Downtown
Des Moines
Recommendations
The Greater Des Moines Water Trails & Greenways Plan is poised to be a transformative project for Greater Des Moines. The project could invigorate Des Moines’ downtown area and re-connect the local community with one of the area’s most important natural resources, the river. The conceptual plan developed by the Metropolitan Planning Organization provides a great vision for the area. The Stantec team is excited for the opportunity to help bring this vision to life.

The next step in the process of implementing this plan is to evaluate the feasibility of the conceptual plan. We feel that our team has the experience and technical capabilities to assist the MPO and the City with this study. Stantec’s team includes Shive-Hattery, Riverwise Engineering, LLC, E Resources and LT Leon Associates to provide a full-range of services required by this RFQ. Our team brings the following key benefits:

**Placemaking and Experience-based design focus.** We believe in experience-based design that not only distills and reveals the essence of a place, but links site design and programming to the past, present, and future for contextually appropriate project implementation(s). Designing a plan that can eliminate barriers to the river, provide connections to downtown, create river access as well as integrate local art and history will be our goal. Using our team approach, by anticipating landscape architectural, engineering and construction issues during a creative design process, Stantec sets itself apart. We can do this because we have recently completed other projects very similar in scope and community outreach to this, such as the Scioto Greenways project that transformed downtown Columbus, Ohio, the Downtown Wausau Riverfront Redevelopment project in Wausau, WI and the Calgary Riverwalk in Calgary, Alberta.

**River knowledge.** Stantec knows rivers from an ecological and restoration viewpoint to a flood mitigation and management perspective. We have been supporting the City of Des Moines in the evaluation of the City’s flood protection and levee system for the past five years. We developed the latest hydraulic models for the Raccoon and Des Moines River systems and helped identify the projects that the City plans to implement along the rivers. We will use our knowledge to make sure that the proposed Water Trail projects complement the City’s planned system-wide levee improvements.

**Local experience.** In addition to Stantec’s knowledge of the local river systems, Shive-Hattery has been involved in the Des Moines community for over 45 years. They understand the pulse of the local community and will be closely integrated into the conceptual design team. Riverwise Engineering, LLC is currently overseeing all stages of multiple Iowa projects involving whitewater features, dam removal and fish passage. They will provide key input relative to these aspects of the project. E-Resources and LT Leon Associates round out the Stantec team. These team members are strongly invested in the success of the Water Trails program and will help address historic preservation, interpretation and funding for this project.

Within this proposal you will find the following sections:

- **Approach.** This section summarizes our general approach and identifies a preliminary workplan.
- **Related Technical Experience.** We have selected five projects that illustrate our team’s related experience, ranging from the City of Des Moines levee system improvements to dam mitigation projects to award-winning greenways projects similar to the vision for Greater Des Moines.
- **Qualifications of Project Staffing and Organization.** We have included an organization chart along with concise bios for key team members. Full resumes are available upon request.
- **Capacity & Timeline.** A preliminary timeline for completion of the work is presented, along with availability and commitment of key personnel.
- **Sample Plan Document.** We have included a copy of our Scioto Greenways Feasibility Study.

We appreciate the opportunity to submit our qualifications and look forward to supporting the MPO in this important endeavor.
Calgary Riverwalk in Calgary, Alberta
The goal of this project is to lead the MPO and the City through a feasibility study process resulting in an implementable and fundable plan for developing the riverfront. Success of the project depends on the Stantec team’s ability to combine the community’s needs, wishes, and input with our expertise and experience in river systems, water trails, and designing great public spaces. This feasibility study is only the first step. It is critical that enough attention is given to the constructability of this vision. This will allow a seamless transition to future project phases, such as design development, permitting, construction document preparation, and construction. The final built environment should meet the original concept intent and stakeholder expectations.

Feasibility is determined not only from a technical engineering perspective, but also from an economic, public, and permitting viewpoint. The master plan recognizes the amenities along the river corridor through the downtown area, but realizes that improvements are needed to activate the river itself. A key element to the implementation of the concepts in the plan is addressing the two low-head dams in downtown Des Moines and the low-head dam on the Raccoon River at Fleur Drive. The mitigation of these dams must include considerations dealing with safe on-water recreation, economic development, environmental restoration, historical structures, and required pool levels.

**Design Philosophy**

Our approach to the Conceptual Planning process will be a collaborative partnership that will respect the planning principles of the Greater Des Moines Water Trails and Greenways Plan and guide the refinement of the downtown Vision for the Des Moines River into an implementable and fundable reality. Given our recent engagement and work on the Des Moines River levee system with the City, we are in a great position to seamlessly merge the intersection of the Downtown Vision for the Des Moines River concept plan and dam removal design with the levee system work, so that when both are complete, a comprehensive exciting new vision for the public realm of Des Moines will be born! With the Des Moines Area MPO, City of Des Moines, and other stakeholders as our partners, together we will create opportunities for a unique Downtown Water Trails Experience by weaving together Place, Story, Access and Infrastructure.

From the broad scale of the regional context to the focused scale of landscape details, we recognize the importance of a holistic approach to design. Our process is based on developing a clear understanding of both the whole and the parts, and the specific issues and opportunities influencing the project.

A critical aspect of the Downtown Water Trails Plan is the recognition of its variety of contextual influences. While the Water Trails placemaking must have cohesive and distinct character, the response to local influences should be reflected and incorporated into program and stories. Fundamental is the creation of a variety of spaces and places within an overall location that, when experienced in part or in whole, leaves the visitor with a rich and meaningful experience. These spaces, when layered with cultural, regional and geographic influences create a truly great place and ultimately define the spirit of the place. An intuitive, clear network of overlooks, pathways, plazas, kayak/canoe launches, fishing access and visual connections that bring people down to the water’s edge will tie the Des Moines and Raccoon Rivers together with the local neighborhoods, businesses and the downtown area to support a wide variety of river engagement opportunities (fishing, bird-watching, wading, boating, paddling, white-water recreation, surfing, river-side dining, historical and environmental interpretation, river-based transportation, HC accessibility).

