

SUPPORT SERVICES

for the Water Funding Task Force

July 15, 2013



 **OLSSON**[®]
ASSOCIATES

FYRA
ENGINEERING


vireo

LAKE  TECH



July 15, 2013

Rex Gittins
Nebraska Department of Natural Resources
301 Centennial Mall South, 4th Floor
PO Box 94676
Lincoln, NE 68509-4676

RE: Proposal to Provide Support Services for the Water Funding Task Force

Dear Mr. Gittins and Members of the Selection Committee,

The need for a statewide sustainable water program has never been more prevalent than it is today. The floods of 2011 and the drought of 2012 have proven that we must have a plan in place that not only better equips us to handle water issues well into the future, but one that gives us a clear path to successfully implementing the plan's recommendations.

As we've learned from past efforts, this is not an easy task. Consensus is needed from a large group of stakeholders who have varying needs, and the logistical challenges that a group of this size offers are great. In addition, there are thirteen river basins, each with unique needs and challenges, that must be assessed, categorized, and prioritized. You need a project team that has the ability, capacity, and expertise to see this multi-faceted project through to a successful completion. ***The team of Olsson Associates, FYRA Engineering, Vireo, and LakeTech Consulting is that team.***

Here is why we feel the Olsson team is your best choice:

- **Large Group Facilitation and Consensus Building Experience.** The facilitation component of this project will be integral to its success. Our facilitation team, led by Patti Banks, has successfully completed numerous facilitation efforts involving large, diverse groups of community leaders, and has been instrumental in building consensus with groups that possessed dramatically differing opinions and desires.
- **Unmatched Nebraska Resources and Institutional Knowledge.** The Olsson Associates team has strong ties to Nebraska. Collectively, we have 12 Nebraska offices throughout the state and resources in each of those offices that we could draw upon, if needed. Our more than 50 year history in completing water projects in Nebraska offers you an added benefit in that we are extremely familiar with river basins that will be assessed during this project.

- **Comprehensive Technical Expertise.** The Olsson team's expertise in surface water, groundwater, water quality, and watershed protection and management is second to none. This, coupled with our team's experience in other technical areas such as geotechnical investigation, hydrology, irrigation conjunctive management, and environmental recreation provides you with a project team that can perform the detailed and comprehensive assessments needed to best prioritize projects and produce the most accurate cost estimating.

It is clear that this project requires a wide range of expertise, from facilitation to economics to environmental sciences to engineering. The Olsson team is comprised of team members who have dedicated their careers to becoming experts in each of these fields and you will work directly with these individuals to complete this project. Additionally, we've all worked together before and know each other well. This familiarity will allow us hit the ground running, and it will help you efficiently navigate project execution and achieve timely project completion.

To say that we are excited about this project is an understatement. This is the kind of project that excites us and challenges us to be our best for what we believe is an extremely important program. We all want you to succeed in this effort and we will work collaboratively to help you achieve your goal for the good of Nebraskans. I look forward to introducing you to our team at the interview on Friday. In the meantime, please do not hesitate to contact me if you need any further information.

Thank you,

Karen Griffin, PG
Proposed Project Manager and Point of Contact
Olsson Associates
1111 Lincoln Mall
Lincoln, NE 68508
Phone: 402-458-5033
kgriffin@olssonassociates.com

A Closing Thought: *What is your definition of Water Sustainability?*

For Our Team: *Water Sustainability is making sure that water development decisions meet the needs of the present without compromising the ability of future generations to meet their own needs.*

PROJECT APPROACH

PROJECT UNDERSTANDING

The groundwork for the development of a water sustainability strategic plan is well laid out in the work that has been performed and referenced in the LR314 Interim Study Resolution Report, Funding for Water Management. The basic facts of the use of all water resources in Nebraska are well documented. The need for future water resources has been estimated based upon past use and predictions for the future. Sources of available funding from all levels of government and other programs have been identified. Collectively, this data provides the basis to the answers for the difficult questions that are left unanswered;

How can Nebraska fund nearly sixty million dollars in annual expenditures that are needed to meet the demands of the State?

How will programs, projects and activities be prioritized to ensure that the investment in Nebraska's future is done wisely?

In the end, the lack of support for past efforts to provide funding for water projects boils down to a lack of support on the political level. Legislators carry responsibility to represent their constituents and when defining statewide deficits in water resources management, the solutions often seem to overshoot the mark when analyzing them on the local level. A new paradigm in how we look at statewide water sustainability issues must be developed and Nebraskans have to come together to solve the water-related challenges ahead.

The Olsson team will tackle this effort by working with the Commission and Task Force using the information prepared and collected by the task force (and similar predecessors.) The information is at our disposal. It just has to be packaged in a way that makes sense to all parties involved, and packaged while building consensus for support among the users and stakeholders. In this case, the stakeholder group includes every Nebraskan.

TASK 1 | PROJECT MEETING COORDINATION AND FACILITATION

There may be no subject more important to Nebraska than water. It's use, management and stewardship dynamically shapes and reshapes the meaning of sustainability. The Olsson team is excited and at the same time humbled to lead discussion, education and decision-making on this issue.

This large, multifaceted project comes with many stakeholders. Each has a different expectation of the project, and arriving at consensus takes a special skill set that blends technical knowledge with problem solving skills. The Olsson team excels at bringing stakeholders and varied constituencies together to form better relationships, increase common understanding and...

create balanced solutions.

Facilitation

The Olsson team through Patti Banks at VIREO enables the Task Force to work more effectively making it easier and less time consuming to arrive at answers. We blend education, participation and decision-making in an integrated rather than linear way using each and every valuable moment of stakeholder's time to contribute to building all three. It is both mechanics and art. Using a form of "adaptive management", VIREO specializes in a facilitation model where each session builds on what Task Force Members have learned, looks at alternatives for, in the case of this study, prioritization of criteria and funding needs and then evaluates conclusions as the group learns more.

In this way the plan is constructed as we go and likely can be completed in less than the 28 currently scheduled meetings.

VIREO used this technique for the first time in an APWA award winning storm water project **Rain to Recreation** in Lenexa, Kansas. Since then, Rain to Recreation has become a national model for implementation of sustainable storm water management solutions. Citizen priorities were matched with resource identification and project prioritization and implementation with informed consensus (an important distinction to "agreement") from constituents, developers, policy-makers and land owners. Based on stakeholder feedback, prioritization criteria were based on the context within which projects were proposed. These differed by geography, similar to the issues faced in the water funding task for process. Funding allocations were also developed by context and geography with very active stakeholder involvement. VIREO successfully worked with the Rain to Recreation program for **fifteen years** changing the face of Lenexa in the short term and providing a balanced approach to program management and administration that survives today.



Our proposed facilitation approach works within the framework of the 28 meetings previously identified. We would, however, combine education and early plan development with the tours whenever possible. Stakeholders would begin to define geographic differences, project evaluation criteria, and funding needs as part of the tour agenda, linking learning with policy development and implementation early on. Their work is then refined with each subsequent meeting through October, culminating with report writing and review in November.

We take meetings seriously. Each session is carefully planned, meticulously documented during and after the meeting, and centered on outcomes. A variety of techniques are used to help stakeholders arrive at conclusions, which include the following:

- Presentations
- Discussion, both small and large group
- Hands-on experimentation with ideas
- Surveys between and in meetings
- Homework as necessary and appropriate

Logistics, Logistics, Logistics

The arrangements for meetings are as important as planning the meeting content if they are to run smoothly. Triveece Harvey and Sarah Ferdico excel in detailed meeting planning and covering contingencies. Their planning process includes the following tasks:

- **Investigation:** Knowing that we will be touring four geographic areas throughout Nebraska, the Olsson team will immediately investigate transportation, lodging, meeting space and food alternatives in each location. Information related to availability of government rates, room blocks etc. will be gathered.
- **Data Base Creation:** The participant data base is created early on and includes all contact information for participants and appropriate media or other contacts necessary to meet the requirements of the Nebraska Open Meeting Act. The data base will be updated regularly.
- **Draft Meeting/Tour Outlines:** Each meeting/tour is programmed and an outline prepared. It includes every detail about the session and is updated as more information comes available. These details would include the following:
 1. Meeting/Tour Location, Date, Time
 2. Meeting/Tour Objectives
 3. Detailed Meeting/Tour Schedule from set-up to breakdown
 4. Notification Process and Schedule
 5. Handouts
 6. Overview of the Meeting/Tour
 - Staffing and roles
 - Materials
 - Equipment and supplies
 - » Tour route/destinations
 - » Room Layout
 7. Anticipated Outcomes
- **Invitations:** Invitations are done by e-mail, postcard or other means a minimum of two weeks before the meeting, three weeks if at all possible. The invite includes the Meeting Outline so participants know what to expect and what is expected of them. An important part of the invite process is active pursuit of RSVP's. Olsson team members personally follow-up with prospective participants until we have an accurate accounting of attendance.
- **Meeting Documentation and Follow-up:** Meeting/Tour documentation follows immediately after the session including outcomes, decisions, additional information requested and next steps.

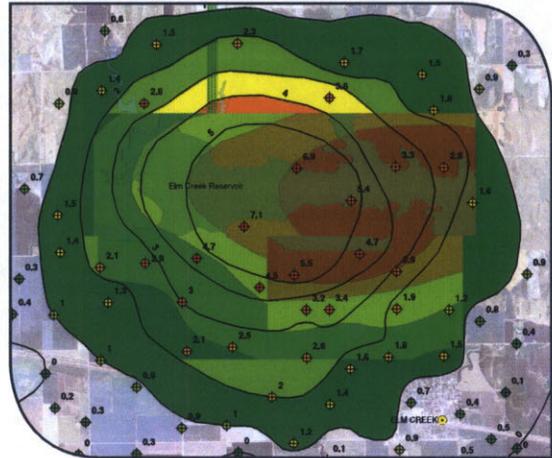


The bottom line is that the Olsson team knows what goes into a productive session and plans for success. Attention to detail and thorough preparation are the essential skills we bring to you to make sure each and every interaction is of the highest quality possible.

TASK 2 | SUPPORT OF TASK FORCE CHARGE

The Olsson team is ready to carry out the charge of the Task Force. As we just described, a critical piece of the project will be the ability to facilitate productive Task Force Meetings so that the final product for this project - the ranking criteria, annual funding mechanisms and recommendations for statutory changes; are balanced and always lead to projects, programs and activities that promote sustainable water use.

The decisions that will be made by the Task Force will require a significant amount of engineering and technical support in terms of assessing potential water projects, formulating cost estimates, evaluating the viability of different ranking systems as well as the ability to gather information through consultation and information gathering from a wide variety of water user groups. For the technical experts on the Olsson team, **this is what we do each and every day.** Our companies permit, evaluate, design, cost estimate, bid, construct, oversee, inspect, and trouble shoot both large and small water projects across the Midwest and over half of our work is in Nebraska. Here is how we will use our expertise to support the charge of the Task Force.



Water table rise beneath Elm Creek Reservoir.

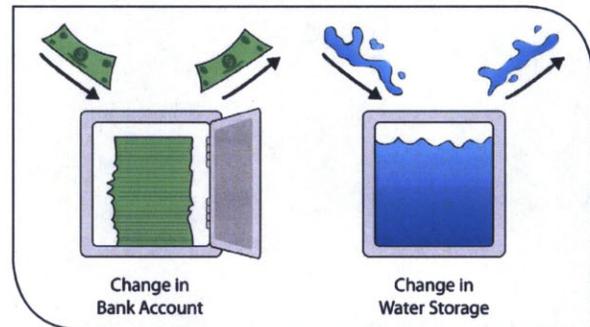
As an example of the Olsson team's ability to provide the necessary information to critically evaluate projects, refer to Olsson's work on the Elm Creek Reservoir project northwest of Elm Creek, Nebraska. For this project, Olsson prepared preliminary design for a large surface water storage reservoir, evaluated the feasibility of several operational plans using both water from existing water delivery infrastructure (the Dawson irrigation canal) and new infrastructure (a series of wells pumping from the Platte River Valley) to supply the conjunctive management storage reservoir. The project was evaluated against criteria including cost, beneficial use such as flood control and recreational use as well as Platte River Flow requirements to meet the long term needs of Central Platte NRD and the Platte River Recovery Implementation Program objectives. The Olsson engineers provided engineering support for:

- Cost estimates
- Design alternatives
- Groundwater modeling

The Water Funding Task Force will be able to tap into the technical expertise of the Olsson team members that are already up to speed on how to evaluate projects under different types of ranking criteria.

Since our teams have done this work on projects for over fifty years, we can critically review preliminary project designs, cost estimates, and project feasibility against proposed evaluation criteria.

Other important aspects of this task include the ability to gather and disseminate information on water sustainability. Currently, Olsson is facilitating the development an Integrated Water Management plan by soliciting input from a 25-member stakeholder advisory committee (SAC), consisting of a diverse panel of individuals who represent the varied interests of water users across the Papio-Missouri River Natural Resources District. Olsson's facilitation team, led by proposed project manager Karen Griffin, is leading the discussion through a series of educational presentations to bring the SAC members to a consistent level of understanding regarding groundwater and surface water interaction, legal/regulatory authority and most importantly, the sustainability of the current level of consumption. Throughout the education process, the Stakeholders have defined the group's desired goals and objectives for the IMP which is the foundation for the project's ultimate goal of developing a comprehensive groundwater and surface water management plan that protects existing interests while facilitating economic growth and well-being across the district. The next steps for the project are to solicit public input on the proposed Voluntary IMP through public meetings and public hearings. This experience ties directly with supporting the charge of the Task Force. With the Olsson team, we know the experts in the field of water balance, supply and demand; we have worked together before and will tap into our existing relationships to keep this Task Force focused on the goal to develop a long-term funding mechanism for water sustainability projects across Nebraska.



Balanced water management is like balancing your checkbook.

TASK 3 | PROJECT REPORTING

Before the Olsson team tackles how to finance the projects, we first have to collectively decide what we are financing. The development of the strategic plan, including the identification or development of ranking criteria to prioritize projects, is the "what." By creating the criteria, the type of programs, projects and activities that will be identified for funding will become clear. Therefore, those same programs, projects and activities will be shaped from the very beginning to maximize how well they fit with the criteria developed (in order to improve the chances that the projects are funded.) Therefore, it is vital that the criteria are developed wisely.

The four classifications for water-based programs, projects, and activities (PPAs) are restated below in the interest of brevity;

1. Research and development
2. Water supply infrastructure
3. Groundwater and surface water management
4. Legal requirements

In order to prioritize them, a unit of measure must be developed. That unit of measure could possess both objective and subjective factors. Basic economic factors such as an economic rate of return can be developed for each classification. Two examples are given below, but the process applies to all four.

