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March 18, 2020

City of Aurora
Office of the City Clerk
44 E. Downer Place
Aurora, IL 60507

RE: **Statement of Qualifications (SOQ) No. RFQ 20-22; Fox River West Dam and Canoe Chute Inspection and Repair Design**

Dear City of Aurora QBS Staff:

Keeping the City's goals in mind for the **City of Aurora RFQ 20-22: Fox River West Dam and Canoe Chute Inspection and Repair Design** you can be confident RS&H has assembled a team with the expertise and experience to exceed the City's requirements and expectations. The material in this response demonstrates the strength of our team to navigate the unique challenges of dam infrastructure so the City can continue with its track record of successful stewardship. The individuals on this team have worked successfully on vital downtown infrastructure rehabilitation projects involving dams and water impoundments, which bring together the built environment along a river system. Our team brings dedication, professionalism, responsiveness, and a proven ability to anticipate potential roadblocks. Our local experience with the challenges of working with dams will be a benefit to the City and the success of this project.

RS&H serves Kane County from our office located in the City of St. Charles, Illinois, with a staff of 28 engineers, architects, technicians, and support staff. Our staff for this project is based out of St. Charles, but our use of technology tends to make the office geography less relevant companywide, allowing us to draw on best practices throughout the country. The firm, which began in 1941, now includes 50 offices nationwide, including two in Northeastern Illinois. Our greatest asset is our employees who number 1,380 professionals overall. You can rely on RS&H to bring imagination, ingenuity, and innovation. As an employee-owned firm, we are wholly committed to bringing extraordinary solutions to our clients.

RELEVANT TEAM IDOT PREQUALIFICATIONS	
RS&H	Hydraulic Reports - Waterways: Complex
	Special Studies - Location Drainage
	Hydraulic Reports - Waterways: Typical
	Structures - Highway: Simple
	Structures - Highway: Typical
	Structures - Highway: Advanced Typical
	Structures - Highway: Complex
	Special Services - Construction Inspection
Collins	Hydraulic Reports - Waterways: Complex
	Structures - Highway: Advanced Typical
	Structures - Highway: Complex
	Special Studies - Location Drainage
	Special Services - Construction Inspection
Wang	Geotechical Services - Complex
	Geotech/Major Foundation
	Geotechical Services - Susurface Exploration

With our strategic partnership with **Wang Engineering, Inc. (Wang)**, an **MBE/DBE** for geotechnical/foundation design work and **Collins Engineers, Inc. (Collins)**, a **Veteran-Owned Business** for underwater inspections and bathymetry, we have all the local expertise necessary to provide the inspections and design services requested. The chart at the right indicates our IDOT prequalification categories that are relevant to this project. Our collective team's

experience with rehabilitating and permitting dams in Northeastern Illinois will help us deliver to the City a developed, cost effective, and permittable rehabilitation strategy. We are excited to meet the challenges of this opportunity and establish ourselves as one of your trusted advisors on hydraulic infrastructure.

Our prime contact for the project will be John Wills, PE, CPESC who will be Project Manager, however, I am also available as we provide an alternate point of contact for the City through the role I fill as our Project Officer. Should you have any questions or if you would like to discuss our qualifications and approach further, please contact either John Wills at 630-364-5219, or john.wills@rsandh.com or me at 630-364-5246 or james.shaw@rsandh.com.

Respectfully submitted,
RS&H, Inc.