Local and regional art should influence the architectural and hardscape vocabulary and native plant material and landscaping will bring a distinctive softening to the Water Trails places. Local and regional artwork will strengthen the character of the Water Trails placemaking and showcase the craftsmanship and creativity of the surrounding community.
Des Moines has a rich history that will be more fully expressed. Our team will bring alive the stories of the past and weave these into the present. We routinely distill and synthesize historical and cultural influences into fundamental components of design. We start this process at the very beginning of the project and it often informs every decision that we make. We also create branded experiences and places that have the ability to generate revenue. We create the framework for integrated retail, restaurant and entertainment venues. A three dimensional branded place creates an experience that communicates formative ideas into sensory and emotive environments.

We believe in experience-based design that not only reveals and optimizes the essence of a place, but exposes the inter-connectedness of that place to the past, present, and future. These "elective places" should inspire creativity, activity, thought, pride and fun! And, most importantly, places like the Water Trails urban access points must improve the economic and ecological vitality of our cities and the quality of our lives. Rivers are often the centers of our communities, providing public spaces and recreation for our children, families, residents and visitors. They tell stories of the past and create the stories of the future.

The feasibility study will clearly map out conceptual designs of mitigation options for the dams and identify issues that will need to be addressed during final design and the project lifecycle. The main outcomes of this feasibility study are:

- A conceptual design with alternatives that are based on sound engineering;
- Budgetary cost estimates for final design tasks and construction, including potential funding sources and phasing;
- A project plan that identifies issues to be addressed during final design, permitting requirements, and a project timeline;
- Renderings and presentations of the proposed project to be utilized for garnering support and funding;
- Facilitation of three Advisory Committee meetings and presentations to various groups.

Workplan

A preliminary workplan for this project is presented below. The initial phase of this study is focused on evaluating the engineering feasibility of the conceptual alternatives. The second phase includes refinement of the feasible elements and incorporation into an overall recommended plan. The details within each task, and perhaps the addition of others, will be customized to meet the unique requirements and budget at the outset of this project.

1. Kick-off meeting

The first step is to conduct a kickoff meeting to affirm the roles of key players and establish responsibilities. The meeting will include discussion of stakeholder expectations, schedule and timing of milestone deliverables, and identification of challenges and opportunities. The ultimate goal is to obtain a clear understanding of the MPO and City’s expectations and set the project on a course for success! The Stantec team will conduct a preliminary field reconnaissance, possibly with stakeholders, following the kick-off meeting.

2. Data collection/review

Stantec’s team of river restoration, geotechnical and structural engineers, biologists, and environmental scientists will then perform a desktop review of available data relevant to the project. The intent of this initial review is to identify available information that can be used to support the feasibility study and avoid additional costly data collection. For instance, we may be able to utilize existing hydrographic survey information collected by the University of Iowa to reduce the amount of data collected for this study. We will identify gaps where additional data is required and
compile a list of additional information needs. Data to be reviewed includes: grant applications; GIS data; record drawings of dams and other key structures such as bridges and adjacent building foundations; historical photographs; water quality data; historical and archaeological resources; T&E species information; IDNR Dam Safety Information; USGS gage data.

In addition to the above information, an understanding of current property boundaries and ownership is required for the feasibility study. Stantec will utilize the County Auditor’s property ownership data to identify this information. A detailed review of the bridge right-of-ways will also be required to determine if they were acquired in fee or by easement. We will obtain current plans for Iowa Department of Transportation (DOT), railroads, City and County rights-of-way abutting the river alignment. Depending on potential funding sources, conservation easements or environmental covenants may be required across some properties for any river restoration work.

Base maps will be prepared from this information to highlight existing conditions and identify opportunities and constraints. This analysis will address both the site specific as well as the greater river corridor context. In later stages, we will develop graphical representations of the anticipated scenarios that result from potential dam removal/mitigation and river restoration alternatives. A brief summary describing the anticipated scenarios and a response/action plan for each scenario with respect to property ownership issues will be presented in the Feasibility Study Report.

Following completion of the desktop review and identification of information gaps, our team will proceed with collection of additional data if necessary. This may include hydrographic and/or topographic survey, sediment sampling or water quality sampling. Our team will also perform additional watershed reconnaissance as necessary to review detailed information in some areas, particularly the confluence of the Raccoon and Des Moines Rivers, the impounded segments of the river behind the dams, and the river segments downstream of the dams. This is a critical step in understanding the flow regimes influencing potential dam removal/mitigation activities.

3. Initial screening

Based on the review of existing information and the field reconnaissance, the team will conduct preliminary assessments of the concepts listed in the master plan to determine what concepts are not feasible and which ones should move forward into more detailed study. The purpose of this initial screening is to rule out infeasible projects early in the process to allow incorporation of potential alternative elements in the feasibility study. Challenges related to flow regime, hydraulic capacity and associated impacts to the flood protection system, and regulatory issues will be identified at this stage.

This initial screening will be conducted and documented based on the team’s experience in river hydraulics, flood protection systems, environmental permitting, constructability, and costs. The results of the initial screening will be presented to the MPO, the City and other stakeholders in a meeting (Meeting #1) or webinar to establish concurrence on the proposed path forward and discuss opportunities for incorporation of additional features into the design.

4. Feasibility analysis

Following the meeting, the team will move into evaluation of the feasibility of the remaining project features. The goal of the feasibility study will be to identify:

- Hydraulic impacts of the projects along the river systems, including the City’s flood protection system and nearby bridges and structures
- Impacts to water quality and current river users (intakes, recreation, etc)
- Regulatory challenges associated with the projects
- Relative costs and funding potential
The feasibility analysis for key components of the study are described in further detail below.