Research and Development: research is done to develop a new hybrid of corn. The new hybrid produces a higher yield by using less water. The costs of the development of the hybrid are compared against the benefits of less water use and a benefit:cost (B:C) ratio is computed.

Water Supply Infrastructure: a canal from a storage reservoir is enclosed to reduce the evaporation and seepage losses from the existing earthen periphery of the canal. The cost of enclosing the canal is compared against the benefits of the reduction of water losses and a B:C ratio is computed.

The difficulty comes in the comparison of one category to another. The processes by which one benefit is computed and compared to another varies from application to application. For instance; a dam built for groundwater recharge could claim benefits for raising the local aquifer level and therefore using less energy to pump each acre-foot of water through a center pivot to irrigate crops. Money is saved for using less energy since the water had to be raised less to the surface. This value on the acre-foot of water could be compared to the cost it takes to supply an additional acre-foot of water to meet stream flows identified as necessary to provide suitable habitat for a threatened or endangered species. Because of the complexity of the changes in the stream hydrology needed to meet the regulatory (or legal) flow requirements, the cost per acre-foot computes to be eight times that of the savings of the groundwater recharge project.

Solutions to the above challenges exist. They would, of course, have their own drawbacks, but if those involved with and administering the program understand the advantages and limitations of each method, competition for funding within the PPA can be as fair as reasonably possible.

One potential solution would be to dedicate or compartmentalize funds for each type of PPA. A dedicated amount of money for each would be set aside and competition for funds can be done objectively by the PPA type. This would level the playing field for similar projects and they could be compared on a reasonably level playing field. The challenges of this become the remaining differences in the "objective" ranking criteria that are established and the total program amount that is dedicated to each of the four PPAs. The Nebraska Resources Development Fund has operated similarly for years.

Another option is to create a system where subjective ranking criteria are used and more specifically, non-dollar quantifiable criteria. For instance, many of the ranking criteria identified in the LR314 report and listed on page 2, paragraph b under Task 3 in the Scope of Work for this effort, have a subjective nature to them. Creating sustainable solutions to water problems is a must. Sustainability, however, is not a project trait that is easily quantified. Calculating the positive effects of the long-term use of water for a particular effect on the environment, affected infrastructure, etc. is not easily done. Even water quality is difficult to put into dollars. It is, however, easily measured using its own related characteristics such as clarity, temperature, pH, etc. The Nebraska Environmental Trust operates similar to this. Environmental value



is difficult (and some would hope impossible) to quantify, and therefore, it must be done qualitatively and judged subjectively.

There do exist systems that do both of these. The U.S. Army Corps of Engineers, when administering their Section 206 Environmental Restoration program used a tool that they developed called ECO-EASY (currently called the IWR-Plan). The tool required that the net costs be developed and then compared to the incremental increase of certain screening criteria developed in the alternatives analysis phase. This system was used for the Sand Creek Environmental Restoration project in Saunders County. Because the project was restoring wetlands of various types throughout the watershed, the amount of acres restored in each alternative were compared to costs for the alternative. Then, using the law of diminishing return, an alternative was selected when additional money spent (on a more expensive alternative) could no longer support the amount of additional wetlands created. This prevented the need to establish an objective value in the wetlands. This tool was used across the country for different projects using many different ranking criteria. This system would work very well with and alongside the ranking criteria identified in the Scope of Work to bring the most valuable projects to the top.

It is this team's opinion that all three of the potential ranking systems described above (objective, subjective and hybrid) can work. Our intention is to work with the task force to test each system and discuss the outcomes. What worked well? What needs to be improved? The projects identified by various water users in the LR314 study makes an excellent focus pool from which to compare. By testing each, we can analyze the pitfalls of each method and arrive at a solution that is most suitable for the overall program as it evolves through this process.

Once the above (the "what") is defined, the "how" can then more easily be defined.

From a funding standpoint (sales tax revenue versus usage fees, etc.) to an administration standpoint, the framework to administer the program can be defined. The legal, administrative, and technical capabilities to run the program exist already within the Department of Natural Resources and, if expertise from other state agencies or the University is needed, it can be brought in. This would likely be paired with a group similar to the Natural Resources Commission, or the Commission be used as is. That can all be determined once the process is defined.

Similarly, the amount of funding needed can be refined and is likely never going to be perfect the first time. Project successes in the near future may encourage legislators to increase the fund's allocation in the coming years when the true value of the program can be measured and showcased for all.

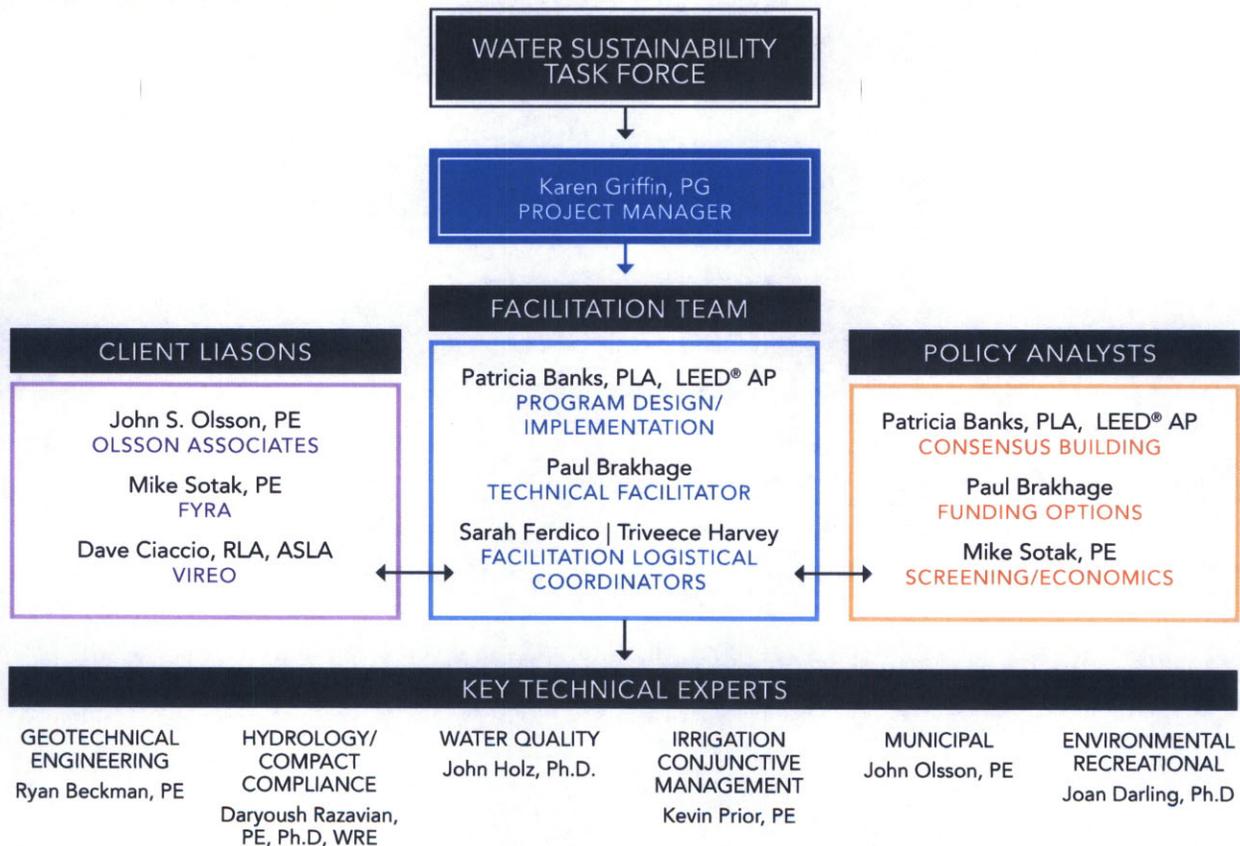
This brings up a very pertinent point: to do this correctly, not only does an appropriate ranking system need to be developed, a long-term monitoring system must be developed to assess the value of the project years into the future.

THE OLSSON PROJECT TEAM



The Support Services for the Water Funding Task Force project requires a wide and varied range of expertise, from facilitation to economics to environmental sciences to engineering, and each area is important to the success of the project. We have assembled the Olsson team to offer you experts in each of these fields, and have the “bench strength” within our team’s 12 Nebraska offices to pull in additional resources, if needed. The individuals listed below are widely known for their specific areas of expertise, and will work directly with you to complete this project. Additional resources not listed on the organization chart can be found in the resume section at the end of this submittal.

ORGANIZATION CHART



KEY TEAM MEMBERS

Karen Griffin, PG | Project Manager and Point of Contact

Olsson Associates



Our proposed project manager, Karen Griffin, has 23 years of experience managing multidisciplinary projects focused in the fields of geology and hydrogeology, and has spent the last 9 years in Nebraska, working on Nebraska water-related issues. Her experience includes collecting and evaluating hydrogeologic data, developing groundwater models, developing maps and geologic cross sections for interpretation and visualization of hydrogeologic data, and facilitating public meetings. Karen is a recognizable face with water stakeholders across the state and specifically with those involved in the LR314 study, as she served as a member of the task force committee. Most recently, she has been working across the state on integrated water management and groundwater plans for NRDs. She understands today's complex water issues from a technical standpoint and is highly experienced working with user groups affected by today's water-related challenges. Karen will be your primary point of contact and will work closely with all team members to ensure seamless communication throughout all phases of the project and to keep the project on task in order to meet the project schedule.

Patrica Banks, RLA, LEED® AP | Lead Facilitator

VIREO



Patti Banks is dedicated to developing sustainable solutions and facilitating the dynamic public processes that lead to successful, environmentally responsible planning and design. With over thirty years of professional experience, Patti has an in-depth understanding of master planning, urban design, landscape architecture and public/private development planning. She is also at the forefront of her profession in using natural resource preservation as the basis for sound planning decisions. Patti has directed large, multi-disciplinary teams and has led significant community engagement processes on many of the firm's projects. She is particularly skilled at engaging people in the public process, building consensus in projects with constituencies of dramatically divergent opinions and incorporating citizen ideas into innovative design and planning solutions. Patti's twenty years of city management experience contribute a unique perspective and an understanding of the public decision-making process not often found in the private sector.

Mike Sotak, PE | Client Liason

FYRA Engineering



Mr. Sotak has 22 years of experience in water resources engineering, serving as a lead staff engineer and project manager for several projects. He has extensive experience on projects for natural resources districts including watershed planning, economic analyses, river restoration/bank stabilization and levee and dam design. He also has extensive grant writing and funding program identification experience.

Mr. Sotak's experience in watershed planning has been gained largely by bringing aged PL-566 and watershed improvement projects not

implemented to current standards through cost and benefit updating related to design services and flood reduction and recreation economics. He is experienced in NRCS-related economic software including TR-20 (hydrology), WSP2 (hydraulics), URB1 (urban damages) and ECON (agricultural damages.) His team has also been successful in bringing the methodology of these programs into HEC-RAS, HEC-HMS and GEO-RAS formats. More recently, Mr. Sotak has served as the Project Manager on two levee certification projects on the Loup, Platte and Missouri Rivers in Nebraska. He has also led teams of NEPA professionals through the project formulation, planning and design phases of all water resources projects.

He has served as the field, design and project manager on several structural watershed improvement projects and has personally been involved with the design and construction of over 100 dams since 1990. Lastly, he has rendered risk assessment studies in relation to the formation and implementation of Emergency Action Plans for several high hazard structures.

Paul Brakhage | Technical Facilitator

LakeTech Consulting



Paul has more than 30 years of water quality and watershed protection and management experience. Paul spent 23 years working for the Nebraska Department of Environmental Quality (NDEQ), where he served in a variety of management roles. His experience includes involvement in water quality and/or water quantity projects in Nebraska, Iowa, Kansas, Louisiana, Missouri, North Dakota, Ohio, South Dakota, California, and Texas. He has provided oversight for the State of Nebraska on more than 65 lake renovation projects and 29 watershed protection projects in urban and rural areas, with seven of those projects resulting in Section 303(d) list removals for sediment, nutrients, algae toxins, and atrazine impairments. Paul has provided leadership in the development of watershed protection and lake renovation projects, and, while at NDEQ, was responsible for coordinating Nebraska's Nonpoint Source Management Program, Stormwater Program, and Clean Lake Program.

Kevin Prior, PE | Irrigation Conjunctive Management

Olsson Associates



Kevin's responsibilities include managing numerous water and municipal projects, such as feasibility studies, project design, and construction engineering. He possesses extensive expertise in grant writing and financing municipal projects. Kevin has experience in designing and constructing several wastewater projects, including sewer mainline, sewage lift stations, grinder pumps, force main, and facultative lagoons. His water project experience includes: distribution mains, municipal wells, and elevated storage reservoirs. His experience in municipal street design includes storm sewers, inlets, and detention facilities for stormwater runoff.