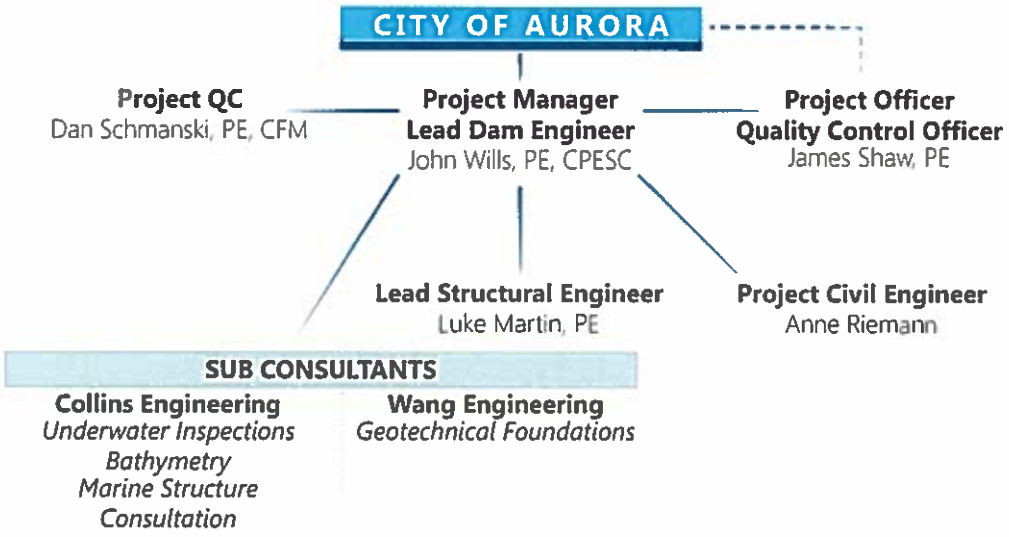
James Shaw, PE
Vice President

Fox River West Dam and Canoe Chute Inspection and Repair

OUR TEAM...COMMITTED AND EXPERIENCED PROFESSIONALS

(RFQ Requirement No. 5: Key Staff and Subconsultants)

The City's goals in this project are to gain the background data and Professional Engineering input required to develop a program whose long term objective is to rehabilitate and maintain an iconic feature of the Aurora downtown: the West Dam and Canoe Chute on the Fox River. RS&H has assembled the right mix of individuals from a number of disciplines and a variety of experience from local firms to walk alongside the City through any project challenges. We are a diverse team with **Wang Engineering, Inc.** who is a MBE/DBE and **Collins Engineers, Inc.** who are a veteran-owned. Aurora is a part of our community and we want to make sure that the dam and canoe chute continue to remain an icon that we all can enjoy. Our organization chart for this project helps illustrate how we will communicate as a team to the City to provide seamless and responsive service.



The discipline leads within the team are highly experienced. Abbreviated resumes are included for key individuals on this team.

Our **Lead Dam Engineer and Project Manager, John Wills, PE,** has more than 30 years of experience with the inspection, design, and permitting of projects involving dams. A sampling of notable recent projects in which John has played a significant role include:

- **North Batavia Dam on the Fox River - City of Batavia.** Dam inspections. 2016 and 2019.
- **Busse Reservoir South Dam Modification - Village of Elk Grove Village lead agency.** Design and permitting of Spillway modification adding crest gates for real-time control of discharge and reservoir levels. 2016.
- **Rasmussen Lake North Mill Creek Dam Modification Phase 1 - Lake County Forest Preserve District.** Inspection of dam, design, and permitting of Phase 1 dam modification to lower lake levels in preparation for dam removal. 2015.

- **North Aurora Dam Inspection - Fox Valley Park District.** Dam inspection and recommendations on runoff the river dam on the Fox river in North Aurora. 2014.
- **Armstrong Park Flood Control Reservoir - DuPage County.** Design and permitting of above ground earth embankment enclosed reservoir on poor soils classified as a Class 1 High Hazard dam. 2012.
- **Bower Elementary School Levee - DuPage County.** Oversight and review of plans, construction observation role as part of Kerr McGee West Branch of DuPage River Thorium Cleanup. 2012.
- **Warrenville Grove Dam removal West Branch DuPage River - Warrenville and DuPage County Forest Preserve County.** Dam inspections, design, and permitting of dam removal and restoration of river. 2008.
- **Patriot Parkway Dam - Village of Elburn Blackberry Creek Subdivision.** Design and permitting of Class 1 High Hazard dam with Labyrinth Weir spillway. 2004.