**Hydrologic & Hydraulic Study:** Since the study area is located downstream of Saylorville Lake, understanding of the flow regime will be key to evaluation of any recreational amenities. Stantec’s work on the hydraulic modeling of the river system provides us with a unique understanding of this aspect of the project. We will review Saylorville operation protocols and historical USGS discharge records for the Des Moines and Raccoon Rivers. The team will prepare flow-duration curves to assess the percentage of the year that river conditions are favorable for in-stream activities. This will allow the team to better assess the usability of elements such as access locations and whitewater components.

We will also prepare hydraulic models of the proposed project elements to evaluate the hydraulic impacts on the river systems. A key portion of this task will be to verify that project elements do not reduce the effectiveness of the City’s flood protection and levee system. Since Stantec has been supporting the City in identification of improvements, we will evaluate possible means of combining flood protection and amenities along the project area.

**Dam Removal/Mitigation:** Opportunities for recreational amenities in the downtown area are directly tied to the multiple low-head dams in the area. Mitigation of these structures is key to the success of many desired elements. Between Stantec and Riverwise, our design team has a tremendous amount of experience with options related to removal, permanent structural modifications, and temporary structural modifications of the dams. It is common for communities to desire a full removal to restore the reach to free-flowing conditions, create and enhance environmental restoration, create natural channel processes, and to mitigate the hazard associated with dams. Unfortunately, most dams have secondary purposes such as headwater stabilization, aesthetic requirements, diversions, and pool creation. We understand some of these requirements may be part of the final design and our experience working with stakeholders to address these situations has proven to be a key stage in the design process. This stage is necessary to create “buy-in” from the stakeholder community and gain the political and financial momentum needed to get a project built. This project involves evaluation of three dams:

- **Center Street Dam:** The proximity of this structure to the Principal River Walk Bridge and associated access points are a draw to the area and complementing instream features could create a premier attraction for the City. Since an upstream pool elevation needs to be maintained, an impounding structure may necessary. Our team will evaluate multiple options in this area, such as bypass channels, pool-riffle systems or placement of native rock on the downstream side of the dam.

- **Scott Avenue Dam:** The Scott Avenue Dam is particularly dangerous because of its location just downstream of the confluence of the Raccoon and Des Moines Rivers. Past safety issues suggest that mitigation of the hydraulics is necessary to create water trails amenities associated with this area. Because the dam is five feet high, it is particularly dangerous at lower and medium discharges which are the levels that would see the most public use of the amenity. This structure does, however, maintain water levels throughout the downtown area during periods of low flow in the Des Moines River. Mitigation and design alternatives will have to be carefully evaluated from a flow regime standpoint to verify that mitigation does not adversely impact upstream uses.

- **Fleur Drive Dam:** This dam is approximately 3.5 feet high, has minimal warning signs, and would pose a potentially fatal danger to anyone attempting to negotiate it. Our team envisions at least three design options for this dam and anticipate a creative, unique, and effective set of alternatives. The nearby Meredith Trail and opportunities to link the nearby Gray’s Lake Park provide significant potential for this site.
One of the principal issues to be resolved prior to dam removal/mitigation is the fate and transport of the sediment behind the dams. Stantec will estimate the existing sediment volume upstream of the dams and analyze risk and cost associated with sediment management.

There are four primary concerns associated with the sediment: Water quality and mussel habitat degradation; quantity of sediment to manage; potential of contaminated sediments; and cost impacts of sediment management and handling/disposal. Disturbance of the Des Moines River and Raccoon River bed sediments as part of the construction work within the river may cause chemical constituents attached to the bed sediment to be released into the downstream water column. In addition, if river bed sediment will be excavated as part of the construction and will require proper disposal, characterization of the riverbed sediment will be necessary for evaluation of environmental impacts, waste disposal, and cost. If existing data is not available, Stantec can develop and execute a sampling and testing plan as needed.

**Regulatory Compliance:** The team will also evaluate the regulatory feasibility of the conceptual project elements. Stantec recommends beginning agency coordination as early as possible to understand the agency issues and avoid unwanted schedule delays. Our Regulatory Compliance team lead, Stacey Parks, recently led the development of a programmatic Environmental Assessment (EA) for the City of Des Moines Downtown Levee System project, so she is very familiar with the existing features and constraints in the project area. Our team is also working closely with IDNR, FEMA and USACE (Section 408) on the levee project, and will be able to efficiently integrate elements of the water trails plan. Primary regulatory programs that will be evaluated, and potential specific considerations, are listed below. Budgetary costs for permitting and additional studies required to support the permits will be included in the overall estimate of probable project costs for the design phase of the project.

- **Section 106 of the National Historic Preservation Act Permitting:** The Center Street and Scott Avenue Dams, and the historic balustrades are considered part of the Civic Center Historic District within the National Historic Registry. In addition, this stretch of river included additional archaeological sites and points of historical significance. These sites and designations can incur greater regulation and hurdles to clear when proposing improvements to the riverfront. They are also opportunities for interpretation and education. [http://dmampo.maps.arcgis.com/apps/MapJournal](http://dmampo.maps.arcgis.com/apps/MapJournal). Existing and previous studies will be used to identify potential cultural resources issues to understand the potential agency coordination that will be required for dam removal/mitigation.

- **Section 7 Endangered Species Act Consultation:** Based on discussions with the US Fish and Wildlife Service (USFWS) on similar projects, their primary concerns will be focused on potential impacts to freshwater mussels. The Stantec team will have informal discussions with USFWS to determine what future studies they will require for permitting the project.