Education

- ▶ Master of Arts, Sedimentology/Paleontology; University of California, Santa Barbara, 1988
- ▶ Bachelor of Arts, Geology; Smith College, 1984

Professional Registrations

- ▶ Geologist: MO, # 2005004593
- ▶ Geologist: NE, # PG-0230
- ▶ Geologist: USA, # CGP-10260
- ▶ Geologist: WY, # PG-2725
- ▶ Geologist: KS, # PG-751

Affiliations

- ▶ American Institute of Professional Geologists
- ▶ Groundwater Foundation

Certifications and Specialized Training

- ▶ Certified Water Monitoring Technician-Nebraska
- ▶ National Safety Council-First Aid and CPR
- ▶ Odor Science and Engineering-Odor Training Certificate
- ▶ OSHA 10-Hr Construction Safety and Health Training
- ▶ OSHA 1910.120 8-Hr Supervisor Hazardous Materials/Waste Health and Safety Training
- ▶ OSHA 1910.120; 40-Hr and Current 8-Hr Updates for Hazardous Waste H&S Operations
- ▶ OSHA 1910.146 Confined Space Entry
- ▶ OSHA Construction Standards for Excavation-Trench Safety
- ▶ RCRA Hazardous Waste Landfill Training

Olsson Professional Experience

- ▶ 2004 To Present

Total Professional Experience

- ▶ 1990 To Present



Karen Griffin, PG

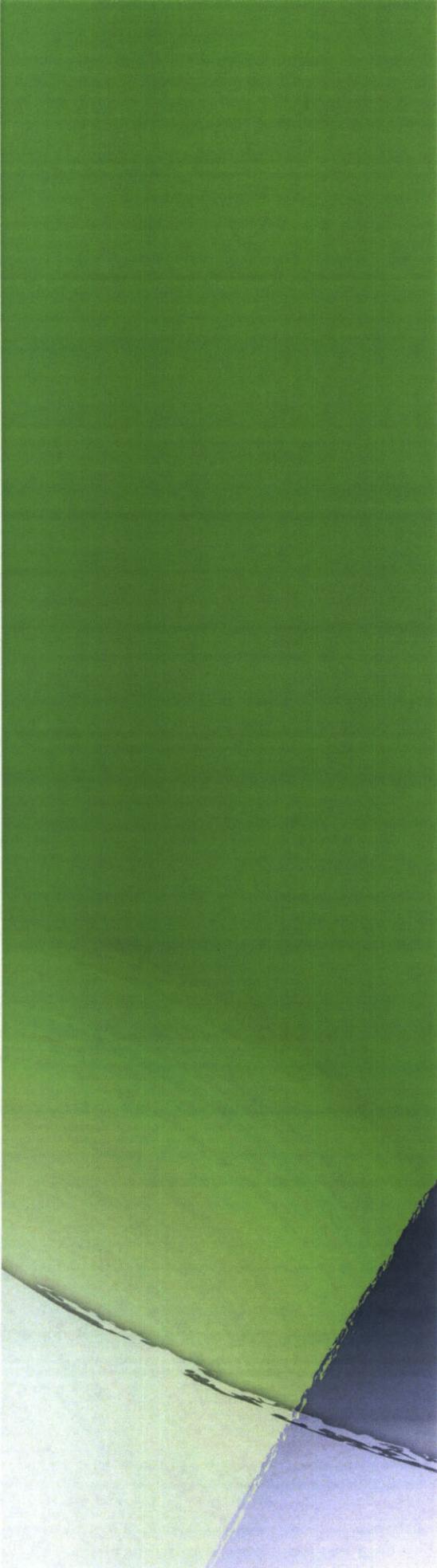
Project Manager

Experience Summary

Karen has 23 years of experience managing multidisciplinary projects focused in the fields of geology and hydrogeology. She has successfully completed both large-scale Superfund remediation projects as well as soil and groundwater investigations for industrial and municipal clients. Her experience includes collecting and evaluating hydrogeologic data, developing conceptual models of the site hydrogeology, designing and implementing test hole drilling and well sampling programs, designing and evaluating aquifer tests, developing groundwater models and running model simulations, developing maps and geologic cross sections for interpretation and visualization of hydrogeologic data, preparing technical reports, and facilitating public meetings.

Water Management Planning/Facilitation

- Project Manager/Lead Facilitator for the Papio-Missouri River Natural Resources District's (NRD) Integrated Water Management Plan (IMP). As the groundwater technical leader, Karen is facilitating stakeholder advisory committee meetings to develop goals and objectives for the IMP. She is also coordinating with the Papio-Missouri River NRD and the Department of Natural Resources (DNR).
- Project Manager/Lead Facilitator for two Level 1 Watershed Studies for the Wyoming Water Development Commission (WWDC) in Thunder Basin, Wyoming. The projects included developing an inventory and description of the watershed that includes basic physical science information such as geology, hydrology, soils, climate, plant communities, wildlife habitat, and geomorphic characterization of the stream systems. This information was incorporated into a rehabilitation and management plan complete with cost estimates for potential project activities.
- Senior geologist for well field evaluation/water transfer permits in Waverly, Alliance, DeWitt, Henderson, and Hickman, Nebraska
- Project Manager for the hydrogeologic evaluations for the Lower Platte North and Lewis & Clark NRDs. For both districts, a series of GIS maps were prepared along with subarea delineation maps for groundwater management decision makers, including the NRD staff and Board of Directors.
- Project Manager for a groundwater impact analysis at a power plant in Hastings, Nebraska. Karen developed a groundwater flow model using MODFLOW to simulate the potential impacts of the two new plant wells on more than 500 wells in the surrounding 121 square-mile area. The transient flow model simulated a 20-year period incorporating recharge rates and irrigation well pumping rates based on precipitation and corn crop irrigation requirements.
- Project Manager for hydrogeology evaluations for the Nemaha NRDs in eastern Nebraska. Coordinated aquifer evaluations and data set development for groundwater modeling of critical areas where water level declines have prompted changes in the groundwater management programs.
- Project Manager for the Surface Water Management task at Rocky Mountain Arsenal, Commerce City, Colorado. Inventoried, documented, and updated the current and future surface water supply and demand. Designed and evaluated alternate groundwater supply sources including groundwater production wells. Performed and analyzed aquifer pumping tests and hydrogeologic models to assess drawdown and groundwater flow path modifications.



Karen Griffin, PG
OLSSON ASSOCIATES

Experience, Continued

- Project Manager for a drilling and sampling support task that included field reconnaissance of over 3,000 monitoring, extraction, and injections wells, United States Army. Developed a database for well inventory and sampling information then selected over 550 wells for abandonment. Wells were abandoned in accordance with State of Colorado requirements.
- Senior geologist for groundwater evaluations submitted to the Upper Big Blue NRD for the Fairmont, Aurora and Sutton Ethanol Plants. All evaluations were accepted by the NRD and well permits applications were approved.
- Senior geologist for the Grand Island Ethanol Plant well field evaluation in Grand Island, Nebraska. Prepared a groundwater model to simulate potential impacts to nearby irrigation, industrial and city water supply wells for presentation to the Grand Island City Council in response to public comments on the proposed plant location.

Well Field Studies and Design

- Senior Geologist on water supply projects for Alliance, Bridgeport, Hickman, and Nebraska City, Nebraska. Evaluated site-specific hydrogeology by designing and installing test holes as well as performing and analyzing aquifer tests. Defined well field expansion areas based on the results of the field investigations.
- Senior geologist on the WWDC's Water Supply Study in Manville, Wyoming. Evaluated alternative groundwater sources and alternative municipal water supply operations in a town with elevated uranium levels in the public water supply.

Brownfields

- Senior Geologist for the West Haymarket Brownfields Redevelopment Project in Lincoln, Nebraska. Investigating the soil, groundwater and soil gas contamination associated with the former City landfills. Redevelopment plans for the landfill area include recreational facilities such as ball fields, a dog run, pedestrian and bicycle paths, and an indoor ice arena for the City of Lincoln's Planning Department.
- Grant Writer for an EPA Brownfields Assessment Grant in Sarpy County, Nebraska. Submitted and received a \$200,000 Brownfields Assessment grant for a former fertilizer manufacturing facility. The 954-acre site is uniquely situated at the confluence of the Platte and Missouri Rivers. Groundwater and soil contamination has the potential to inhibit future redevelopment. Assessment and future cleanup can help revitalize the area as well as be protective of human health and environment.

Base Realignment and Closure

- Project Hydrogeologist for the Pueblo Chemical Depot Site Investigation, Pueblo, Colorado. Prepared and presented a comprehensive hydrogeologic report and 3D conceptual site model using existing hydrogeologic information for the Base Realignment and Closure project for the US Army.
- Project Scientist for the Pueblo Chemical Depot Environmental Baseline Survey Project, Pueblo, Colorado. Prepared an environmental baseline survey on buildings for lease to the public under the Community Environmental Response Facilitation Act (CERFA) for the US Army.
- Community Relations Specialist at PCD, United States Army. Wrote and assisted in production of a promotional video and fact sheets for Base Realignment and Closure Project community relations. The video and fact sheets were used for public meetings and public outreach by the US Army.



Patricia Banks | RLA

Lead Facilitator

Education

Bachelor of Horticulture-
Landscape Architecture |
Purdue University | 1973

Registration

PLA - KS - 586
PLA - MO - 000174
PLA - OH - L-76-00352
LEED AP

Experience

18 Years owner of Vireo
18 Years Prior in City
Management

Patti Banks is dedicated to developing sustainable communities and facilitating the dynamic public processes that lead to successful, environmentally responsible planning and design. With over thirty years of professional experience, Patti has an in-depth understanding of master planning, urban design, landscape architecture and public/private development planning. She is also at the forefront of her profession in using natural resource preservation as the basis for sound planning decisions. Patti has directed large, multi-disciplinary teams and has led significant community engagement processes on many of the firm's projects. She is particularly skilled at engaging people in the public process, building consensus in projects with constituencies of dramatically divergent opinions and incorporating citizen ideas into innovative design and planning solutions. Patti's twenty years of city management experience contribute a unique perspective and an understanding of the public decision-making process not often found in the private sector.

Rain to Recreation | Lenexa, Kansas

Client: City of Lenexa, Kansas

Patti worked with the City of Lenexa, Kansas for 15 years to plan and implement the City's award winning storm water management program. The work began with public prioritization of needs and required strong facilitation skills to weave a program that was ultimately supported by the development community, policy-makers and the public. Three different voter initiatives were successfully passed over the 15 year period, each with over 70% approval, attesting to the high quality of problem solving, communication and matching of results with citizen objectives.

Upper Blue River Watershed Initiative | Johnson County, Kansas

Client: Johnson County, Kansas

This project spanned two states and several counties and successfully created political support for implementation of Best Management practices across the project area. A wide variety of stakeholders participated in natural resource preservation education and then prioritized lands of most value for protection. The project led to the establishment of the Heartland Conservation Alliance, a not-for-profit land trust accepting and managing conservation easements in the Upper Blue River Watershed bringing the vision to life.

St. Louis Water District Business Plan | St. Louis, Missouri

Client: City of St. Louis

The St. Louis Water Department faces significant challenges with operations, capital investment and public support. The Business Plan Project was completed through in-house facilitation of department management staff and line staff bringing them together on City Council objectives and prioritizing initiatives to explore. The results overcame years of distrust between management and line personnel. The City chose a contract service provider as a result of the project and is implementing cost effective, change over the next five years.

Michael K. Sotak, P.E.

Owner/Principal Engineer



Mr. Sotak has 22 years of experience in water resources engineering, serving as a lead staff engineer and project manager for several projects. He has extensive experience on projects for natural resources districts including watershed planning, economic analyses, river restoration/bank stabilization and levee and dam design. He also has extensive grant writing and funding program identification experience.

Mr. Sotak's experience in watershed planning has been gained largely by bringing aged PL-566 and watershed improvement projects not implemented to current standards through cost and benefit updating related to design services and flood reduction and recreation economics. He is experienced in NRCS-related economic software including TR-20 (hydrology), WSP2 (hydraulics), URB1 (urban damages) and ECON (agricultural damages.) His team has also been successful in bringing the methodology of these programs into HEC-RAS, HEC-HMS and GEO-RAS formats. More recently, Mr. Sotak has served as the Project Manager on two levee certification projects on the Loup, Platte and Missouri Rivers in Nebraska. He has also led teams of NEPA professionals through the project formulation, planning and design phases of all water resources projects.

He has served as the field, design and project manager on several structural watershed improvement projects and has personally been involved with the design and construction of over 100 dams since 1990. Lastly, he has rendered risk assessment studies in relation to the formation and implementation of Emergency Action Plans for several high hazard structures.

PROJECT EXPERIENCE

Dams

Upper Salt Creek Watershed Rehabilitation of 10 Aging Dams - Design, Permitting and Construction • Lancaster County, Nebraska • Lower Platte South Natural Resources District • Current - Project Manager and Civil Engineer of record for final design, permitting and construction for the rehabilitation of ten aging NRCS-designed dam structures. Includes principal spillway replacement or slip-lining of existing pipes. Final design included hydraulic and geotechnical analyses, and cold-weather construction planning. A 404 nationwide permit was obtained for this project.

Education:

M.B.A., 2001, (University of Nebraska-Lincoln)

B.S., 1992, Civil Engineering (University of Nebraska-Lincoln)

Certifications:

Professional Engineer:
Nebraska (#E8759, 1997),
Iowa (#16681, 2003), Kansas
(#17431, 2002), Missouri (PE-
2006031321, 2006), Arizona
(#35258, 2000), NCEES
(#21734, 2003)

Affiliations:

Society of American Military
Engineers, Member

American Society of Civil
Engineers, Associate

National Society of
Professional Engineers,
Member

Association of State Dam
Safety Officials, Member

Omaha Suburban Rotary,
Board of Directors

Omaha Engineers Club,
Member

Leadership Omaha Class 25,
Member

Weeping Water Creek Watershed Site 8a Dam Rehabilitation • Cass County, Nebraska • Lower Platte South Natural Resources District • 2012 - Project Manager and Civil Engineer of record for the investigation, design, permitting and construction of the rehabilitation of an aging dam structure including the renovation of the armored stilling basin and outlet channel.

Fort Peck Reservoir Riser Curtain Design • Fort Peck, Montana • United States Corps of Engineers, Omaha District • 2012 - Quality Control Reviewer for temperature control curtain planned for Fort Peck reservoir.

Upper Salt Creek Watershed Rehabilitation of 10 Aging Dams - Feasibility Report • Lancaster County, Nebraska • Lower Platte South Natural Resources District • 2012 - Project Manager for the investigation and feasibility study for the most cost effective method of rehabilitating the principal spillway for ten aging dams. This included field investigations, conceptual design and cost comparisons of alternative rehabilitation methods.

Weeping Water Creek Watershed Site 4j Dam Rehabilitation • Cass County, Nebraska • Lower Platte South Natural Resources District • 2011 - Project Manager and Civil Engineer of record for the investigation, design, permitting and construction of the rehabilitation of an aging dam structure including the stabilization of the upstream wave attenuation berm and renovation of the armored stilling basin.

Mill Creek Watershed Site 5 Dam Rehabilitation • Cass County, Nebraska • Lower Platte South Natural Resources District • 2010 - Project Manager and Civil Engineer of record for the investigation, design, permitting and construction of the rehabilitation of an aging road dam structure including the improvement to the internal drainage system to address seepage issues.

Weeping Water Creek Watershed Flood Control Structures - Project Economics • Eastern Nebraska • Lower Platte South Natural Resources District • 2008 - Project Manager for NEPA and engineering services provided to the Lower Platte South Natural Resources District (LPSNRD) Weeping Water Creek Watershed Project economics including 19 flood control structures. Provided breach risk assessment, flood reduction analysis, and analysis for recreation applications.

Sand Creek Dam Sites • Nebraska • Lower Platte North Natural Resources District • 2008 - Civil Engineer for U.S. Army Corps of Engineers Sand Creek dam sites 2, 3, 6, 12, 13, 15, 16.

Lake Wanahoo Dam Design and Permitting • Wahoo, Nebraska • Lower Platte North Natural Resources District • 2008 - Project Manager and Civil Engineer of record for the design of a high hazard dam and reservoir, including the design of a roller compacted concrete auxiliary spillway. This was a multi-agency project that required management of several funding sources and coordination with Nebraska Department of Roads for the highway that was designed along the backside of the dam. Fisheries structures were designed for the reservoir to improve habitat and angler access.

Silver Creek Watershed Project • Burt County, Nebraska • Papio-Missouri River Natural Resources District • 2008 - Design Engineer for dam design to provide flood control, sediment storage, and grade stabilization for Papio-Missouri River Natural Resources District (NRD), which included upgrading design from class "C" to class "A" hazard classification.