His expertise will anchor this team's efforts. At his previous employment, John's office in downtown Aurora overlooked the river and his lunchtime daily walks took him to the riverwalk along the canoe chute, adding to our team's familiarity with Aurora and the dam.

John will be involved in this project from beginning to end and will be the primary point of contact with the City.

Brian Dilworth, PE of Collins Engineers, Inc. will be our **Underwater Inspection Lead** for this project. Brian is a Civil/Structural Engineer with over 14 years of experience in the inspection, analysis, and design of steel, concrete, masonry, and timber structures. He has conducted over 1,000 inspections on various public and private sector structures nationwide. As part of these inspections, he has prepared detailed reports in which complete accounts of the existing conditions, accurate evaluations of the conditions, and detailed repair or replacement recommendations with associated costs have been provided. He is proficient in computer design and analysis software, including MicroStation, AutoCAD, HEC-RAS, and SAP2000.

Brian is a commercial and surface-supplied diver certified by the Association of Diving Contractors International (ADCI) and trained in accordance with OSHA Diving Standards on the use of tools, equipment, techniques, diving operations, and emergency procedures.

Brian is a trained instructor for the National Highway Institute (NHI) with experience in teaching courses in Underwater Bridge Inspection (Course 130091), and Underwater Bridge Repair, Rehabilitation, and Countermeasures (Course 130091B), and Inspection and Maintenance of Ancillary Highway Structures (Course 130087).

Luke Martin, PE, SE, our project team's **Lead Structural Engineer,** has a wealth of experience in the field review of concrete structures, primarily bridges and culverts, which will have direct application to this project. Luke has 15 years of experience in the planning, design, and inspection of bridges and culverts varying in complexity from simple through advanced typical and navigable river bridges. In 2019, he managed the inspection and reporting of more than 15 bridges and culverts for IDOT District One along IL-53 north of the Jane Addams Tollway. Luke is an NBIS Qualified Bridge Inspector and team leader.

Mickey Snider, PE, is our **Senior Geotechnical Engineer,** with 22 years of experience and works for **Wang Engineering, Inc.** He has served as consultant, design engineer, and research assistant on geotechnical engineering, municipal environmental management, and roadway engineering projects, including shallow foundations, pile and drilled shaft (deep) foundations, earth pressure and retaining walls, slope stability, settlement analyses, bridge abutments, and cofferdam analysis. He has extensive laboratory testing education and experience, including consolidated-undrained triaxial, one-dimensional consolidation, and direct shear testing. Mickey has carried out geotechnical field investigations, including the installation of driven piles, drilled shafts, and stone column ground improvements; research, instrumentation and analysis of geodynamic blasting and construction vibrations and structural response; environmental assessments; cost-effective management solutions; and general civil engineering design.

A TEAM TO BE CONFIDENT IN...WE ARE UP TO THE CHALLENGES

(RFQ Requirements No. 3 and 6: Relevant Experience and References)

The City of Aurora can rely on the RS&H lead team to identify and manage the range of tasks and milestones that need to be reached to accomplish your overall goal of the rehabilitation of this important and iconic feature of the Aurora downtown. We say that with confidence because those who make up our team have faced similar challenges before for clients, either at RS&H or in their career. Drawing on expertise throughout his career, the projects below highlight Project Manager John Wills, PE leadership experience and ability to assist the City in the completion of this project.

