



Memorandum

To: Mayor Nelson and Members of the City Council

From: Daniel R. Buchholtz, MMC, Administrator, Clerk/Treasurer
Terry Randall, Public Works Director

Date: January 2, 2020

Subject: Arthur Street WTP Engineering Services

The City solicited proposals for the Arthur Street Water Treatment Plant (WTP) repairs from two firms: Stantec and Short Elliott Hendrickson (SEH). The City evaluated the two proposals to ensure they had a good understanding of the project. The outcome of the solicitations was as follows:

Stantec	\$88,604
SEH	\$66,400

Staff is recommending awarding the engineering work for the Arthur Street Water Treatment Plant repairs to SEH in a not to exceed amount of \$66,400.

Copies of the proposals are included with this memorandum for your review.

If you have any questions, please don't hesitate to contact either Public Works Director Terry Randall or I at 763-784-6491.



Building a Better World
for All of Us®

December 8, 2019

RE: Professional Services Proposal
Arthur Street WTP Repairs
City of Spring Lake Park

Daniel Buchholtz, MMC
Administrator, Clerk/Treasurer
City of Spring Lake Park
1301 81st Ave NE
Spring Lake Park, MN 55432

Dear Mr. Buchholtz:

The City of Spring Lake Park constructed the Arthur Street Water Treatment Plant (WTP) in 2003 to remove radium, iron, and manganese from Well 5. Recently, one or more chlorine gas leaks have caused corrosion on much of the interior equipment, surfaces, and infrastructure. This includes damage to paint (walls, filter, piping), electrical equipment, mechanical equipment, and doors and windows. In addition to damage from the chlorine leaks, the Arthur Street WTP has experienced normal age related deterioration. Because the damage from the chlorine leaks will be included as part of an insurance claim, these items need to be identified separately from the age related repairs in the bidding documents.

The City of Spring Lake Park is seeking professional engineering proposals for the design and construction administration of the Arthur Street WTP repairs. To that end, Short Elliott Hendrickson Inc. (SEH) offers a team of professional engineers that includes the project manager and process engineer from the original Arthur Street WTP project (Christopher Larson, PE).

PROJECT APPROACH

This technical proposal provides our team's assessment of the project needs and the level of effort required to complete the Study.

The following tasks summarize the proposed Scope of Work:

- 0) Project Management
 - a) Team Meetings - Hold regular team meetings with the City and SEH to evaluate options and review progress
 - b) Provide weekly project updates including schedule and budget
 - c) QA/QC - Provide an independent QA/QC review of all submittals by a senior water engineer (Miles Jensen, PE).
- 1) Phase One – Design and Permitting
 - a) Conduct an evaluation of the Arthur St. WTP with City Staff to assess items to be repaired. This evaluation shall include the following disciplines:
 - a. Architecture (paint, doors, windows, caulking)

Engineers | Architects | Planners | Scientists

Short Elliott Hendrickson Inc., 3535 Vadnais Center Drive, St. Paul, MN 55110-3507

SEH is 100% employee-owned | sehinc.com | 651.490.2000 | 800.325.2055 | 888.908.8166 fax

- b. Process (pumps, filters, chemical feed, air compressor, etc.)
 - c. Mechanical (heaters, ventilation, dehumidifier, plumbing)
 - d. Electrical (motor control center, breakers, wiring, instrumentation)
 - b) Complete design in accordance with the League of Minnesota Cities Insurance Trust (LMCIT).
 - c) Separate repair items into chlorine leak related items and non-chlorine leak related items
 - d) Prepare preliminary design documents
 - e) Prepare preliminary cost estimates
 - f) Review preliminary design documents and cost estimates with City Staff
 - g) Prepare final design documents
 - h) Prepare final cost estimate
 - i) Perform constructability review with water treatment plant contractor
 - j) Review plans with City Building Official
 - k) Submit plans to Minnesota Department of Health for review
 - l) Advertise project for bidding
 - m) Respond to Contractor questions during bidding
 - n) Attend bid opening and analyze bid results
- 2) Phase Two – Construction Administration and Inspection
- a) Review Contractor bids and make recommendation in accordance with LMCIT and City requirements
 - b) Hold pre-construction meeting and bi-weekly construction progress meetings at City Hall. Prepare meeting agendas and minutes.
 - c) Review Contractor payment applications
 - d) Review Contractor schedules
 - e) Review shop drawings
 - f) Review O&M manuals
 - g) Respond to Contractor requests for information (RFIs)
 - h) Prepare change orders
 - i) Perform on-site construction inspection. Prepare inspection reports. The fee proposal assumes 120 hours of on-site inspection.
 - j) Prepare punch list
 - k) Perform final inspection
 - l) Prepare closeout documentation