Leigh Dam • Leigh, Nebraska • Papio-Missouri River Natural Resources District • 2007 – Project Manager and Civil Engineer of record for a high hazard dam and reservoir near Leigh, Nebraska. Responsible for the investigation, design and permitting of the dam embankment and associated in-lake fisheries structures.

Lake Wanahoo Utilities Relocation • Wahoo, Nebraska • United States Army Corps of Engineers, Omaha District • 2006 - Design Engineer for Lake Wanahoo Utilities Relocation (USACE Sand Creek Study), Wahoo, Nebraska. Site sanitary sewer connected through dam corridor via deep foundation alignment.

Stevens Creek Watershed Dam and Sky Ranch Sites • Nebraska • Lower Platte South Natural Resources District • 2005 - Design Engineer for LPSNRD Stevens Creek Watershed Dam Sites A2-1, A3-2, A5-A6-A7-A9-A9-6, A11-2, A17-1, and Sky Ranch sites. Ten high hazard sites designed for flood control and stream grade stabilization in developing watershed east of Lincoln, Nebraska

Campbell's Dam Engineering Design • Lincoln, Nebraska • 2005 - Design Engineer for Campbell's Dam, in Lincoln. High hazard site designed in upscale neighborhood and incorporated first fuse-plug spillway in Nebraska.

Waterford Estates Dam • Lincoln, Nebraska • 2004 - Design Engineer for Waterford Estates Dam in Lincoln. This high hazard site is re-design of Stevens Creek Sky Ranch site with the pool enlarged for private development.

Gaebel Dam Design • Cass County, Nebraska • 2004 - Design Engineer for Gaebel Dam in Cass County. High hazard site designed for rural flood control south of Louisville, Nebraska.

Pawnee County Lake - Large Multi-Purpose Reservoir Study • Southeast Nebraska on Nebraska/Kansas State Border • Nemaha Natural Resources District • 2003 - As Project Manager, provided flood control evaluation in Kansas, recreation analysis, potable water supply, and economic stimulus analysis.

Pigeon-Jones Creek Watershed Structure 15 Design • Papio-Missouri River Natural Resources District • Dakota County, Nebraska • 2003 - Design Engineer for P-MRNRD Pigeon-Jones Creek Watershed Structure 15 in Dakota County. Preliminary design of high hazard site was completed for funding through Nebraska Resources Development Fund.

Pigeon Creek Site 3 Design • Hubbard, Nebraska • 2003 - Design Engineer for P-MRNRD Pigeon Creek Site 3, Hubbard, Nebraska. High hazard site was designed for flood control through Hubbard, Nebraska and for possible private development around the lake.

Raikes Flood Control Structure Design • Ashland, Nebraska • 2003 - Design Engineer for Raikes Flood Control Structure, Ashland, Nebraska. Site designed for rural flood control and cattle watering.

KC Road Parkway Dam Engineering • Olathe, Kansas • 2002 - Design Engineer for City of Olathe's KC Road Parkway Dam. Site designed to upgrade high hazard structure to meet current dam design criteria as part of park renovation and included R.C. spillway formed into limestone abutment.

Sand Creek Watershed - Watershed-wide Environmental Restoration Project • Eastern Nebraska • U.S. Army Corps of Engineers, Omaha District • 2002 - Provided non-dollar quantifiable assessment of restoration output units in ECO-EASY. Also provided evaluation of flood control, recreation, and performed risk assessments.

Maple Creek Watershed Project Flood Control Evaluations • Northeast Nebraska • Lower Elkhorn Natural Resources District • 2001 - Project Manager for evaluations of 28 flood control structures in northeast Nebraska watershed originally proposed under PL-566. Provided evaluation of flood control, recreation, and risk assessment.

Johnson County Detention Study • Johnson County, Kansas • 2001 - Project Engineer for study of potential urban flood reduction benefits in Johnson County, Kansas.

Road Dam Site 14ad-13-4 • Butler County, Nebraska • Lower Platte South Natural Resources District • 1991 - Design Engineer for road dam site 14ad-13-4, Butler County, Nebraska, LPSNRD. Site was designed to provide flood protection in the watershed in lieu of replacing damaged county road bridge.

Weeping Water Creek Watershed Dam Sites Design Engineering • Nebraska • Lower Platte South Natural Resources District • 2000 - Design and Field Engineer for Weeping Water Creek Watershed Dam Sites 4f, 4j, 5h, 5k, 7g, 8a, 15b, 15g, 6b, 7c, 21a, 2a, 2I, 15I, 17d, 17I, and 19c, Lower Platte South NRD. Sites designed for rural flood control in Southeastern Nebraska watershed, providing recreation and flood control for several small towns.

Upper Little Nemaha Watershed Dam Sites • Nebraska • Nemaha Natural Resources District • 2000 - Design Engineer for Upper Little Nemaha Watershed Dam Sites 21, 23, 25, 31, 61, 42, 50, 63, Nemaha NRD. Sites designed for rural flood control in Southeastern Nebraska watershed, providing

Walnut Creek Lake (formerly Papio Dam Site 21) • Papillion, Nebraska • Papio-Missouri River Natural Resources District • 1997 - Project Manager for economic, environmental (NEPA) and technical evaluations related to high-hazard multi-purpose reservoir in Papillion, Nebraska. Analysis included flood reduction, recreation, and dam breach risk assessment.

Skull Creek Dam Site Engineering • Nebraska • Lower Platte North Natural Resources District • 1997 - Design Engineer for LPNNRD Skull Creek Dam Sites 30, 31 and 55. Watershed flood control project provided flood control and recreation benefits in Central Nebraska.

Lake Wanhoo Study • Wahoo, Nebraska • Lower Platte North Natural Resources District • 1994 - Project Manager for evaluations of high-hazard multi-purpose reservoir near Wahoo, Nebraska. Analysis included flood reduction, recreation application, and risk assessment. Project design was completed within Environmental Impact Statement for project.

Skull Creek Watershed Project Evaluation • Eastern Nebraska • Lower Platte North Natural Resources District • 1994 - Project Manager for four flood control and recreation structures in Eastern Nebraska originally proposed under PL-566. Provided evaluation of flood control, recreation, and associated risk assessments.

Road Dam Sites • Cass County, Nebraska • Lower Platte South Natural Resources District • 1993 - Design and field engineer for road dam sites 7, 12ba, 36cb, Cass County, LPSNRD. Sites provided flood control in lieu of replacing damaged county road bridges.

Upper Little Nemaha Watershed Project • Southern Nebraska • Nemaha Natural Resources District • 1993 - Project Manager for economic, environmental (NEPA) and technical analysis of 21 flood control structures in southeastern Nebraska. Project included evaluations for flood reduction, recreation, and breach risk assessment.

Stevens Creek Watershed Project - Flood Control and Open Space Study • Lincoln, Nebraska • Lower Platte South Natural Resources District • 1993 - Project Manager for study of flood control and open space in watershed east of Lincoln. Project involved flood control study, flood mitigation, and risk assessment.

Lake Winnebago Dam Relocation • Cass County, Missouri • Renaissance Infrastructure Group • Current - Project Manager for the investigation and economic analysis for relocating the existing dam at Lake Winnebago downstream to increase the size of the lake. Includes the review of available existing information and a refined hydraulic analysis of a gated dam to develop the lowest cost alternative for the project.

Levees

Missouri River Federal Levee Systems R-613 and R-616-613 Levee Certification Design and Permitting • Sarpy County, Nebraska • Papio-Missouri River Natural Resources District • Current - Project Manager and Civil Engineer of record for the final design of \$20M in levee improvements required for FEMA accreditation. The 18.2 miles of earthen levee system protects billions in local infrastructure and commerce. Proposed levee modifications include levee raises, closure section reconstruction at two locations, drainage penetration and flood gate structure updates/reconstruction, and seepage berm and relief well placement. The project requires a Major 408 permit which is being coordinated with the U.S. Army Corps of Engineers NWO levee safety team.

Missouri River Federal Levee Systems R-613 and R-616-613 Investigative Phase and Alternative Analysis Phase • Sarpy County, Nebraska • Papio-Missouri River Natural Resources District • 2012 - Project Manager and Civil Engineer of record for the investigative and alternative analysis phases required for FEMA accreditation. The investigative phase included levee inspections and final inspection report in accordance with the U.S. Army Corps of Engineers Levee Safety Program, stakeholder coordination, benefit/costs analysis, review of existing hydrology and hydraulics, interior drainage analysis and a system analysis. The alternative analysis phase included coordination of geophysical resistivity analysis and geotechnical field investigations, development of levee setback location, sediment/scour analysis, update of Platte River and Papillion Creek hydraulics, modifications to Platte River hydrology, and 2011 flood inventory into GIS database.

Whitetail Lake Levee Certification • Platte County, Nebraska • Whitetail Lake HOA • 2009 - Design Engineer for the investigation and planning of levee improvements to meet FEMA accreditation needs for the ring levee along the Loup and Platte Rivers.

Rivers/Streams

Elkhorn River at 240th Street Bank Stabilization Design and Permitting, Long Term Solution • Sarpy County, Nebraska • Papio-Missouri River Natural Resources District • Current - Project Manager and Civil Engineer of record for the final design and permitting for bank stabilization of flood damages near 240th Street. The planned design will restore a historic channel of the Elkhorn River, providing backwater habitat for the Pallid Sturgeon, while diverting channel energy away from the 240th Street corridor and its related infrastructure. Currently developing the 404 individual permit application and submission package.

Elkhorn River IPA Bank Stabilization Construction Services • Douglas County, Nebraska • Papio-Missouri River Natural Resources District • 2012 - Project Manager and Civil Engineer of record for \$1.3M in construction of bank stabilization for 2010 Elkhorn River flood damages through the 5 mile stretch of the Improvement Project Area (IPA). Project challenges during construction included contractor access for working within the river corridor and permitting constraints.

Elkhorn River at Waterloo Bank Stabilization Review • Waterloo, Nebraska • Papio-Missouri River Natural Resources District • 2012 - Review Engineer for bank stabilization measures designed for the Elkhorn River near Waterloo, NE.

2011 Missouri River High Water Marks • Missouri River Valley • United States Corps of Engineers, Omaha District • 2012 - Quality Control Reviewer for post-2011 flood high water marks surveyed, set and recorded along Missouri River from mouth to headwaters.

Elkhorn River IPA Bank Stabilization Design and Permitting • Douglas County, Nebraska • Papio-Missouri River Natural Resources District • 2012 - Project Manager and Civil Engineer of record for the investigation, design and permitting for bank stabilization of 2010 Elkhorn River flood damages through the 5 mile stretch of the Improvement Project Area (IPA). This included developing construction plans and specifications for 13 locations identified as needing immediate attention during the investigation phase. A 404 nationwide permit was obtained for the majority of the work and a Regional General Permit 11-02 was obtained for one stabilization site.

Elkhorn River at 240th Street Bank Stabilization Design, Permitting and Construction - Short Term Solution • Sarpy County, Nebraska • Papio-Missouri River Natural Resources District • 2012 - Project Manager and Civil Engineer of record for the design and permitting of flood damaged bankline near 240th Street that needs immediate attention. A short-term solution was developed to qualify for a 404 nationwide permit that would provide interim protection while the long-term solution is designed and permitted. Construction plans and specifications were developed and the 404 nationwide permit was obtained, and construction oversight was provided during implementation.

Dead Man's Run Channel Improvements Project • Lower Platte South Natural Resources District • 1993 - Field Engineer for Lower Platte South NRD Dead Man's Run channel improvements. Channel armoring provided erosion protection for channel through developed Lincoln, Nebraska.

Lakes/Water Quality

Carter Lake Water Quality Improvements Construction Services • Carter Lake, Iowa and Omaha, Nebraska • Metropolitan Area Planning Agency • Current - Project Manager for \$3.5M construction project which implemented in-lake management practices focusing on nutrient

reduction of 320-acre Carter Lake. Includes shoreline stabilization, detention basin construction, hydraulic dredging and spoils disposal. In-water construction and complex water budget issues added to the project complexity. The project utilized six funding sources and required coordination and involvement with thirteen stakeholder agencies/organizations.

Carter Lake Water Quality Improvements Final Design and Permitting • Carter Lake, Iowa and Omaha, Nebraska • Metropolitan Area Planning Agency • 2012 - Project Manager and Civil Engineer of record that performed the design and permitting of best management practices to improve the water quality in Carter Lake. This included features such as shoreline stabilization, wetland creation, wet detention basins and dredging. Developed construction plans, specification and bid tabulations, and obtained the necessary 404 nationwide permit for the construction activities.

Carter Lake Watershed Management and Final Alternatives Analysis • Carter Lake, Iowa and Omaha, Nebraska • Metropolitan Area Planning Agency • 2009 - Project Manager for developing the watershed management plan to improve the water quality Carter Lake in order to remove it from the 303(d) list of impaired waters. Assessed the cost effectiveness and site specific feasibility of watershed and in-lake best management practices to reduce the pollutant loading to the lake. Determined the most cost effective combination of alternatives to reach the water quality goals and take into final design and construction.

Lake Manawa Diagnostic and Feasibility Study • Council Bluffs, Iowa • Iowa Department of Natural Resources • 2008 - Project Manager for development of diagnostic and feasibility study for Lake Manawa to improve water quality including a major dredging project and the implementation of watershed better management practices to improve water quality.

Cunningham Lake Aquatic Habitat Improvement Project Design, Permitting and Construction • Omaha, Nebraska • Nebraska Game and Parks Commission • 2006 - Project Manager for Nebraska Game and Parks Commission Cunningham Lake Aquatic Habitat Improvement Project. Project provided riser modification, habitat enhancement, in-lake shoreline erosion control, fishery enhancements and dredging to improve water quality.

Cunningham Lake Land Use Analysis Project • Omaha, Nebraska • City of Omaha • 2005 - Project Manager for City of Omaha Cunningham Lake Land Use Analysis Project. Project created overlay district to help guide the appropriate BMPs for watershed development to help protect water quality work recently performed in Cunningham Lake.

Stormwater

26th & Corby Neighborhood Combined Sewer Separation Study and Design • Omaha, Nebraska • City of Omaha • 2012 - Stormwater Design Engineer for the investigation, modeling and design of the partial separation of the combined sewers in the neighborhood.

Raven Oaks Storm Drainage Improvements • Omaha, Nebraska • City of Omaha • 2001 - Design Engineer for City of Omaha Raven Oaks Storm Drainage Improvements. The residential storm sewer improvement project addressed some localized drainage problems and a few safety issues related to overland flow of stormwater runoff.

Other

Carter Lake Well Design and Permitting • Omaha, Nebraska • City of Omaha • 2010 – Civil Engineer of record for the planning and design of the supplemental supply well and delivery system to Carter Lake.