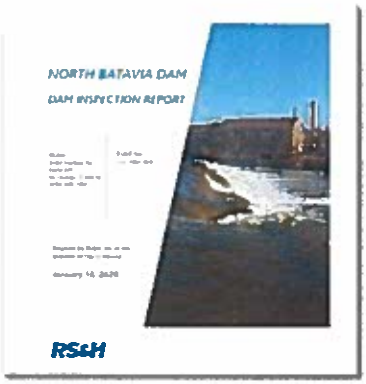
BUSSE WOODS RESERVOIR MAIN DAM MODIFICATION
SALT CREEK, COOK COUNTY

Modification of the main dam at **Busse Woods on Salt Creek** included a study of available gate structures and installation of two crest gates operating in real time on Salt Creek in the Busse Woods Preserve in Cook County. The modifications were built at a cost of $3.1M in phases to maintain flow and overcame the challenges of keeping an active waterway and flood control reservoir functioning during construction. Similar to the Aurora West Dam, which has been modified to accommodate and support the canoe chute, the Busse Woods project involved modifying and incorporating the original dam structure to accommodate the crest gates. The project was funded jointly by the Village of Elk Grove Village, MWRD, and DuPage County. For more information about the project and the role of PM John Wills contact **Mary Pye, PE, Director of Community Development, Village of Elk Grove Village, 847-357-4232, MPye@elkgrove.org**

Construction challenges were overcome at the Busse Woods dam modification.

NORTH BATAVIA DAM INSPECTION
FOX RIVER, KANE COUNTY

The run-of-the-river dams on the Fox River are very familiar to this project team. RS&H recently completed an inspection report on a **cousin of the Aurora Dam for the City of Batavia** in January of 2020 based on field work performed in early November of 2019. This is a continuation of over four years of work by John Wills, our team PM, to assist the City of Batavia in determining the extent and cost of repairs to the concrete ogee shaped run-of-the-river dam, similar to the Aurora dam. The extreme variations in flow experienced on the Fox River caused the team to adopt a flexible work plan rooted in close observation of current conditions.



Batavia Dam Inspection for Fox River Dam

Current Deterioration noted on the Batavia Dam

The most recent work involved an update to the dam inspection first performed in 2016, similar to what is requested as a starting point for these services. The inspection is part of the City of Batavia's ongoing planning for the dam rehabilitation, much as the City of Aurora is requesting, and will culminate in construction when the City's plans have matured. For more information on this project contact **Andrea Podraza, PE, Assistant City Engineer, 630-454-2757, apodraza@cityofbatavia.net.**

WEST BRANCH DUPAGE RIVER AND SPRING BROOK CREEK RESTORATIONS
DUPAGE RIVER, KANE COUNTY

Riffle structure on the west branch of the DuPage River designed for canoe and kayak passage

The canoe chute rehabilitation involves both structural and stream hydraulics when finding workable solutions. The RS&H team has been involved in stream mechanics challenges throughout their careers. As an example, John Wills, PE, led a team restoring the **West Branch of the DuPage River** after the cleanup of Thorium by the Kerr-Mcgee Corporation. That project afforded firsthand design/construction experience in the design and implementation of cross-stream hydraulic structures designed to accommodate a variety of flow conditions from very low to extreme flood, while providing habitat and safe passage of canoes/kayaks. This will be relevant to reviewing and recommending repairs on the canoe chute step pools. Lessons learned and principles applied carried forward into additional projects with the DuPage County Forest Preserve District involving stream restoration, with costs ranging from $1.6 to $7.1M. For more information on the projects and role of John Wills, PE, team PM, working with the DuPage County Forest Preserve District contact **Eric Neidy, Director of Natural Resources, 630-933-7675, eneidy@dupageforest.com.**

The subconsultants joining RS&H on this team also have a long and distinguished history working on the types of challenges likely to be identified for the West Aurora Dam and Canoe Chute project. Collins Engineers are experts in underwater inspections and have the equipment and experience, as well as a wealth of experience working with marine structures. They have performed annual inspections on the Kimball Street Dam on the Fox River for the City of Elgin, so they are very familiar with the flow regimes of the Fox River and will provide a safe plan to gain as much information as possible. They will have primary responsibility for underwater inspections to update current conditions along the canoe chute wingwalls and the dam, to the extent that it can be inspected safely given the flow regime. Wang Engineering has worked seamlessly with John Wills over the years, providing geotechnical analysis and input on foundation design, which may be required for any repairs to either seepage or concrete deterioration.