- Clean Water Act 404/401 Permitting. Similar projects have been covered under a Nationwide Permit (NWP) 27. The Stantec team will have preliminary discussions with the US Army Corps of Engineers (USACE) Rock Island District to discuss the potential permitting of this project.

- **Floodplain Permitting:** Based on similar projects, the project will require a floodplain permit from the City of Des Moines and a Letter of Map Revision (LOMR) from the Federal Emergency Management Agency (FEMA). Since it is anticipated that the conceptual design alternative will need fill to be placed within the limits of the existing river, a variance will be required from the City’s Floodplain Administrator. The Stantec team will have preliminary discussions with the City to discuss the potential floodplain permitting of this project.

These coordination efforts and resulting future requirements will be summarized in a section of the Feasibility Study Report.
5. Conceptual Design

As feasible project elements are identified, our team will begin compiling these features into a comprehensive plan. The results of the feasibility analysis and conceptual design development process will be presented to the MPO, City and stakeholders in Meeting #2. The intent of the meeting will be to obtain input regarding the results of the feasibility analysis, conceptual plan direction and incorporate the groups input in the refinement of the design.

6. Design Refinement

Following the meeting with the MPO, City and stakeholders, our team will proceed with refinement of the conceptual design based on input from the group. We will refine budgetary cost estimates for final design and construction tasks. We will also outline a schedule and timeline for completion of permitting, design and construction tasks that can be used to convey timelines to stakeholders or in identification of funding sources.

At this stage, we will also begin researching funding sources for the projects. Unfortunately the price of removal for dam structures and subsequent river restoration often exceeds the financial resources of owners and stakeholders. Stantec has been very successful in the field of dam removal in part because of our ability to develop and maintain collaborative relationships and financial commitments from stakeholder groups whose objectives are often widely divergent. Stantec dam removal projects have been funded in whole or in part by: USEPA section 319 non-point source pollution control grants; USFWS discretionary funds; Natural Resource Damage Assessment restoration funds; Energy utilities seeking to minimize liability for decommissioned structures; National Oceanic and Atmospheric Administration fish passage funds; FHWA and DOTs for transportation related improvements such as trails and bridges; and Non-governmental organizations, such as American Rivers and TNC. The Stantec team will research potential funding sources for this project and include a section in the Feasibility Study Report that details the sources, requirements, and application timelines.

7. Public Presentation

Following refinement of the plan, our team will support the MPO and City staff in public presentations of the refined concepts as necessary. This outreach, however, can begin as early in the process as the MPO would like. Stakeholder participation must inform the conceptual plan in a meaningful way. At the beginning of the planning process, we will involve MPO and City staff and key stakeholders to refine the program for the water trails improvements. We could also schedule a series of 30- to 60-minute individual meetings with stakeholders and appropriate City-wide department representatives to gain feedback on past issues, programming, current practices, and opportunities for capital improvements and future operations enhancements. Our on-site reconnaissance and interviews with department staff will be beneficial in performing this scope. Stantec will also identify local, regional and national precedents for urban riverfronts and river access in order to conduct a comparative analysis for the Des Moines and Raccoon Rivers downtown corridors. The purpose will be to determine what works and what doesn’t work.

Exhibits and brief narratives of the progress can be made available to the MPO for website posting. This will allow residents and other interested citizens to tune in to the conceptual plan’s progress. Our team has led and participated in numerous meetings regarding plans such as this.

8. Final Plan

Our team will incorporate input from the public outreach process and prepare a final Feasibility Study document including the refined conceptual plan.
RELATED TECHNICAL EXPERIENCE

Scioto Greenways in Columbus, Ohio
Downtown Levee System Improvements

The City of Des Moines is located at the confluence of the Des Moines and Raccoon rivers in Polk County. Portions of the city are protected by a series of earthen levees and concrete floodwalls. Stantec helping the city evaluate their system and identify the modifications necessary to meet FEMA and USACE requirements.

To begin, Stantec conducted a detailed field reconnaissance to gain first-hand knowledge of the river and levee condition and features. This was followed by a geotechnical exploration and laboratory testing.

Stantec then evaluated the levees relative to multiple design criteria. This included a hydraulic evaluation of the levee height and erosion protection, closure structure and pipe penetration assessments, seepage and stability analyses and interior drainage modeling.

Stantec identified and modeled potential alternatives for providing the required freeboard along the system. Alternatives included removal of abandoned bridges and low-head dams, removal or raising of select active bridges, channel widening, levee setbacks and increasing the height of the existing levee systems. To evaluate flood mitigation potential, one- and two-dimensional hydraulic models were used to evaluate the hydraulic impacts of the proposed measures. This resulted in significant insight into the hydraulic behavior of the subject river systems.

Planning-level cost estimates were prepared for the levee improvement projects. The city and Stantec worked to establish a “Master Plan” of projects to provide the required freeboard and address other deficiencies relative to CFR 65.10.

Stantec has supported the city’s USACE Rock Island District coordination to identify the required submittals for approval under Section 408. Stantec has prepared a Programmatic Environmental Assessment (EA) to summarize the impacts of the proposed projects. Stantec and the city are currently preparing the Section 408 documentation for submittal to USACE in 2017.

Relevant Features: Hydraulic modeling | Levee assessments | Regulatory compliance

Status: Ongoing | Location: Des Moines, Iowa
Reference: Pam Cooksey | Tel: (515) 283-4747 | pscooksey@dmgov.org
5th Avenue Dam Removal and Olentangy River

Stantec partnered with the City of Columbus, The Ohio State University, Ohio Environmental Protection Agency, and Friends of the Lower Olentangy Watershed to restore the Olentangy River.