Mapping and Data Management for Master Plan • Omaha, Nebraska • Papio-Missouri River Natural Resources District • 1998 - Provided mapping services and database management, Papio-Missouri River NRD 10-year Master Plan.

PRESENTATIONS

Sotak, Michael K. *Space Saving Fuse Plug Spillway in Lincoln, Nebraska.* In: Association of State Dam Safety Officials 2007 West Regional Technical Seminar; Omaha, Nebraska.

Sotak, Michael K. *Surprise! You Own a High Hazard Dam* In: Kansas Dam Safety Seminar 2007; Wichita, Kansas.

Sotak, Michael K. *Fuse Plug Auxiliary Spillway* In: Kansas Dam Safety Seminar 2007; Wichita, Kansas.

Sotak, Michael K. *Lake Manawa Geophysical Investigation* In: Kansas Dam Safety Seminar 2009; Lawrence, Kansas.

Sotak, Michael K. *A Unique Approach to Investigating Levees – A Toolbox Approach* In: American Society of Professional Floodplain Managers (ASFPM) National Conference, Oklahoma City, OK 2010

Sotak, Michael K. *Geophysical Investigations for Levee Systems – Killing Several Birds with One Stone* In: United States Society on Dams (USSD) National Conference, April, 2012

AWARDS

2006: American Consulting Engineers Council / Nebraska Grand Project Award – Campbell's Nursery Dam

WORK EXPERIENCE

FYRA Engineering • Omaha, Nebraska – July 2012 to Current
Principal Engineer / Owner

Tetra Tech • Omaha, Nebraska – January 2008 to June 2012
Program Manager / Office Lead

Olsson Associates • Omaha, Nebraska – July 2001 to December 2007
Project Engineer / Water Resources Group Leader

Olsson Associates • Phoenix, Arizona – July 2000 to July 2001
Project Engineer / Office Manager

Olsson Associates • Omaha, Nebraska – July 1997 to July 2000
Office Manager / Water Resources Group Leader

Olsson Associates • Lincoln, Nebraska – September 1990 to July 1997
Assistant Engineer

**Paul A. Brakhage
LakeTech, Inc.**

**6633 West Roca Road
Martell, NE 68404**

**(402) 730-3658
laketechconsulting@gmail.com**

Education

B.S. Natural Resources, Chemistry Minor, University of Nebraska-Lincoln

Employment History

1982 -1988: Field Unit Coordinator, EA Engineering Science & Technology Inc. – Lincoln, NE
1988 - 1992: Field Data Specialist: NE Department of Environmental Quality – Lincoln, NE
1992 - 2005: Program Specialist, NE Department of Environmental Quality – Lincoln, NE
2005 - 2011: Environmental Assistance Coordinator, NDEQ – Lincoln, NE
2011 - Current: Owner, LakeTech, Inc. Consulting – Martell, NE

Primary Areas of Experience

Program Planning & Oversight: Responsible for coordinating Nebraska’s Nonpoint Source Management Program, Stormwater Program, and Clean Lakes Program. Coordination duties included statewide targeting of grants, grants administration, federal reporting, and overall program budgeting. Responsible for the administration of Section 106 Supplemental funding from the U.S. EPA. Developed statewide lake and reservoir monitoring strategies and Quality Assurance Project Plans to evaluate trends and project related changes in water quality. Reviewed grant applications, requests for proposals, and contracts for monitoring and implementation projects. Developed project evaluation and ranking protocol for Nonpoint Source projects. Assisted state and local units of government in developing policy, ordinances, and guidelines pertaining to water quality. Prepared guidance and information documents related to grant fund disbursements, project budget tracking, water quality assessments, education, and project reporting. Developed the framework for the Community Lake Enhancement And Restoration (CLEAR) Program including long term funding packages, project eligibility requirements, and program operating guidance.

Project Development & Coordination: Provided leadership role in the development of watershed protection and lake renovation projects statewide. Projects typically encompassed local, state, and federal funding sources and partners. Have worked on specific water quality issues with 18 Natural Resource Districts, more than 40 communities, and resource agencies such as the NE Dept. of Natural Resources, NE Game and Parks Commission, NE & U.S. Dept. of Agriculture, U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and U.S. Army Corp of Engineers.

Public Involvement: Assisted with the development of a Community Based Planning process for water quality projects. Provided a leadership role for public involvement on specific water quality projects across the state. Worked with watershed stakeholders including resource user groups (e.g., power boaters, bird enthusiasts, fishing clubs), business owners, and agricultural producers.

Water Quality & Technical Assessment: Have been responsible for water quality assessments pertaining to Clean Water Act Section 305(b) reporting, Clean Water Act Section 303(d) listings/de-listings, Section 319 Project Assessments, and various state agency reports. Developed statewide water quality assessment criteria and data assessment methodologies for lakes and reservoirs in Nebraska pertaining to Section 303(d) listings and project evaluations. Served as a technical reviewer for the Nebraska Environmental Trust.

LakeTech, Inc.: Completed & Ongoing Contracts

Lower Platte North NR D - Wahoo Creek Watershed Management Plan (Completed)

Wahoo Creek is located in eastern Nebraska and comprises a drainage area of more than 300,000 acres. Wahoo Creek is listed as impaired for Primary Contact Recreation on Nebraska's Section 303(d) List due to *E.coli* bacteria. The Lower Platte North Natural Resources District was the sponsor of this federally funded planning project which was focused on the development of a Watershed Management Plan. LakeTech, Inc. served as a subcontractor to JEO Consulting, Inc. to provide watershed planning services pertaining to project approach, pollutant load estimations, load reduction targets, best management practice selection, and management plan layout and format.

City of Lincoln - Antelope Creek Watershed Management Plan (Completed)

Antelope Creek is the primary drainage for the City of Lincoln, NE. The City of Lincoln and Lower Platte South Natural Resources District sponsored this stormwater water quality planning project which encompassed more than 4,932 acres of urban drainage. A Watershed Management Plan was developed to address *E.coli* bacteria impairments on Antelope Creek. LakeTech, Inc. served as a subcontractor to EA Engineering, Science, and Technology, Inc. to provide technical review and input on the plan which included pollutant source identification and load quantification, urban treatment strategies, evaluation measures, and implementation schedules.

City of Gothenburg, NE – Lake Helen Water Quality Planning (Completed)

Lake Helen is a 30 acre urban lake that is on Nebraska's Section 303(d) list for dissolved oxygen and nutrients. LakeTech, Inc. provided project management, oversight, and planning services for the City of Gothenburg. Major contracted tasks included partnership building, project budget development and tracking, grant reporting and administration, identification and evaluation of treatment alternatives, water quality modeling, development of a Water Quality Management Plan, and the preparation of state and federal funding applications and project work plans.

City of Gothenburg, NE – Lake Helen Implementation (Ongoing)

In 2013 the City of Gothenburg was able to generate approximately \$1.4 M from local, state, and federal sources to implement the Water Quality Management Plan for Lake Helen. The city retained LakeTech, Inc. to provide professional management and oversight for the project. Specific responsibilities include; the preparation of a Project Implementation Plan for NDEQ and U.S. EPA, budget/progress tracking and reporting to project stakeholders, assistance with media and educational efforts, and the preparation of a final report upon the completion of the project. Project partners include the Nebraska Game and Parks Commission, Nebraska Department of Environmental Quality, Central Platte Natural Resources District, and Miller Consulting.

Lower Big Blue Natural Resources District – Watershed Management Plan (Completed)

In 2013, LakeTech, Inc. was hired by the LBBNRD to prepare a Nonpoint Source Management Plan for the Lower Big Blue River Basin which encompasses more than one million acres. The intent of this district wide planning effort was to; 1) identify water resources in the district, 2) identify and quantify surface and groundwater water quality concerns, 3) identify pollutant sources, 4) quantify necessary pollutant reductions, and 5) develop an implementation and funding strategy that targets local, state, and federal programs.

LakeTech, Inc.: Completed & Ongoing Contracts, (Continued)

Iowa Department of Natural Resources - Easter Lake Management Plan (Completed)

Easter Lake is a publicly owned man-made reservoir located within the city limits of Des Moines, Iowa. Easter Lake suffers from several water quality problems including poor water clarity, summer algal blooms, high sedimentation rates, and low dissolved oxygen. In 2012 the EA Engineering Science and Technology, Inc. and LakeTech Inc. team was awarded a planning project on Easter Lake by the Iowa Department of Natural Resources. This project entailed the development of a Watershed Management Plan that included an assessment of in-lake alternatives. Specific duties of LakeTech Inc. in this project included; professional oversight in the overall development of the plan, evaluation of in-lake data and the estimation of internal pollutant loads, and provide technical expertise in agency and public meetings. The plan was approved by the State of Iowa and U.S. Environmental Protection Agency in 2012.

University of Nebraska-Lincoln – Water Quality Assessment (Completed)

In 2012 LakeTech, Inc. provided consulting services to UNL for reservoir sediment nutrient studies funded by NDEQ. LakeTech, Inc. coordinated the collection and analysis of bottom sediment core samples from Wagon Train Reservoir which were evaluated for phosphorus content. LakeTech, Inc. was responsible for the assessment of sediment data to determine spatial sediment phosphorus variability. LakeTech, Inc. also provided an assessment of water column data and sediment data to estimate internal phosphorus load to Wagon Train Reservoir.

Education

- ▶ Bachelor of Science, Civil Engineering; University Nebraska-Lincoln, 1974
- ▶ Graduate work; Utah State University, 1976

Professional Registrations

- ▶ Professional Engineer: KS, # 8303
- ▶ Professional Engineer: NE, # E-4967

Affiliations

- ▶ American Water Works Association
- ▶ National Society of Professional Engineers

Olsson Professional Experience

- ▶ 1984 To Present

Total Professional Experience

- ▶ 1976 To Present



Kevin Prior, PE

Irrigation and Conjunctive Management

Experience Summary

Kevin's responsibilities include managing numerous water and municipal projects, such as feasibility studies, project design, and construction engineering. He possesses extensive expertise in grant writing and financing municipal projects. Kevin has experience in designing and constructing several wastewater projects, including sewer mainline, sewage lift stations, grinder pumps, force main, and facultative lagoons. His water project experience includes: distribution mains, municipal wells, and elevated storage reservoirs. His experience in municipal street design includes storm sewers, inlets, and detention facilities for stormwater runoff.

Watershed Planning/Studies/Improvements

- Central Platte NRD, Design Engineer for Prairie Creek Watershed Feasibility Study - Central Nebraska
- Lower Platte North NRD, Design Engineer for Skull Creek Watershed Feasibility Study - East Central Nebraska
- Central Platte NRD, Design Engineer for Silver Creek Channel Improvement Study - Central Nebraska
- Central Platte NRD/Cozad Ditch Company, Project Manager for Study to Rehabilitate the Cozad Irrigation Canal - Cozad, Nebraska
- Central Platte NRD/South Side Ditch Company, Project Manager for Study to Rehabilitate the Orchard/Alfalfa Canal - Central Nebraska
- Central Platte NRD, Project Manager for Watershed Planning on Elm Creek and Turkey Creek Watersheds - Dawson County, Nebraska
- Central Platte NRD/Platte River Implementation Program, Project Manager for Multi-purpose Reservoir on Elm Creek - Dawson County, Nebraska
- Frenchman/Cambridge Irrigation District, Project Manager/Design Engineer for Planning an Irrigation Pump Station - Nebraska
- Lower Big Blue NRD, Project Manager for Design and Construction of Four Detention Dams in the Turkey Creek Watershed - Saline and Fillmore Counties, Nebraska
- Lower Loup NRD, Project Manager/Design Engineer for Recreation Improvements at Davis Creek Reservoir - Sherman County, Nebraska

Irrigation Systems Evaluation

- Middle Loup Irrigation District, Project Manager/Project Engineer for Evaluation, Design, and Construction of Irrigation Diversion on Middle Loup River - Sargent Nebraska
- North Loup Irrigation District, Project Manager/Project Engineer for the Planning, Design, and Construction of Two Irrigation Diversions on the North Loup River - Taylor and Ord, Nebraska
- Central Platte Natural Resources District (NRD)/Cozad Ditch Company, Project Manager/Project Engineer for Evaluation of Irrigation System for Cozad Channel Rehabilitation - Cozad, Nebraska
- Central Platte NRD/South Ditch Company, Project Manager/Project Engineer for Evaluation of Irrigation System for Orchard Alfalfa Canal Rehabilitation - Orchard, Nebraska
- Farwell and Sargent Irrigation Districts, Project Engineer for Irrigation Lateral Improvements - Howard and Sherman Counties, Nebraska
- Project Manager/Design Engineer for Rehabilitation of the Cozad Irrigation Canal, Including New Canal Structures, Ditch Re-shaping, Clearing, and Canal Controls - Dawson County, Nebraska
- Project Manager/Design Engineer for Rehabilitation of the Orchard Alfalfa Irrigation Canal, Including New Canal Structures, Ditch Re-shaping, Clearing, and Canal Controls - Dawson County, Nebraska



Kevin Prior, PE
OLSSON ASSOCIATES

Experience, Continued

Stormwater/Drainage/Watershed Studies and Improvements

- Central Platte NRD, Project Engineer for Recharge Demonstration Included Construction of 48,000 Linear Feet of 12-Inch and 8-inch Main Line Pipe and Two Ground Water Recharge Basins - Central Nebraska
- City of Grand Island, Project Manager for Stormwater Management on Platte Valley Industrial Park Along U.S. Highway 281 - Grand Island, Nebraska
- Design Engineer for Various Flood Water Retarding Dams Under PL 566 Watershed Program - Multiple Sites in Eastern Kansas
- City of Grand Island Parks Department, Project Manager for Storm Drainage Analysis for Urban Runoff into Detention Ponds (Sucks Lake) - Grand Island, Nebraska
- Expert Witness for Drainage and Flood Damage Lawsuits

Education

- ▶ Bachelor of Science, Civil Engineering; Colorado School of Mines, 1988
- ▶ Graduate Studies; University of Tulsa, 1989
- ▶ Master of Science, Environmental Engineering; University of Nebraska-Lincoln, 1993

Professional Registrations

- ▶ Professional Engineer: NE, # E-7480

Affiliations

- ▶ American Water Works Association
- ▶ Society of American Military Engineers
- ▶ American Council of Engineering Companies
- ▶ Design Build Institute of America

Certifications and Specialized Training

- ▶ Certified Water Operator: Grade II

Olsson Professional Experience

- ▶ 1989 To Present

Total Professional Experience

- ▶ 1989 To Present



John Olsson, PE

Client Liason

Experience Summary

John will serve as client liason on the water funding task force project. His role as Lincoln office leader makes him responsible for office level and firmwide strategy, fostering local client relationships, and assisting in building highly productive, efficient, and collaborative technical teams. In addition, John leads the effort on pursuing multi-discipline, multi-office projects in and around the Lincoln area.