PROJECT TEAM

We have assembled an SEH project team with extensive water treatment plant design and construction experience. SEH proposes the following team:

Christopher Larson, PE, Project Manger

Chris is a civil and environmental project manager/engineer with 24 years of experience in development, design, construction and management of a wide variety of projects. He has been the project manager and design engineer on more than a dozen water treatment plant projects in Minnesota, including the Spring Lake Park Terrace Park and Arthur Street water plants in 2003. His experience covers pilot studies and testing, preliminary engineering studies, design, construction administration, project management and startup and training for water treatment and supply projects. Chris has also provided facility planning, design and construction administration of major sanitary sewer interceptors. He serves as the engineer for the Joint Powers Water Board of St. Michael, Albertville and Hanover, overseeing all of the engineering aspects of a water utility.

Miles Jensen, PE, QA/QC

Miles is a senior project manager with over 34 years of engineering experience as a project manager, client service manager and water discipline leader. He currently leads SEH's Drinking Water Group, and specializes in the design and construction of water treatment plants; specifically advanced water treatment facility process design, construction management, and plant start-up.

Miles has experience with more than 80 water treatment design and construction projects, including the award-winning plant in Marshfield, Wisconsin, the 30 mgd facility in Maple Grove, Minnesota, and the nationally recognized North Station facility in South Bend, Indiana.

Simon McCormack, PE, Project Engineer

Simon is a professional engineer with in-depth knowledge of water system engineering from design to operation. He is well-informed about the Safe Drinking Water Act, Minnesota Plumbing Code, Minnesota Well Code and procedures for enforcing these standards. Prior to joining SEH, Simon was an engineer with the Minnesota Department of Health where he was responsible for sanitary surveys, sampling and water system bacteriological investigations for community water systems.

Chad Westbrook, PE, Electrical Engineer

Chad is an electrical engineer with more than 24 years of experience that includes preparation of studies, construction drawings and construction administration. He has worked on numerous water treatment plant projects including Cloquet WTP No. 1, Faribault WTP, Gibbon WTP, Champlin WTP, Winona Johnson St. WTP, and the Crozet VA WTP. Chad has prepared construction drawings and specifications and provided construction administration through all project phases. The types of projects he has worked on include water treatment plants, wastewater treatment plants, boiler and chiller facilities, higher education facilities, industrial facilities, water and wastewater treatment facilities, SCADA and public works buildings. Chad's technical experience includes facility power distribution and generation systems; facility and outdoor lighting; fire alarm detection and notification; communication systems; and security systems.

Nick Brula, PE, Mechanical Engineer

Nick has more than 15 years of experience in the mechanical and construction engineering field. He has worked on numerous water treatment plant projects including the Minnetristra North and South WTPs, Cloquet WTP No. 1, Faribault WTP, Savage WTP, Crozet VA WTP, and Hudson WTP 10. He is experienced in every phase of HVAC project development, including initial cost estimation, facility analysis, system design and construction administration. Nick has helped design and oversee the construction of several industrial HVAC projects, including chiller replacements, boiler upgrade and replacements, constant volume and VAV systems, variable refrigerant flow systems, water and wastewater treatment facilities and plumbing upgrades. He is proficient in load calculation and modeling programs such as Carrier HAP and Trane Trace 700 as well as AutoCAD and Revit MEP.