When the 5th Avenue dam was built on the Olentangy River in 1935, it served a useful purpose – providing cooling water for a power plant on The Ohio State University campus. Decades later, with the plant long gone, the dam was now damaging the health of the river. Dams often degrade rivers by disrupting natural flow patterns and creating lake-like conditions that trap pollutants and sediment and obstruct the migration of aquatic species. That’s exactly what was happening behind this dam, so the City of Columbus retained Stantec to design its removal and restore 1.6 miles of the river to a more natural state.

During the feasibility study, we determined that for the western half of the 470-foot-long dam, only the top two feet needed to be removed. This saved significant time and money. Our natural channel design deepened the river and restored its natural flow and form, and four fringe wetland complexes were created. More than 7,500 mussels of 13 distinct species were rescued and relocated to safer areas upstream and downstream of the restoration area. Seven new riffles now provide prime habitat.

Nearly all sediment removed from the river was reused to restore and expand the river’s banks. The newly narrowed and vegetated banks offer a continually evolving green space that the university has already embraced as a center for research and recreation. Now canoers and kayakers can freely paddle through this newly restored stretch of the river, and fishermen are returning to the area as its biodiversity rebounds.

Relevant Features: Dam removal | River restoration | Habitat enhancements
Status: Complete | Location: Columbus, Ohio
Reference: Mike Griffith, Project Manager
Tel: (614) 545-4274
Email: mpgriffith@columbus.gov
Scioto Greenways

In 2012, Stantec was selected to lead a multidisciplinary team to design and oversee the removal of the Main Street Dam in downtown Columbus, Ohio, and to restore the impacted reach of the Scioto River to a more natural state.

Stantec led a multi-disciplined team on the design of this transformational project. The project included the design and permitting of the dam removal and river restoration and the design of greenways and public park space.

Stantec obtained the effective modeling for the 1.8 mile reach of the Scioto River through downtown Columbus. To accurately assess the current flood hazard, the effective model was updated using survey information supplemented by as-built plans and 2011 LiDAR points over bank and bridge geometry for eight structures.

To assess and minimize potential adverse impacts from dam removal and stream restoration, Stantec worked closely with the City of Columbus and the project’s landscape architects to create a restoration design that met all regulatory requirements while providing a beautiful urban park through the center of the city.

Throughout the initial feasibility study and preliminary design, it was necessary to coordinate with numerous local, state and federal agencies to assure that the final project met all requirements and the client’s expectations. Stakeholders include USACE, U.S. Fish & Wildlife, Ohio EPA, ODNR, ODOT, Ohio Historical Preservation Office, and the City of Columbus.

Relevant Features: Dam removal design and permitting | River restoration | Greenways and public park space design

Status: Complete | Location: Columbus, Ohio

Reference: Mark Bargo, Project Manager
| Tel: (614) 545-4274 | Email: mbargo@downtowncolumbus.com
City of Fort Dodge - Dam and Riverfront

The City of Fort Dodge engaged Shive-Hattery to provide civil engineering and landscape architecture services to conceptually assess several dam mitigation options and potential riverfront enhancement scenarios. The goal of the study effort was to develop a refined vision along with conceptual cost models, and present them to City officials, a City Council steering committee and Iowa DNR staff. The report included re-use of existing structures or other historical features, creating amenity/event spaces, providing access to water, creating trail connections, improving water quality and habitat, and a creating a fishing park.

A primary factor in achieving the project’s goals is mitigating dangerous and negative environmental conditions resulting from the existing Hydroelectric Dam that was built in 1916 and no longer produces power. A second smaller dam called the Little Dam, south of the hydroelectric dam, is also planned to be removed in order to improve and restore river flow and remove obstructions and hazards for canoeists and kayakers. Resolving the safety issues posed by the dams and providing a host of riverfront enhancements will greatly increase recreational use of the river, which will have the benefits of improving the quality of life for existing residents and driving tourism and economic development. Four Mitigation Options were developed and illustrated with photo realistic renderings for visioning and funding purposes.

Relevant Features: Dam removal | Mitigation | Shoreline enhancement | River access | River recreation and fishing | Visualization

Status: Planning | Location: Fort Dodge, Iowa
Reference: David Fierke, City Manager | Tel: (515) 573.7144
Charles City Whitewater Park

Charles City was selected for the U.S. Environmental Protection Agency’s 2014 National Award for Smart Growth Achievement and the Iowa River Town of the Year Award 2012. This award sheds light on the groundbreaking and forward-thinking vision of the community when deciding how to mitigate the former “beauty dam”. Not only had the dam killed multiple people over the years, it created an ecological barrier that further decimated the already fragile ecosystem in the area. The consulting team guided the community vision and incorporated the community desires to create this successful dam mitigation project.

Our team completed all aspects of the project from feasibility and concept design through construction management. The permitting process with the Iowa DNR was particularly arduous because it was a new type of project and the unknowns were many. We believe the success of this project in 2011 has created a trusting and collaborative environment with the Iowa DNR. Once the permitting process was complete, our team assisted the City with the media, which was keenly aware of this project and what it could mean for the City. The project has proven to be the icon of whitewater parks in Iowa and there are regular posts on social media sites associated with this park on a year-round basis. The area has become the focal point of the town with multiple events, including the Iowa Games, scheduled on an annual basis. Our feedback from City staff has been consistently positive and the local pride is notable.

Relevant Features: Dam mitigation | Whitewater | Design

Status: Complete | Location: Charles City, Iowa

Reference: Steve Lindaman, Parks and Recreation Director | Tel: (641) 257-6312
QUALIFICATIONS OF PROJECT STAFFING AND ORGANIZATION

RiverWalk Urban Waterfront Phase 1 in Calgary, Alberta
We have assembled a highly-skilled and experienced team of engineers, scientists and landscape architects to support the MPO on this project. To provide the MPO with a wide-ranging ideas on this project, Stantec will be supported by Shive-Hattery, Riverwise Engineering, LLC (Riverwise), E Resources and LT Leon Associates.