Prior to his office leader position, John was the team leader for the Lincoln water/wastewater team. He has 20 years of engineering experience and, in addition to water and wastewater projects, has completed recreational, municipal, residential, and commercial projects involving both private and public entities.

Water Treatment Plants and Pumping Stations

- City of Lincoln, Project Manager for Lincoln Water System 12 MGD Pioneers Pumping Station and 18,000 L.F. of 30-Inch Water Mains - Lincoln, Nebraska
- City of Seward, Project Engineer for the \$4.5 Million 4.0 MGD Brackish Water Reverse Osmosis Water Treatment Facilities and Wellfield Improvements Engineering Report and Final Design - Seward, Nebraska
- City of Sioux City, Engineer of Record for \$8 Million in Water Treatment Plant Improvements - Sioux City, Iowa

Water Supply/Transmission/Distribution/Storage

- City of Lincoln, Project manager for Cheney Booster Elevated Tank - Lincoln, Nebraska
- City of Douglas, Project Engineer for Design and Construction Services for Water Supply, Distribution, and Storage Improvements - Douglas, Nebraska
- City of Lincoln, Project Engineer for Raw Water Transmission Main Design and Drafting - Lincoln, Nebraska
- City of Seward, Project Engineer for Water Main Extension Design and Drafting - Seward, Nebraska
- City of Sioux City, Project Engineer for Riverbank Filtration Study - Sioux City, Iowa

Well Field Studies/Design/Permitting

- City of Lincoln, Project Administration and Construction Services for Lincoln Water system Horizontal Collector Wells - Ashland, Nebraska
- City of Seward, Design Engineer/Construction Services for Well Field Expansion - Seward, Nebraska
- City of Lincoln, Construction Observation for Monitoring Wells - Lincoln, Nebraska

Water and Sewer System Design/Replacement/Rehab

- Fairmont Ethanol Plant, Project Engineer for New 5 Mile, 8- and 10-Inch Process Water Discharge Sewer Design - Nebraska

Interceptor/Trunk Sewers

- City of Lincoln, Project manager for Southeast Upper Salt Creek Trunk Sewer 48-Inch Diameter Sewer Extension Through Wilderness Park - Lincoln, Nebraska
- City of Lincoln, Stakeholder Coordination for Salt Valley Trunk Sewer Phase IV - Lincoln, Nebraska.
- City of Lincoln, Stakeholder Coordination for Beal Slough Relief Sewer Phase I - Lincoln, Nebraska.
- City of Lincoln Project Manager for Salt Valley Relief Trunk Sewer Phase IIb and IIIa Included 78-Inch Diameter Trunk Sewer Through Historic Lincoln District - Lincoln, Nebraska



Education

Bachelor of Landscape
Architecture | University of
Illinois at Urbana-Champaign
| 1975

Registration

RLA NE 139
RLA IA 00258
RLA KS 641

Experience

1 Years with Vireo
30 Years Prior

Dave Ciaccio Owner/Principal

Dave has extensive experience in the planning and design of public space facilities, downtown streetscapes, and urban centers. Dave has planned park systems, parks and open spaces at the national, county, and municipal levels. He has assisted communities in visioning projects and directing large scale community planning activities. He also has extensive experience in the master planning of institutional facilities. With his understanding of community, as well as individual needs, Dave is able to communicate designs on a personal level, thereby building consensus and resulting in a project's implementation. Dave serves the client throughout this process from planning, programming, and design, to project management and completion.

Independence Park System MP | Independence, Missouri
Client: City of Independence, MO

Council Bluff's Park Master Plan | Council Bluffs, Iowa
Client: City of Council Bluffs, Iowa

Norfolk Park and Trails System Master Plan | Norfolk, Nebraska
Client: City of Norfolk, Nebraska

Omaha Suburban Parks Master Plan | Omaha, Nebraska
Client: City of Omaha, Nebraska

Sarpy County Park System Master Plan | Sarpy County, Nebraska
Client: Sarpy County, Nebraska

Papio Regional Recreation Areas | Sarpy & Douglas Counties, Nebraska
Client: Papio-Missouri River NRD

Elkhorn Park System Master Plan | Elkhorn, Nebraska
Client: City of Elkhorn, Nebraska

Fontenelle Park Renovation | Omaha, Nebraska
Client: City of Omaha, Nebraska

Harney Street Bikeway | Omaha, Nebraska
Client: City of Omaha, Nebraska

Grand Portage National Monument Heritage Center | Grand Marais, Minnesota
Client: National Park Service

Riverside Day Use Area-St. Croix National Scenic River | St. Croix, Wisconsin
Client: National Park Service

St. Croix National Scenic Riverway Access | Hinkley, Minnesota
Client: National Park Service

Tallgrass Prairie National Preserve | Chase County, Kansas
Client: National Park Service

Education

- ▶ Master of Public Administration; University of Kansas, 2000
- ▶ Bachelor of Journalism, Journalism in News Editorial; University of Nebraska-Lincoln, 1998

Affiliations

- ▶ Society for Marketing Professional Services (SMPS)
- ▶ International Association for Public Participation (IAP2)
- ▶ International Association of Business Communicators (IABC)
- ▶ Public Relations Society of America (PRSA)

Certifications and Specialized Training

- ▶ Completed IAP2's "Planning, Communications, and Techniques for Effective Public Participation" Courses, 2009

Olsson Professional Experience

- ▶ 2011 To Present

Total Professional Experience

- ▶ 2004 To Present



Sarah Ferdico

Facilitation Logistical Coordinator

Experience Summary

Sarah has been involved with public involvement and public relations activities for various public and private improvement projects for nine years. She has experience managing public participation programs and collaborating with affected parties to achieve public support. Sarah is also skilled in using various communication methods to effectively distribute information and her experience includes researching, promoting, and managing several marketing projects and events that have involved numerous, diverse players.

Public Involvement

- Papio-Missouri River Natural Resources District, Integrated Water Management Plan Development - Nebraska
- City of Lincoln, N. 14th and Superior to Alvo Road - Lincoln, Nebraska
- City of Omaha, NE 114th Street from Burke to Pacific Streets - Omaha, Nebraska
- City of Lincoln, Old Cheney Widening from 70th to 84th Streets - Lincoln, Nebraska
- City of Lincoln, Boosalis Shooting Range - Lincoln, Nebraska
- City of Fargo, NP and 1st Avenue North Corridor Study - Fargo, North Dakota

Marketing Communications

- Manage project proposals from kick-off to production, consistently coordinating text and graphics and ensuring proposals are delivered on time and of the highest quality.
- Manage assembly of proposals' non-technical components (e.g. company information, resumes, project descriptions, cover letters, team biographies, etc.) and provide QA/QC for relevancy and accuracy.
- Manage agency's marketing materials for relevant, current content and audience suitability.
- Participate in project "go/no-go" processes to assist in assessing project win viability.
- Assist in interview and presentation preparation.
- Track and direct project opportunities; follow up with technical staff.

Public Relations

- Wrote and edited articles and news releases for publications featuring clients' unique services and activities.
- Established relationships with national media in order to develop article opportunities.
- Managed agency's Web site and updated its contents.
- Wrote and placed news releases announcing company' initiatives and publicizing clients' products, services and activities.
- Wrote and edited materials for agency's newsletters.
- Served as media liaison for publications requesting industry insight and client interviews.



Triveece Harvey

Facilitation Logistical Coordinator

Education

Master of Urban Planning |
University of Kansas | 2002
Bachelor of Architectural
Studies | University of Kansas
| 2000

Registration

AICP

Experience

8 Years with Vireo
3 Years Prior

Triveece Harvey is a community planner, public involvement specialist, and innovator with experience working with community organizations and government agencies at the state, county, and local levels. She manages projects that require intensive public engagement, education, information sharing, and messaging. Through Vireo Triveece managed the Maximizing the Flow Ramp Metering Campaign for Kansas City Scout. The effort won the 2010 National Exceptional Performance Award – Journalism from the American Public Works Association.

Triveece is highly skilled at developing and executing the planning processes by which groups of stakeholders are strategically brought together to discuss the land use and/or transportation opportunities ahead of them through corridor, area, and comprehensive planning efforts. She uses context sensitive solutions to plan with, reach out to, and gather input from communities. She believes that community engagement should be purposeful and meaningful to both the participants and the project team. She builds the feedback gathered during the planning process into the deliverables that are produced for each project, demonstrating to stakeholders that their voices are being heard.

Wichita Visioneering - Environmental Sustainability Alliance | Wichita, Kansas
Client: City of Wichita

Springfield Stormwater Utility Feasibility Study | Springfield, Ohio
Client: City of Springfield, Ohio

KDOT Statewide Rail Plan | State of Kansas, Kansas
Client: Kansas Department of Transportation

EnergyWorks KC | Kansas City, Missouri
Client: Mid-America Regional Council

Wichita Transit Talks | Wichita, Kansas
Client: City of Wichita

Downtown Streetcar Alternatives Analysis | Kansas City, Missouri
Client: Mid-America Regional Council

I-435/Front Street Diverging Diamond Interchange | Kansas City, Missouri
Client: Missouri Department of Transportation

U.S. 400 Corridor Study | Cherokee County, Kansas
Client: Kansas Department of Transportation

U.S. 166 Expansion | Cherokee County, Kansas
Client: Kansas Department of Transportation

KCI Airport Master Plan/Area Plan/Noise Studies | Kansas City, Missouri
Client: City of Kansas City, Missouri

K-68 Corridor Management Plan | Ottawa, Paola, and Louisburg, Kansas
Client: Kansas Department of Transportation

Education

- ▶ Bachelor of Science, Civil Engineering; University Nebraska-Lincoln, 1995
- ▶ Master of Business Administration; University Nebraska-Lincoln, 2002

Professional Registrations

- ▶ Professional Engineer: NE, # E-9741
- ▶ Professional Engineer: CO, # 37531
- ▶ Professional Engineer: IA, # 16569
- ▶ Professional Engineer: IN, # PE10607192
- ▶ Professional Engineer: KS, # 17098
- ▶ Professional Engineer: MO, # 2003027620
- ▶ Professional Engineer: SD, # 8386
- ▶ Professional Engineer: TX, # 100878
- ▶ Professional Engineer: WY, # 10760

Affiliations

- ▶ American Concrete Pavement Association
- ▶ American Society of Civil Engineers
- ▶ Association of State Dam Safety Officials
- ▶ Leadership Lincoln
- ▶ National Council of Examiners for Engineering & Surveying
- ▶ Nebraska Concrete and Aggregate Association

Certifications and Specialized Training

- ▶ Nuclear Gauge Testing

Olsson Professional Experience

- ▶ 1995 To Present

Total Professional Experience

- ▶ 1995 To Present



Ryan Beckman, PE

Geotechnical Engineering

Experience Summary

Ryan is the Field Services practice group leader responsible for managing the day-to-day operations of Olsson's Geotechnical department, as well as the Construction Services, Survey, and Special Inspection teams. Ryan has helped perform geotechnical subsurface explorations for all design teams within Olsson, including water resources, land planning, municipal, transportation, electrical, and mechanical. In addition, Ryan provides geotechnical engineering services to many Natural Resource District (NRD) dam sites. He has performed engineering evaluations of the bearing capacity for shallow foundations and the load capacity of deep pile foundations, estimated settlements, performed seepage calculations, and analyzed slope stability. Ryan has also provided engineering assistance in designing numerous dam projects and followed up as project engineer during their construction. He has experience performing various soil and construction materials field and laboratory tests.

Geotechnical Site Explorations

- Papio-Missouri and Lower Platte South Natural Resources Districts (NRD), Project Manager for Construction Operations for Evaluation and Rehabilitation of Abandoned Chicago, Rock Island, and Pacific Bridges over the Platte River - Near South Bend, Nebraska
- Nebraska Irrigation Districts, Project Engineer for Geotechnical Evaluation of Irrigation Canal Repairs, Related to Seepage and Channel Liners - Central Nebraska
- Lower Platte South NRD, Project Engineer for Geotechnical Investigation of 10 Flood and Sediment Control Structures in the Stevens Creek Watershed - Near Lincoln, Nebraska
- Lower Bib Blue NRD, Project Engineer for Geotechnical Investigations for Slope Stability, Seepage, and Settlement Analysis Required for Turkey Creek Dam Sites - Southeastern Nebraska
- Nemaha NRD, Project Engineer for Geotechnical Investigations Required for Dam Sites 25, 31, 42, 50, 61, and 63 for the Upper Little Nemaha Watershed Flood Control - Cass, Lancaster, and Otoe Counties, Nebraska
- Lower Elkhorn NRD, Project Manager for Construction of Flood Control Structures and Associated Recreational Facilities for the Leigh Dam - Near Columbus, Nebraska
- Lower Platte North NRD, Project Engineer for Geotechnical Investigation Involving Global Stability Analysis, Seepage Evaluation, and Settlement for Lake Wanahoo, Including Design for Foundation Support of Roller Compacted Concrete (RCC), Twin Box Culverts, a Flip Bucket Outlet Structure, and a Weir Principal Spillway - Wahoo, Nebraska
- Lower Platte North NRD, Project Engineer for Geotechnical Investigations Required for Skull Creek Sites 30, 31, and 55 - Near Bruno, Nebraska
- Papio-Missouri River NRD, Project Engineer for Design and Global Stability, Settlement, and Seepage Analysis for Pigeon/Jones Creek Flood Control Structure - Hubbard, Nebraska
- Central Platte NRD, Project Engineer for Potential Elm Creek Flood Control Structure Geotechnical Investigation for Subsurface Evaluation - Near Elm Creek, Nebraska
- Nebraska Department of Natural Resources, Project Engineer for Dam Safety Investigations for 12 Existing Flood Control Structures - Near Sidney, Scottsbluff, and Bridgeport, Nebraska



Ryan Beckman, PE

OLSSON ASSOCIATES

Experience, Continued

- Platte River Recovery Implementation Program, Project Engineer for J-2 Structure Geotechnical Investigation, Including Evaluation of Site Soil Conditions Related to Seepage Rates, Global Stability of Embankments, and Pulse Flow Discharge - Near Overton, Nebraska
- City of Lincoln, Project Engineer for 3rd and "A" Street Overpass Deep Foundation Evaluation Using H-pile System and Settlement Analysis - Lincoln, Nebraska

Education

- ▶ Master of Science, Water Resources Engineering; University Nebraska-Lincoln, 1981
- ▶ Bachelor of Science, Civil Engineering; University Nebraska-Lincoln, 1979

Professional Registrations

- ▶ Professional Engineer: LA, # 33089
- ▶ Professional Engineer: NE, # E-6366
- ▶ Professional Hydrologist, AIH, #1141

Affiliations

- ▶ Diplomate, American Academy of Water Resources Engineers
- ▶ American Institute of Hydrology
- ▶ American Society of Civil Engineers; Past President, Nebraska Section
- ▶ American Water Resources Association
- ▶ Society of American Military Engineers
- ▶ American Railway Engineering and Maintenance-of-Way Association
- ▶ Engineers' Club of Lincoln, NE

Olsson Professional Experience

- ▶ 1997 To Present

Total Professional Experience

- ▶ 1981 To Present



Daryoush Razavian, PE, PH, D.WRE

Hydrology/Compact Compliance

Experience Summary

Daryoush is a senior project manager and hydrologic engineer for multi-disciplinary projects involving planning, analysis, and design of water resources systems (quantity and quality). He is the only registered professional hydrologist in Nebraska. His expertise is in investigations related to planning and design of water development projects, conjunctive use management, integrated management of groundwater and surface water, bridge/culvert hydraulics, floodplain management and flood control, watershed management planning, rural and urban hydrology, stream and reservoir restoration, wetland hydrology, engineering economy, erosion and sedimentation engineering, agricultural nonpoint source pollution control, and applications of hydrologic and hydraulic computer simulation models. He has directed, managed, and conducted more than 2,000 projects involving water resources and hydrologic engineering and management.

