 2009-2012. *Rapid Floristic Quality Assessment Technical Advisory Group*, Minnesota Pollution Control Agency.

Elected, 2006-2011. *Minnesota Native Plant Society Board of Directors*, Appointed Chair of the Conservation Committee.

Elected, 2000-2008. *Society of Wetland Scientists, North Central Chapter Board*, Three years each as President-elect, President and national board representative, and Past-president.

Volunteer, 1996-1999. *Greening the Great River Road*. Planting supervisor for major volunteer planting events.

Appointed, 1991-2000. *City of White Bear Lake*, Park Commissioner.

Notable Projects and Clients:

Noerenberg Wet Meadow Restoration – *Three Rivers Park District*

Big Island Wetland Restoration Feasibility Report – *MCWD*

Silver Creek Riparian Restoration – *Carnelian-Marine-St. Croix WD*

Bruce Vento Nature Sanctuary Bluff and Wetland Restoration – *City of St. Paul, MN*

Feasibility for Wetlands B2.A and B1.B Restoration, – *RCWD*

Vegetation Restoration Contracting Guidelines – *City of Golden Valley, MN*

CHRIS HOGLUND, PS
Project Manager



Overview

Chris is a project manager specializing in section subdivision, boundary surveys, platting, ALTA/ACSM land title surveys, lot surveys, and construction staking for land and energy projects. His knowledge of commercial, residential, and energy project management helps drive the success of projects. Chris deals directly with clients, civil engineers, site superintendents, architects, and government officials to make sure each phase of the project is dealt with properly.

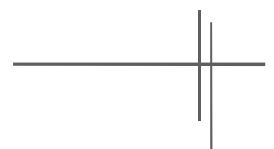
Experience

COMMERCIAL

ALTA/ACSM Land Title Survey, Missota Paper Mill, Brainerd – As the project manager for this 155-acre land title survey, was the head crew chief and draftsman. Tasks included boundary establishment and section breakdown, locating all existing improvements and utilities, setting site control, and drafting this detailed ALTA/ACSM land title survey.

Lakewood Health System-Staples Hospital, Staples, Minnesota – As the project manager for the new Lakewood Health System, Staples Hospital, was responsible for coordination of crews and computations for all aspects of construction staking. Proactively approached the challenges of this fast moving project by maintaining good communication with the client and project team. The unique building design had several different radial structure lines which required experience in many facets of construction surveying. Met aggressive goals and provided quality construction staking for layout of building grids, wall lines, grading, curb and gutter, paving, sidewalks, landscaping, site control, and more.

JC Penneys, Baxter, Minnesota – As the project manager for the new retail store in Baxter, was responsible for the preparation of preliminary and final plats, coordination of crews, and computations for all aspects of the topographic survey for design and construction staking. Worked closely with his client, government officials, architects, grading contractors, and site superintendents to be sure all aspects of the project progressed smoothly.





Deputy County Surveyor, Benton County, Minnesota – Deputy County Surveyor for the remonumentation of 496 Public Land Survey corners. Duties include scheduling crews, research and analysis of historic data, examination of evidence, corresponding with County officials to coordinate excavation of corners, computing corner positions, preparation of Certificates of Government Location and Statements of History.

Cass County, Minnesota – Project Surveyor for the remonumentation Township Public Land Survey corners. Duties include scheduling crews, research and analysis of historic data, examination of evidence, corresponding with County Surveyor to coordinate excavation of corners, computing corner positions, preparation of Certificates of Government Location and Statements of History.

Mississippi Headwaters, Minnesota – Project manager and crew chief for setting up GPS field survey control and collection of water elevation data for URS Corporation and Army Corp of Engineers for Leech Lake, Cass Lake chain, Lake Winnibigoshish, Pokegama Chain of Lakes, Whitefish Chain of Lakes, Gull Lake Chain of Lakes, Lake Bemidji, Big Sandy Lake, City of Aitkin and the Mississippi River from Big Sandy to City of Aitkin.

Education

AAS, Civil Technologies, Central Minnesota Technical College

BS, Land Surveying and Mapping, St. Cloud State University, St. Cloud, MN

Registrations

Registered Land Surveyor: Minnesota, Iowa, Nevada, New York, South Dakota, Oregon, Illinois and California.

Associations

Minnesota Society of Professional Surveyors

Chronology

Westwood Professional Services, May 1999 – Present