The Stantec community unites over 22,000 employees across six continents. Our work ranges from engineering and landscape architecture to project management and economics. With a long-term commitment to the people and places we serve, Stantec has the unique ability to connect to projects on a personal level and advance the quality of life in communities across the globe. Our landscape architects and engineers have earned the reputation as leaders in the planning, design and implementation of trails and park design projects for over five decades. Stantec will be the project manager and lead all major tasks. Stantec’s project manager and task leads will be your primary points of contact.

• Shive-Hattery is a multi-disciplined architecture and engineering firm with over 45 years of experience in Des Moines. They will be closely integrated into the conceptual design task to provide input on past experience in the area, such as Mike Flattery’s involvement in the Riverwalk Project, and other design elements.

• Riverwise Engineering, LLC are one of the country’s leaders in dam modification, whitewater parks, riverside design and multi-use trail systems. They are responsible for the majority of in-stream recreational whitewater river enhancements in the U.S., including multiple projects in Iowa. They will play a key role in the river hydraulics and dam mitigation tasks, particularly in evaluating the feasibility of incorporating whitewater and other hydraulic elements into the plan.

• E-Resources provides a wealth of knowledge and experience on the subject river systems. Jim Pease has paddled 150 miles within the Greater Des Moines Water Trails study area.

• LT Leon Associates is a professional engineering firm with local experience in water resources and environmental engineering. They will be integrated into the stream restoration task to provide insight on local challenges and opportunities.

The organizational chart on the following page provides an overview of key personnel and illustrates our management structure. An introduction to our supporting team members and their roles follows.

**Project Manager.** Our project manager, Matt Hoy, will coordinate our team’s activities and be your primary point of contact. Matt is currently managing Stantec’s work on the City’s levee improvement project and will be there every step of the way to make sure that the water trails projects complement the City’s planned improvements. Matt will be devoted to the City of Des Moines during this study, as he will split his time between the Des Moines Levee System project and the Water Trails feasibility study. Jenifer Bates will work closely with Matt to coordinate Shive-Hattery’s resources for the project.

**Task Leads.** We have identified three task leads to manage individual project components and promote collaboration throughout the project. Bryon Ringley will lead the Engineering task, which primarily involves River Hydraulics and Dam Mitigation Assessment. Tom Hammerberg will lead the Conceptual Design task. He will be responsible for providing input to the feasibility study and refining the conceptual plan and vision as feasible projects are identified. Stacey Parks will be lead our Regulatory Compliance review and will be integrated into the feasibility study to provide input on regulatory challenges and potential solutions associated with proposed projects. Mike Flattery will not only lead the funding evaluation piece, but he will provide input to the design team throughout the process utilizing his past experience with the Principal Riverwalk and similar projects.

Details for key team members follow.

**Matt Hoy, PE**

Matt has over 11 years of experience in a wide range of water resources analysis and design projects from the planning to construction phase. He is currently supporting the City of Des Moines by serving as the project manager and technical lead in evaluating system-wide improvements on the Des Moines River and
Raccoon River levee systems. This work provides Matt unique insight into the hydraulics of the subject rivers, as well as an understanding of the modifications planned for the flood protection systems. He will use this knowledge to make sure elements of the Water Trails plan complement the City’s improvements and do not adversely impact flood risk along the rivers. During the course of this work, Matt has coordinated closely with both FEMA and the USACE and understands the unique permitting requirements that will be involved in this project. In addition to his work in Des Moines, Matt has served as the project manager for feasibility studies for the USACE on the Mill Creek watershed in Louisville, KY and the Canoe Creek watershed in Henderson, KY. Matt will be your primary point of contact during the project. Matt will be responsible for overall project coordination and verification that the proposed conceptual plans are compatible with the City’s flood risk reduction projects.

### Office Location: Des Moines, IA
- **Experience:** 21; with S-H: 1
- **Education:** BS Civil Engineering
- **Registration(s):** PE

### Jenifer Bates, PE
Jenifer brings over 21 years of engineering experience to this team. Her experience includes roadway design (urban and rural), trail design and master planning, storm water improvements, streambank stabilization, project management, regulatory agency coordination and permitting, and construction administration services. She has significant experience with trail design, including the Polk County Conservation Gay Lea Wilson Trail and the Mark Ackelson Trail. Jenifer will work alongside Matt to coordinate team resources and provide a local point of contact.
George Athansakes, PE
George will provide Independent Technical Review of project deliverables throughout the project. George is Stantec’s Ecosystem Restoration practice leader and brings over 25 years of experience to the team. George is currently supporting the Iowa DNR in development of a River Restoration toolbox.

Stuart Krahn, Principal, RLA
Stuart will serve in the role of Independent Technical Review for the Riverfront Development team. He has a theoretical and practical understanding of project development processes, from feasibility studies and master planning through design, construction, and maintenance. Adept at critical thinking and creative problem solving in the areas of planning and site design, he enjoys using these skills in helping clients bring unique and enjoyable projects to reality.

Bryon Ringley, PE, ENV SP
Bryon is the Water Resources Discipline Leader in the Water group in Columbus and manages water resources projects in Ohio and the Midwest region. He is a Project Manager with 27 years of experience in hydraulic and hydrologic design for public works projects. His recent experience includes leading the project management, engineering, and permitting for the Scioto Greenways Project and the Fifth Avenue Dam Removal and Olentangy River Restoration Project. Bryon will manage the river systems engineering components, lending his extensive experience to a robust team of professionals.