Daryoush has extensive experience in utilizing water quantity and quality computer simulation models. He thoroughly understands the capabilities and limitations of hydrologic and hydraulic computer models such as AGNPS, ANSWERS, ENDOW, EUTROMOD, FER, HECFFA, HEC-RAS, HEC-1, HEC-2, HECWRC, HSP-F, HY-8, TR-20, and TR-55.

Integrated Management of Groundwater and Surface Water

- Directed development of an integrated surface water and groundwater model of a large river basin with a complex system of surface water and groundwater irrigation system as part of a U.S. Supreme Court litigation over an interstate water rights case. As part of this multi-year project, directed technical investigations and evaluations of numerous issues related to conjunctive use management, crop water use, irrigation and water use efficiency, groundwater return flows, irrigation well pumping effects on streamflow, regulating reservoirs, etc. Additionally, assisted the legal team framing its case based on technical findings and merits.
- Participated as an engineer in a multi-disciplinary, multi-objective decision making investigation optimizing available water resources of the Platte River for irrigation, hydro power production, municipal water supply, flood control, recreation, and environmental purposes. As part of the project, various water resources development opportunities were identified and designed (at a reconnaissance-level), along with opinion of probable cost were developed, and various projects were ranked based on a multi-objective criteria.
- Served as a technical resource for UNL's Conservation and Survey Division related to hydrologic (both surface water and groundwater) engineering and modeling matters, assisting state agencies/entities and the public.

Hydrology/Hydraulics, Feasibility Studies, and Basin Master Planning

- Directed, managed, and conducted hydrologic and hydraulic evaluations for more than 2,000 bridges and culverts for Union Pacific and BNSF Railroads. Investigations included computing design discharges, hydraulic modeling and analysis, recommending replacement structures, regulatory permitting applications, and report writing.
- Provided technical assistance on hydrologic design of several multipurpose dams/reservoirs.
- Evaluated hydrologic, sediment, and nutrient budgets for several reservoirs in the Midwest.
- Designed erosion and sediment control and energy dissipation structures.

Daryoush Razavian, PE, PH, D.WRE
OLSSON ASSOCIATES

Experience, Continued

- Developed several community-based watershed management plans for reduction of non-point source pollution and protection of reservoirs from excessive pollutant loads.
- Investigations included identification of critical erosion areas, analysis of point and nonpoint sources of pollution, and evaluation of structural and nonstructural Best Management Practices to control runoff, erosion, and pollutants associated with agricultural chemicals.
- Managed and conducted investigations on hydrologic response (runoff, sediment yield, etc.) of agricultural watersheds to rainfall events of differing frequency and duration under various watershed hydrologic, land use, and management conditions.
- Designed and evaluated agricultural conveyance structures at the pre-feasibility level.
- Prepared erosion and sediment control plan for several small- to medium-sized agricultural watersheds.
- Participated in water resources feasibility studies.
- Developed part of a water use and economic simulation model to screen inferior project alternatives and to provide data for a multi-objective optimization model.

Watershed Planning/Studies/Improvement

- Developed several watershed management plans for the purposes of improving stream water quality and enhancing watershed natural resources.

Flood Control/Reduction

- Developed several comprehensive flood mitigation plans with significant public input for municipalities in Nebraska.
- Managed and conducted floodplain management and flood control studies and conducted economic feasibility of flood control measures.

Lake/Stream Restoration

- Managed and conducted investigations related to restoration and protection of several publicly owned reservoirs (EPA's Clean Lakes Program).

Habitat Surveys and Restoration

- Directed and managed engineering design projects for restoration and protection of sensitive habitats such as lakes, wetlands, and streams. Project included development of conceptual design, preparation of final plans and specifications, permitting and regulatory interface, and construction-related services for a number of streams, wetlands, and reservoirs in Nebraska and South Dakota.

Dam/Reservoir Studies and Design

- Performed engineering planning, design, analysis, and cost estimation of several multi-purpose water development projects consisting of dams, spillways, reservoirs, canals, laterals, and pumping plants at the pre-feasibility level.

Presentations and Publications

- Authored or co-authored more than 500 project completion reports from 1988 to present.
- Farnsworth, J., D. Razavian, T. Mountford, and G. Michl, 2003. Watershed Management Planning Using an Integrated AGNPS-GIS Platform. Paper presented at the 2003 AWRA Spring Specialty Conference. Kansas City, Missouri, May 12-14.
- Mead, J., D. Razavian, T. Moser, P. Brakhage, and S. Satra, 2003. Powder Creek Reservoir; An Integrated Watershed-Reservoir Planning Approach. Paper presented at the 2003 AWRA Spring Specialty Conference. Kansas City, Missouri, May 12-14.
- Yost, J.J., D. Razavian, and P. Rohrbaugh, 1998. Design of Kirkman's Cove Lake Protection Measures. Presented to the 1998 Wetland Engineering and River Restoration Conference. ASCE Conference, Denver, Colorado, March 22-27.



Daryoush Razavian, PE, PH, D.WRE
OLSSON ASSOCIATES

Experience, Continued

- Razavian, D. And T.A. Brown. 1994. Getting The Most Out of AGNPS. Invited Paper, presented to the 46th Annual Training Conference of Missouri Soil and Water Conservation Districts. Osage Beach, Missouri, November 28-30.
- Razavian, D. 1990. Hydrologic responses of an agricultural watershed to various hydrologic and management conditions. AWRA Water Resources Bulletin 26(5): 777-785.
- Razavian, D. A. S. Bleed, R. J. Supalla, and N. R. Gollehon. 1990. Multistage screening process for river basin planning. ASCE J. Water Res. Plan. Mgt. 116(3): 323-334.
- Razavian, D. and T.A. Brown. 1992. The AGNPS Model: Sand and Duck Creeks Case Study. Presented to U.S. Environmental Protection Agency, Region VII, Kansas City, Kansas. 23 April.
- Bleed, A. S., N. R. Gollehon, D. Razavian, and R.J. Supalla. 1986. Economic, Environmental and Financing Optimization Analysis of Platte River Development Alternatives, Completion Report. Nebraska Water Resources Center, Lincoln, Nebraska.
- Razavian, D. 1988. Effects of hydrologic and management conditions on runoff and sediment yield. Paper presented at the 24th Annual Conference of AWRA, Water for the Years Ahead - Quality and Quantity: 1990 and Beyond, Milwaukee, Wisconsin, 6-11 November.

Miscellaneous

- Provided technical expertise and testimony in support of litigation cases involving surface water and ground water modeling; erosion and sedimentation engineering; hydrologic processes in agricultural lands (evapotranspiration, runoff, deep percolation, recharge, etc); irrigation system efficiencies, water use, and supplemental irrigation, hydrology, and hydraulics; CADD/GIS and database management systems; and water resources engineering and management.
- Provided technical assistance and service to local, state, and federal agencies in water resources engineering projects.

John, C. Holz, Ph.D.

Associate Limnologist



Dr. Holz has over 18 years of experience in surface water quality/aquatic habitat management and research. While earning his Ph.D. from the University of Nebraska-Lincoln (UNL), Dr. Holz's research advanced our understanding of water resource issues and developed improved management tools for lakes, streams and watersheds, including assessing/interpreting/predicting the response of water bodies to pollutants and the effectiveness of restoration techniques. Dr. Holz conducted research that advanced our ability to address numerous unique water quality challenges and pollutant effects. Specific areas of expertise include lake restoration and management, watershed management, biological indicators of water quality, phytoplankton ecology and management, nutrient inactivation, determination of appropriate water quality goals, nutrient criteria development, water quality monitoring, water quality modeling, internal phosphorus loading, and determining effectiveness of TMDL's using water quality and biological information. Dr. Holz was honored for these advancements by the North American Lake Management Society in 1999 when he received their Technical Excellence Award in recognition for Outstanding Research in Lake Restoration, Protection and Management.

As a faculty member at UNL, Dr. Holz obtained \$7.95 million in funding to support water quality research, authored over 20 publications, taught courses in Limnology (the study of lakes and streams) and Lake and Reservoir Restoration, and served as a technical advisor to the U.S. Environmental Protection Agency (EPA) on water quality management issues in the Midwest. Dr. Holz is a recognized leader in water quality/aquatic habitat management.

PROJECT EXPERIENCE

Lakes/Water Quality

Papio-Missouri River NRD Elkhorn River Bank Stabilization at 240th Street Final Design • Sarpy County • Nebraska - Senior Environmental Scientist responsible for the planning, design and permitting of aquatic habitat improvements for the endangered pallid sturgeon and other native species of fish. The use of two-dimensional modeling and channel bathymetry will be integral in planning habitat location and orientation. This is part of a \$1.4M historic channel restoration of the Elkhorn River to protect the 240th Street corridor and its related infrastructure from erosive channel velocities.

Grand Lake St. Mary's Water Quality Improvement Project • Ohio • Ohio EPA • Current - Senior scientist involved in the review of water quality modeling efforts, review of water quality data,

Education:

Ph.D. 1998, Biological Sciences (Aquatic Ecology) (University of Nebraska, Lincoln)

M.S. 1994, Forestry, Fisheries and Wildlife (University of Nebraska, Lincoln)

B.S. 1991, Natural Resources (University of Nebraska, Lincoln)

Affiliations:

American Society for Limnology and Oceanography

Ecological Society of America

North American Lake Management Society

and the design/implementation of watershed and in-lake restoration techniques to address pollutant loads.

The assessment and prediction of stormwater pollutants were addressed in the plan through water quality modeling.

Alum Lake Restoration Project • Statewide Nebraska • Various Clients • Current - Performed all aspects of an alum lake restoration project, including project design, obtaining grant funding, pre-project water quality monitoring, applying the chemical, post-application water quality monitoring, impact of treatment on Lake Biota, project evaluation, and final report/manuscript preparation.

Carter Lake Water Quality Improvements Final Design and Permitting • Carter Lake, Iowa and Omaha, Nebraska • Metropolitan Area Planning Agency • 2012 - Senior scientist involved with development and implementation of watershed management plan for Carter Lake, including in-lake and watershed best management practices to control pollutants and meet TMDL requirements.

University of Nebraska Water Center Grant Projects • Nebraska • Various State and Federal Agencies • 2009 - Led multidisciplinary teams of faculty charged with obtaining large grants and conducting ecosystem level water-related research. In this effort, built and led research teams comprised of ecologists, hydrologists, GIS specialists, remote-sensing specialists, watershed modelers, soil scientists, agronomists, statisticians, engineers, resource managers/regulators, natural resource policy specialists, environmental consultants, computer software developers, economists, public policy specialists, and community laypeople.

Water Center Outreach • Nebraska • Nebraska Department of Environmental Quality • 2009 - Assist in planning of Water Center activities, including research and teaching retreats, water resource tours, public outreach activities, website design, conferences, and staffing.

Nebraska Lake and Stream Nutrient Criteria Committee • NDEQ • 2009 - Invited to serve as co-chair and technical advisor of this group comprised of U.S. EPA, Nebraska Department of Environmental Quality, and University of Nebraska personnel responsible for defining nutrient criteria for Nebraska.

U.S. EPA Region VII Lake and Stream Regional Technical Assistance Group • USEPA • 2009 - Invited to serve as technical advisor of this group which is responsible for establishing realistic water quality expectations (nutrient criteria) for lakes, reservoirs, streams and rivers in Kansas, Missouri, Iowa, and Nebraska. Role is to develop innovative statistical and modeling approaches to determining water quality expectations in agriculturally dominated ecosystems.

Water Quality Improvements • State-wide Nebraska and Other Midwest Locations • Various Clients • 1994 - Provided consulting for improving surface water quality through the use of aluminum-based products (e.g., alum). Research and development efforts improved upon traditional alum treatment approaches by developing treatment systems to address the unique challenges of water resource management in the agricultural Midwest. Successfully designed and implemented all of Nebraska's alum water quality improvement projects to date.

OTHER EXPERIENCE

President & Water Quality Specialist • Freshwater Consulting, Inc. • Lincoln, Nebraska • 2004-2009 - Co-founder of Freshwater Consulting, Inc. (FWC), a Nebraska-based company specializing in improving surface water quality through the use of aluminum-based products (e.g., alum). FWC's research and development efforts improved upon traditional alum treatment approaches by developing treatment systems to address the unique challenges of water resource management in the agricultural Midwest. FWC had over 20 years of combined experience and provided the most comprehensive alum services available, including pre-project water quality monitoring, algae identification, chemical dose determination, GPS-guided chemical application, alum injection systems for the treatment of storm water/stream water, and post-project water quality monitoring and evaluation. In addition, FWC successfully designed and implemented all of Nebraska's alum water quality improvement projects.

Assistant Professor • School of Natural Resources • University of Nebraska • Lincoln, Nebraska • 1998-2009 -

Co-chair and Technical Advisor • Nebraska Lake and Stream Nutrient Criteria Committee • 2007-2009 - Invited member of this group comprised of USEPA, Nebraska Department of Environmental Quality, and University of Nebraska personnel responsible for defining nutrient criteria for Nebraska.

Technical Advisor • USEPA Region VII Lake and Stream Regional Technical Assistance Group 1999-2009 - Invited member of this group which is responsible for establishing realistic water quality expectations (nutrient criteria) for lakes, reservoirs, streams and rivers in KS, MO, IA, and NE. My role is to develop innovative statistical and modeling approaches to determining water quality expectations in agriculturally dominated ecosystems.