A TEAM WITH A PLAN...THE CORE OF A TECHNICAL APPROACH

(RFQ Requirement No. 4: Brief Technical Approach)

Our commitment to help the City meet its goals is reflected in bringing together the experience which allows our team to "hit the ground running" on this project. The RS&H team has reviewed the information provided in the RFQ, and made some firsthand observations of the dam. We have some initial thoughts on how to deliver to the City what they will need to identify the scope and funding required for the rehabilitation of the dam and canoe chute, as well as follow through to plans, specifications, estimates, and permits. Even after the "soft deliverables" the City's goals will not be fully realized until the necessary repairs are constructed. This final objective is kept in sight throughout the process.

The City is an integral player in the formulation of the final action plan, but the following is a starting framework for an approach. RS&H starts all projects by developing a Project Management Plan that addresses schedule, financial aspects, deliverables, and safety. A separate plan addressing our QC/QA program specifically tailored to the project is also an upfront task. Nothing leaves the office without strict adherence to these RS&H quality action plans.

Plan and available data review, bathymetric survey - The team will review all documents made available to us by the City, including prior surveys, and compile a base set of drawings that will be used to reference the field inspections and as a base to illustrate conceptual rehabilitation measures. We will make maximum use of previously performed ground based scanned survey. We will also utilize the expertise of Collins Engineers to perform a bathymetric survey of the Fox River channel upstream of the dam and adjacent to the canoe chute dividing wall. We will need that information to estimate any dewatering measures required for repairs. We will prepare this as a series of layers in GIS so that future inspections can also record observations in a running data-base.

Update inspection - The last year in particular has seen a high flow regime on the Fox River, and the winters in the prior two years were brutal on infrastructure in a water environment, so reviewing the conclusions of the previous inspection, both visible and underwater, is the logical starting point. We plan for a comprehensive review, however the problems noted in the prior inspection will get special attention, given the recent harsh conditions. Working around a water environment, particularly underwater, requires a high degree of safety planning. RS&H will take the lead on inspecting the visible structures with the support of Wang Engineering, and Collins Engineers will develop an underwater inspection plan for the dividing wall of the canoe chute, approaching the dam to the extent safety allows. Visibility underwater becomes very limited due to in-stream algae in the summer months, so performing the underwater portion of the inspection as soon as safely possible will yield somewhat better results.

Repair and rehabilitation recommendations - Based on the review of the previous inspection report provided with the RFQ and casual observation walking the Riverwalk, it is likely these will focus on varying levels of surface repairs of concrete surfaces. Based on anecdotal reports of seepage, the team will also need to develop a strategy to reduce the risk of undermining. We will prepare concepts for repairs and develop concept level opinions of costs for recommendations as well. We will also assist the City in the presentation of results to prioritize funding.

Inspection report - We will summarize the findings of the inspection report, including filling out the IDNR Dam Inspection forms, and summarize our findings, recommendations, and opinions of cost in a summary report.

Plans, specifications, and estimates - Working closely to help the City achieve its objectives while maintaining its high reputation for good fiscal management will dictate how the project proceeds to the plans and permits stage, and the RS&H team has a reputation for delivering so our clients meet their goals. We have a couple of technological tools, including 3D modeling in Cadd Software, that will aid with plan

preparation and design that will help provide excellent communication to the construction contractors, if warranted by the scope of the planned rehabilitation. 2D hydraulic modeling of the canoe chute under a variety of flow regimes will help identify shear "hotspots" and help asses the ability for canoes/kayaks to navigate the channel if more extensive modifications or repairs are required.

Permitting - Repair and rehabilitation projects on dams often minimize or overlook required permitting, and at RS&H we have found that early communication with resource and permitting agencies saves time and expense later in a project. While we do not expect a complicated permitting process, the form and requirements of permits will be dependent on the rehabilitation strategy and construction approach.

Communication with the City and any other stakeholders - We identify communication as a top priority for those to whom we provide service. It is a part of our project management plan and ingrained in the DNA of RS&H that "surprise" is never a word that should be used in the context of engineering services.

We hope this proposal demonstrates our firms' and referenced professionals' commitment to the City of Aurora to provide the services requested. We have a dedicated, professional, responsive, and capable team ready to begin working on this project from beginning to successful completion.