Travis White, PE, SI, ENV SP
Travis serves as a technical lead for water resource design projects, including dam removal, ecosystem and stream restoration, watershed assessment, and green infrastructure projects. His responsibilities have included stream assessments and design, permit applications, technical assistance during construction, geomorphic surveys, hydrologic and hydraulic modeling, storm water management, sanitary and storm sewer design, and preparation of easements and legal descriptions. He is a proficient user of many CAD, hydrologic, hydraulic, and GIS programs including AutoCAD, RIVERMorph, HEC-RAS and ArcGIS. He has completed Rosgen’s Classification of Natural Rivers & Natural Channel Design training Level I – Level IV. Mr. White was the dam mitigation and river restoration expert for the Scioto Greenways Project and the Fifth Avenue Dam Removal and Olentangy River Restoration Project. Travis’ role on this project will be to lead the efforts on geomorphic assessments and potential dam mitigation concepts.

Tom Smith
Tom is a water resources engineer responsible for hydrologic and hydraulic modeling and design. He is currently the lead hydraulic modeler for the Stantec’s work with the City of Des Moines, and works with the Des Moines River and Raccoon River models on the weekly basis. His role on this project will be to evaluate the hydraulic behavior and potential impacts of various elements in the conceptual design. His understanding of the river models will allow Stantec to efficiently and accurately evaluate these features.

Shane Sigle, PE, MSCE
Shane is a consulting engineer managing, planning, designing, permitting, and implementing dam removals, in-stream whitewater parks, and greenway trails. His responsibilities include budgeting, numerical modeling, flood and scour analysis, sediment transport analysis, design, master planning, marketing, research, analysis and construction management related to river improvements. He is adept at dealing with diverse interests from multiple stakeholders to create projects suitable for all parties. He was the project manager and engineer for the Iowa River Town
QUALIFICATIONS OF PROJECT STAFFING AND ORGANIZATION

Shane will lead whitewater concept efforts working closely with the engineering and riverfront development teams.

**Luis Leon, PE, LEED AP, CFM, TSP**
Luis is the Principal Engineer and Owner at LT Leon. He has more than fourteen years of experience with hydrology/hydraulics, public infrastructure, regulatory permitting, and floodplains. Luis utilizes several hydrologic and hydraulic modeling tools to evaluate existing and proposed drainage systems. He has completed Rosgen’s Classification of Natural Rivers & Natural Channel Design training Level I – Level IV. He will support the hydraulic evaluations and river restoration aspects of this project.

**Paige Baker, PE, MLE**
Paige will lead the efforts focused on river restoration concepts. She provides expertise in watershed planning, stream restoration, best management practices, water quality monitoring, and other water quality-focused efforts. She has completed numerous studies and had many successful projects implemented, putting watershed and other types of management plans to work in many parts of the United States. Paige has both led and participated in planning studies and design and construction projects using stream restoration, soil bioengineering stabilization, best management practice, and habitat enhancement techniques. Paige’s stream restoration designs use the latest natural channel design techniques while building upon a solid foundation of traditional civil engineering. She has completed Rosgen’s Classification of Natural Rivers & Natural Channel Design training Level I – Level IV. Paige is especially skilled at communicating complex information to a wide range of audiences in a variety of written, graphic, and oral formats.

**Thomas Hammerberg, ASLA, PLA**
Tom has over 37-years of landscape architecture design experience in greenway and trail design, urban waterfront design, urban park and streetscape design and in the preparation of construction documents for recreational and municipal projects. His recent experience with Stantec includes the design of two urban greenways adjacent to waterways: the Hutchinson River Greenway and the Queens East River and North Shore Greenway, both of which were recently completed. While at the University of Minnesota, he led the research team that looked at innovative ways that neighborhoods and communities in the Twin Cities Metropolitan Area could make connections to and access the Mississippi River waterfront.

**Todd Wichman, FASLA, PLA**
Todd has more than 30 years of experience in landscape architecture, with diverse planning and design experience in both the public and private sectors. His recent experience with Stantec includes riverfront trail and greenway redevelopment on the Wisconsin River in the City of Wausau, WI, which is currently under construction; project landscape architect for riverfront recreation and access amenities for a federally and state funded bridge and river crossing on the Missouri River in South Dakota for the cities of Pierre and Fort Pierre; project landscape architect for a downtown Streetscape and Urban Design Plan update for the City of St. Cloud, MN; and project landscape architect for two new State of Minnesota Veterans Cemeteries. Todd is also highly experienced in recreational sports facility projects and has designed multiple sports and athletic related projects in public facilities in MN and WI.
Allyson Czechowicz, ASLA, PLA
As an undergraduate, Allyson pursued her interest in biology at Luther College, Decorah, IA where she studied Iowa’s driftless ecologies including native and restored prairies, ponds, and woodlands. She spent her summers serving as the environmental educator for a 550-acre camp in SW Wisconsin, where she communicated the curiosities and beauties of our wild spaces to students ages 5-18 and led groups in week-long paddling trips down the Kickapoo River. Realizing that where ecology intersected with community was where she was most passionate, Allyson earned her MLA from the University of MINN, with which she now contributes to projects in riverfront trail & greenways and parks & open spaces. She led the trail design and landscape plan for a 15-acre riverfront park on the Wisconsin River in Wausau, Wisconsin and is currently working on the master plan for a 40-acre park in South Minneapolis.

Jim Pease, PhD
Dr. Pease has over 40 years of experience as an interpreter, writer and consultant on interpretive and environmental education and curriculum projects. He has taught thousands internationally, written publications and communicated through radio, TV, podcasts, and websites. Pease founded and directed both the Iowa NatureMapping Program and the Iowa Master Conservationist Program, nationally recognized programs that educate the public on biodiversity, wildlife habitat, and wildlife management. In addition, he designed and coordinated the Master River Stewards Program, a program training citizens in river conservation and stewardship. See project examples on page 19. He has received numerous awards for his work, including the prestigious Master Interpreter from the National Association for Interpretation.