Assistant Director • Water Center • University of Nebraska • Lincoln, Nebraska • 2003-2007 - The Water Center is a unit within the UNL system that represents and coordinates all water-related faculty and activities (research, teaching and extension) at UNL.

Board of Directors • North American Lake Management Society (NALMS) • 1999-2002 -

Research Project Manager • School of Natural Resources • University of Nebraska • Lincoln, Nebraska • (1994-1998) -

HONORS AND AWARDS

- 2001 Environmental Council of the States Program Innovation Award in recognition of the accomplishments of the Community Lake Enhancement and Restoration (CLEAR) Program.
- 1999 North American Lake Management Society Technical Excellence Award for 1999 in recognition for Outstanding Research in Lake Restoration, Protection, and Management.
- 1999 Selected as a participant in the Dissertations Initiative for the Advancement of Limnology and Oceanography Symposium at the Bermuda Biological Station for Research
- 1999 Outstanding Water Resources Dissertation in the Field of Water Quality, Honorable Mention. The Universities Council on Water Resources.
- 1997 Best Student Presentation, 17th International Symposium of the North American Lake Management Society

PUBLICATIONS

- Gitelson, A.A., G. Dall Olmo, W. Moses, D.C. Rundquist, T. Barrow, T.R. Fisher, D. Gurlin, and J.C. Holz. 2008. A simple semi-analytical model for remote estimation of chlorophyll-*a* in turbid waters: Validation. *Remote Sensing of Environment* 112:3582-3593.
- Bulley, H., D. Marx, J. Merchant, J. Holz and A. Holz. 2008. *A Comparison of Nebraska Reservoir Classes Estimated from Watershed-Based Classification Models and Ecoregions*, *Journal of Environmental Informatics* 11:90-102.
- Eades, R., L. Richters, T. Barrow, J. Holz, P. Brakhage, and E. Traylor. 2008. Improving Nebraska lakes via the Community Lakes Enhancement and Restoration (CLEAR) program. R. Eades, J. Neal, T. Lang, K. Hunt, and P. Pajak, editors. *Proceedings of the 2007 Urban Fishing Symposium*. American Fisheries Society Special Publication. Bethesda, Maryland.
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Education

- ▶ Doctor of Philosophy, Biology (Ecology and Evolutionary Biology); Yale University, 1976
- ▶ Master of Philosophy, Biology (Ecology and Evolutionary Biology); Yale University, 1971
- ▶ Bachelor of Arts, Biology; Queens College, 1969

Certifications and Specialized Training

- ▶ Basic Wetland Delineation, 1990
- ▶ BNSF Contractor Orientation Test
- ▶ E-RAILSAFE
- ▶ FERC Environmental Compliance, 2008
- ▶ FERC Regulatory Overview, 2008
- ▶ Introduction to Section 106 Review, 2001
- ▶ NEPA and the Transportation Decision Making Process, 2003
- ▶ Roadway Worker Protection
- ▶ UPRR Contractor Orientation Test

Olsson Professional Experience

- ▶ 1999 To Present

Total Professional Experience

- ▶ 1976 To Present



Joan Darling, Ph.D.

Environmental and Recreational Technical Expert

Experience Summary

Joan offers over 35 years of experience in ecology and field biology. An environmental consultant since 1985, she has managed many large environmental projects, including NEPA projects. She has written and reviewed for NEPA compliance Environmental Impact Statements and Environmental Assessments, and has conducted faunal and botanical surveys, endangered species surveys, and upland, wetland, and aquatic habitat studies.

A wetlands specialist, Joan has conducted over 350 wetland delineations in Nebraska, Kansas, Missouri, Iowa, Colorado, California, Indiana, Pennsylvania, Louisiana, Delaware, New Jersey, and Virginia. In addition, she has worked on freshwater and saline wetlands in many parts of North and Central America, including New England, the mid-Atlantic Coast, Florida, the Gulf of Mexico, the Mississippi and Missouri River Basins, California, the Pacific Northwest, Mexico, the Yucatan, and the Caribbean.

Her clients have included US Army Corps of Engineers, Philadelphia and Omaha Districts; Argonne National Laboratory; US Postal Service; Federal Aviation Administration; Nebraska Department of Corrections; Nebraska Department of Roads; Pennsylvania Turnpike Commission; cities; counties; natural resource districts; and other public and private entities.

Wetlands Delineation/Mitigation/Restoration/Permitting

- City of Lincoln, Project Manager for Wetland Mitigation Bank - Lincoln, Nebraska
- Burlington Northern Santa Fe (BNSF) Railway, Project Scientist for Wetland Mitigation Bank - Nebraska
- Project Scientist, Blue Heron Marsh Wetland Mitigation Bank - Washington
- BNSF Railway, Project Scientist for Wetland Permitting, Mitigation, and Monitoring - Various Locations in Nebraska and Iowa
- NDOR, Project Manager for Inland Saline Wetland Mitigation Bank - Nebraska
- Pennsylvania Turnpike Commission, Project Manager for Beaver Valley Expressway Environmental Permitting - Western Pennsylvania
- Pennsylvania Turnpike Commission, Project Manager for Beaver Valley Expressway Wetland Mitigation Plan - Western Pennsylvania
- USACE Pennsylvania District, Project Manager for Two Long-Term Contracts for Wetland Delineations, Jurisdictional Determinations, and Habitat Studies - USACE Pennsylvania District
- Fairfax County Parks Authority, Project Scientist for Water Quality Testing Programs Used by School Children - Fairfax County, Virginia
- Union Pacific Railroad (UPRR) Company, Project Manager for Wetland Delineations and Permitting Projects - Nebraska, Kansas, California
- Burlington Northern Santa Fe (BNSF) Railway, Project Scientist for Wetland Permitting, Mitigation, and Monitoring - Various Locations in Nebraska and Iowa
- Federal Aviation Administration, Project Manager for Delineated Wetlands ASR-11 Radar Corridor - Lancaster County, Nebraska
- USDA and Argonne National Laboratory, Project Manager for Murdock Phytoremediation Wetland - Near Murdock, Nebraska
- Project Scientist for Restoring Aquatic Habitats by Improving Water Quality Through Use of Wetlands - Multiple Sites in United States
- Project Scientist for Wetland Delineations, Mitigation, and Monitoring Studies for Numerous Public and Private Clients - Multiple Sites in United States



Joan Darling, Ph.D.

OLSSON ASSOCIATES

Experience, Continued

- Project Manager for Wetland Delineation, Permitting, Mitigation Design, and Monitoring for Numerous Public and Private Clients - Kansas City Metropolitan Area
- Project Manager for Wetland Delineation, Permitting, Mitigation Design, and Monitoring for Numerous Private Clients - Nebraska and Colorado
- Project Manager Providing Wetland Delineation, Permitting, and Mitigation for Numerous Stormwater Management and Infrastructure Improvement Projects for Public Clients - Multiple Sites in United States
- Qualified Expert Witness

NEPA Compliance: EIS/EA/CE

- City of North Platte, Project Manager for Buffalo Bill Avenue Extension Environmental Assessment - North Platte, Nebraska
- Nuclear Regulatory Corporation (NRC), On-Call Key Personnel for Pipeline Environmental Review
- City of Cheyenne, Primary Author for Norris Viaduct Environmental Assessment - Cheyenne, Wyoming
- NDOR/Iowa DOT, Project Manager for South Omaha Bridge Environmental Impact Statement (EIS) - Omaha, Nebraska
- City of Omaha, Project Manager for Gibson Road Viaduct Environmental Assessment - Omaha, Nebraska
- Nebraska Department of Corrections, Project Manager for VOI/TIS Facility Environmental Project Status Report - Tecumseh, Nebraska
- Saunders County, Primary Author for Sand Creek Watershed Environmental Restoration and Environmental Impact Statement - Saunders County, Nebraska
- City of Lincoln/Lancaster County Railroad Transportation Safety District, Primary Author for 3rd and "A" Street Environmental Assessment (EA) - Lincoln, Nebraska
- Covington and Burling, LLP, Project Manager for Lockheed Boulevard Extension NEPA Compliance Review - Virginia
- Pennsylvania Turnpike Commission, Project Manager for Beaver Valley Expressway Environmental Permitting - Western Pennsylvania
- City of Lincoln, Project Scientist for South and East Beltways EIS - Lincoln, Nebraska
- Pennsylvania Turnpike Commission, Project Manager for Beaver Valley Expressway EIS - Western Pennsylvania
- United States Postal Service, Primary Author for New Facility EA - New Jersey
- United States Postal Service, Primary Author for New Facility EIS - Pennsylvania
- Project Manager for Environmental Issues Associated with Several Bridge Replacements - Various Locations in Philadelphia, Pennsylvania

Endangered Species Act/Migratory Bird Act Surveys and Compliance

- NDOR and Iowa DOT, Project Scientist for Spring Ladies Tresses, Ginseng, and Other Endangered Species Surveys - Various Locations in Nebraska and Iowa
- NDOR/Iowa DOT, Primary Author for Biological Assessment of South Omaha Bridge EIS - Omaha, Nebraska
- City of Lincoln, Project Scientist for Bur Oak and Other Endangered Species in Wilderness Park - Lincoln, Nebraska
- UPRR Company, Project Scientist for Surveys and Author for Biological Assessment of UPRR Bridge Replacement - Stockton, California
- Nemaha Natural Resources District, Project Scientist for Western Prairie Fringed Orchid and Other Endangered Species Survey - Tecumseh, Nebraska
- USACE, Project Scientist for Western Prairie Fringed Orchid and Other Endangered Species Surveys - Various Locations in United States



Joan Darling, Ph.D.

OLSSON ASSOCIATES

Experience, Continued

- City of Lincoln, Project Scientist for South and East Beltways Endangered Species Surveys of Western Prairie Fringed Orchid and Other Endangered Species - Lincoln, Nebraska
- Project Scientists for Flow Depletion Analyses of Platte River Threatened and Endangered Species - Multiple Projects Along Platte River
- Project Scientist for Least Tern and Piping Plover Bird Impacts at Sandpit Lakes Survey - Along Platte River
- Saunders County, Project Scientist for Sand Creek Watershed Environmental Restoration and EIS Coordinated Mitigation for Impacts to Platte River Threatened and Endangered Species - Saunders County, Nebraska
- Project Scientist for Rare Fish Surveys Including Brooke Stickleback, Plains Top Minnow, and Topeka Shiner Associates with Road and Railroad Projects - Various Locations in the United States
- Holder of Master Permit for Collecting Endangered Saltwort

Education

- ▶ Bachelor of Science, Mechanical Engineering; University Nebraska-Lincoln, 1971

Professional Registrations

- ▶ Professional Engineer: NE, # E-3927

Olsson Professional Experience

- ▶ 1967 To Present

Total Professional Experience

- ▶ 1967 To Present



Bob Wolf, PE

Civil Engineer

Experience Summary

Bob has a wide range of experience in the study, design, and construction of facilities for channelization, stormwater management, flood control, water supply, transmission, distribution, and storage. He has also completed hydrologic and hydraulic modeling and has design experience with airport development, wastewater collection, streets, and swimming pools. Bob's experience in these areas includes engineering feasibility studies, design, contract administration and construction, economic evaluations and reports, plan preparation, specification writing, and cost estimating.

Groundwater Management Planning

- Project manager for groundwater management plan for Upper Loup NRD
- Project manager for groundwater management plan for Upper Elkhorn NRD
- Project manager for groundwater management plan for Lower Elkhorn NRD
- Project manager for groundwater management plan for North Platte NRD

Watershed Planning/Studies/Improvement

- Project manager for Papio-Missouri River Natural Resources District (NRD) 10-year Master Plan
- Project manager for the Sutherland watershed study, Sutherland, Nebraska
- Project manager for the Prairie Creek watershed study in Hall and Merrick Counties, Nebraska
- Project manager for the Skull Creek watershed study in Butler and Saunders Counties, Nebraska
- Project manager for the Stevens Creek watershed study in Lincoln, Nebraska
- Project manager for the Sand Creek Watershed Study/EIS in Saunders County, Nebraska for USACE

Channel Stabilization

- Project engineer for Holmes Lake Restoration in Lincoln, Nebraska
- Project manager for Antelope Creek, DeadMan's Run, Silver Creek, Mill Creek, and Oak Creek Floodway Channel Stabilization Projects, Nebraska
- Project manager for floodway channel stabilization improvements, Wilber and Hickman, Nebraska
- Project engineer for Stormwater/Floodway Components for Antelope Valley Major Investment Study, Lincoln, Nebraska

Stormwater/Drainage/Watershed Studies and Improvement

- Project manager for Stormwater Basin Planning and Stormwater Design Manual Development for the City of Lincoln, NE and Lower Platte South Natural Resources District (NRD)
- Project manager for design and construction of more than 40 small watershed dams
- Project engineer for Holmes Lake Restoration in Lincoln, Nebraska
- Project manager for the 2005 Omaha Stormwater Design Manual, Omaha, Nebraska

Dam/Reservoir Studies and Design

- Project manager for Weeping Water Creek Dam Sites 2a, 2i, 4f, 4j, 5h, 5k, 6b, 6g, 7c, 7f, 7g, 8a, 15b, 15g, 15i, 17d, 17l, 19c and 21a, Lower Platte South NRD, Cass County, Nebraska
- Project manager for Upper Little Nemaha Watershed Dams 18, 34, 37, 5, 7 and 17, Nemaha NRD, Otoe County, Nebraska
- Project manager for Papio Dam Site 21/Walnut Creek Reservoir, Papio - Missouri River NRD, Papillion, Nebraska



Bob Wolf, PE
OLSSON ASSOCIATES

Experience, Continued

- Project manager and project engineer for Plattsmouth Dam 10a rehabilitation and improvements, Lower Platte South NRD, Cass County, Nebraska
- Project manager for Struebing Dam, Upper Big Blue NRD, Butler County, Nebraska

Paving/Sidewalk/Parking Lot Improvements

- Project engineer for urban paving and storm sewer design in Lincoln, Nebraska
- Project engineer for urban paving and storm sewer design in David City, Hickman, Tecumseh, Red Cloud, Madison, Deshler and Franklin, Nebraska

Water Supply/Transmission/Distribution/Storage

- Project engineer for water transmission facilities from Beatrice to Filley, Nebraska
- Project engineer for water system supply, distribution, and storage facilities at Bennet, Nebraska
- Project engineer for water system supply, distribution, and storage facilities at Ceresco, Nebraska
- Project engineer for water supply wells, storage, and distribution system development at Branched Oak Lake and Pawnee Lake for the Nebraska Game and Parks Commission
- Project engineer for 16" and 20" diameter primary water distribution mains at Fremont, Nebraska
- Project engineer for water supply wells at Eagle, Tecumseh, and Malcolm, Nebraska