Craig Erickson, PLA
Craig’s strengths lie in all things “design.” He is a perennial student whether it be modern architecture or photography. He fosters genuine collaboration among project team members and stakeholders and is often involved in projects beyond landscape architecture due to his strong ability to facilitate healthy design-based discussions.

Craig brings a wealth of experience in the planning and design of parks and recreation facilities, transportation projects, trails and pedestrian environments along with community identity improvements. He also has a great deal of experience in the planning and design of commercial development and redevelopment projects. As Chairman of the West Des Moines Planning and Zoning Commission, Craig has key insight into the day to day issues involved in community planning, regulation and economic development.

Stacey Parks
Stacey has been assisting clients with permitting and environmental projects since 2000, focusing on Iowa, Illinois, and the Midwest. Stacey’s experience includes wetland investigations and Section 404 (Clean Water Act) permitting, federal, state and county permitting, National Pollution Discharge Elimination System (NPDES) permit applications, preparation of National Environmental Policy Act (NEPA) documents, wetland mitigation and monitoring, Endangered Species Act (ESA) Section 7 and Section 10 consultation including the preparation of Biological Assessments, threatened and endangered species surveys, Indiana bat studies, and habitat assessments. She led the preparation of the programmatic NEPA document in support of the Des Moines Levee System Improvements and is therefore already familiar with the environmental features in this area.
QUALIFICATIONS OF PROJECT STAFFING AND ORGANIZATION

Terry VanDeWalle
Terry is a Principal Scientist with over 25 years of experience specializing in animal and natural areas surveys, herpetology, threatened and endangered species surveys, ESA Section 7 and Section 10 consultation, wetland delineation and permitting, wetland mitigation design and monitoring, and coordination of environmental impact statements and assessments. He specializes in herpetology and is a recognized expert in the Midwest as author and co-author of peer-reviewed papers and regional herpetological guides. He’s also been involved with wildlife rehabilitation in the Midwest for over 20 years and currently serves on the Board of Directors of the Iowa Wildlife Center and is an Adjunct Professor at Hawkeye Community College where he teaches a course on Wildlife Ecology.

Cody Fleece
Cody has 24 years of experience in the field of aquatic ecology and has consulted for state, federal, and local governments, hydroelectric utilities, shellfish growers, watershed planning groups, military installations, and non-governmental organizations. In recent years Cody’s work has focused on ecological assessment, regulatory compliance and permitting, ecological restoration, and adaptive management. He is also authorized by the Federal government to survey for Federally listed fish and freshwater mussels. For this Project, Cody will provide expertise on all biological aspects of the river system concepts and associated permitting.

Paul Bockenstedt
Paul is an Ecologist working in natural resources since 1983 with 34 years of experience in restoration ecology for design/build restoration and mitigation projects covering thousands of acres in the region. He is involved in local, regional and statewide environmental review and natural resource planning. Paul has conducted natural areas inventory, rare plant searches, wetland Function & Values Assessment and land cover mapping on over 2 million acres of land in the past two decades. He has developed over 250 site-specific Natural Resource Management & Restoration Plans for state, local and private conservation lands. He currently manages a restoration team serving a three-state area in the Midwest, including Iowa. Paul works with city park departments to develop comprehensive natural resources planning and implementation programs. He has written over $6 million in successful grants to help parks departments protect, plan for and conduct on-the-ground management of natural areas.

Mike Flattery
Mike has over 35 years of professional experience in an array of public improvement projects from planning through construction. His recent responsibilities include providing design direction, overall supervision and quality assurance for complex, large-scale projects involving federal funding and specialized teams. His experience on the City of Des Moines Principal Riverwalk Improvements will provide invaluable insight into the feasibility evaluations and funding strategy assessments. Mike will not only lead the funding strategy effort for this project, but will provide quality control reviews of the project throughout.

Josh Human
Josh’s expertise lies in the fields of resilience planning, grant attainment assistance, and community engagement. He has an excellent track record of building relationships and securing funding with multiple agencies (FEMA, HUD, EDA, EPA, DHS, USGS, and State/local/university/business partners). Josh will support the project team in evaluation of funding opportunities for this project.
CAPACITY & TIMELINE

5th Avenue Dam Removal and Olentangy River Restoration in Columbus, Ohio
CAPACITY

Because we recognize the importance of gauging current and anticipated workloads, our systems allow us to project a clear picture so we can realistically forecast staffing needs. When a project requires specific expertise, we pick and match the right people for each team, just as we’ve done for the Downtown Water Trails project. We’ve combined industry expertise with local knowledge of the Des Moines area to deliver the DMAMPO a custom solution required for the successful completion of the engineering study. Below is an illustration of our teams’ current commitments and availability to deliver your project by the end of the year. Our project manager and task leaders are committed to the success of this project and have confirmed the availability of key team members. The availability* shown below is more than sufficient to complete the scope of work outlined by the DMAMPO. Additional details regarding specific team member availability can be provided upon request.


19K+ hours available for this project
Projects currently under contract involving key personnel

- Des Moines Levee System Improvements
- Des Moines Federal Courthouse
- Iowa River Restoration Toolbox
- Terminal Programming Study at Des Moines Regional Airport
- Bismark-Mandan Bicycle/Pedestrian Plan
- City of Oakdale Comprehensive Plan
- City of Moorhead Areawide Urban Review
- Six-Mile Dam Removal
- Roseville Parks - Natural Resources Management
- PLACE Mixed Use Development (Planning)
- Wausau Riverfront
- Cascade Lake Park Design and Implementation
- New Hope Civic Center Park

TIMELINE

The schedule represented below is an estimate based on our past work on similar projects and the completion date presented in your RFQ. We understand that variances can occur and look forward to working with you as we craft our proposal for services as a next step. We promise to communicate and work with you from project kickoff to final plan to deliver the quality project you envision for the people of your community.