Scott Blank, AIA, Architect

Scott is an architect/project manager with extensive experience in architectural leadership roles and management, and is an accomplished design professional specializing in national scale projects. He has worked on numerous water treatment plant projects including the Minnetristra North and South WTPs, Cloquet WTP No. 1, Faribault WTP, Savage WTP, Crozet VA WTP, and Hudson WTP 10. Scott is skilled at identifying process improvements to drive architecture/engineering best practices that result in project cost savings and execution efficiency and is well versed in all aspects of the project process. He is a creative thinker who looks for innovative solutions in addressing project and business challenges. Scott remains customer-focused, while providing best-in-class professional design services to multiple client workstreams.

REFERENCE PROJECTS

A list of recent water treatment plant projects performed by SEH including client references are attached to this proposal.

FEE PROPOSAL

The SEH Fee Proposal is included as a separate document.

SCHEDULE

SEH proposes the following schedule:

	Completion Date	Deliverables
Project Management	Ongoing	Progress Reports, Meeting Minutes, QA/QC Comments
Phase One – Design and Permitting		
Kickoff Meeting	January 13, 2020	Meeting Minutes
WTP Evaluation	January 31, 2020	List of Items Chlorine Leak and Non-Chlorine Leak Items to be Repaired
Preliminary Design Documents	February 17, 2020	Preliminary Plans and Specifications
Preliminary Cost Estimate	February 17, 2020	Preliminary Cost Estimate
Review Preliminary Design with City Staff	February 21, 2020	Meeting Minutes
Final Design Documents	March 16, 2020	Final Plans and Specifications
Final Cost Estimate	March 16, 2020	Final Cost Estimate
Review Final Design with City Staff	March 20, 2020	Meeting Minutes
Minnesota Department of Health Review	March 31, 2020	MDH Review Comments
Issue Advertisement for Bids	April 6, 2020	Ad for Bids
Phase Two – Design and Permitting		
Bid Opening	April 30, 2020	Bid Recommendation
Pre-Construction Meeting	May 25, 2020	Meeting Minutes
Construction Begins	June 1, 2020	
Bi-weekly Construction Meetings	Ongoing	Meeting Minutes
Shop Drawings	July 31, 2020	Copies of Submittals
Substantial Completion	October 31, 2020	Inspection Notes, RFIs
Punchlist Walkthrough	November 4, 2020	Punchlist
Final Completion	November 30, 2020	Certificate of Final Completion
Closeout Documentation	December 15, 2020	Record Plans, Lien Waivers, Consent of Surety

The schedule shall be flexible and relies on timely input from stakeholders.

Daniel Buchholtz, MMC
December 7, 2019
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SUMMARY

On behalf of the SEH team I want to thank you for providing us the opportunity to participate in this very exciting project. Our firm is committed to providing quality services and meeting the expectations of the City of Spring Lake Park.

If you have any questions about our approach and estimate of effort, please do not hesitate to contact me at 651.765.2961.

Sincerely,
SHORT ELLIOTT HENDRICKSON INC.

A handwritten signature in black ink that reads "Chris Larson". The signature is written in a cursive, flowing style.

Christopher Larson, PE
Project Manager

Attachment: Project References

References

The following pages highlight our relevant project experience in designing WTPs, wells, water mains and water storage tanks. During these projects, our team identified solutions that were feasible, energy efficient, cost-effective, right-sized and in the client's best interest. But, don't take our word for it. We encourage you to contact our project references to discuss our performance on each of these water systems improvement projects.

Feasibility Study and Design

CITY OF FARIBAULT, MINNESOTA



The City of Faribault has five water supply wells with elevated concentrations of iron. The City of Faribault recently had to replace all of its residential flow meters due to iron buildup. In addition to water quality concerns, some of Faribault's water infrastructure is old and in need of replacement including a 2 MG concrete reservoir constructed in the 1920s and a pumping station constructed in the 1930s.

In 2015, to assess the existing infrastructure and to evaluate options for removing iron from their drinking water, the City of Faribault hired SEH to prepare a WTP feasibility report. The feasibility report identified that a pressure filter treatment plant would be a better option for Faribault due to high groundwater at the site and cost considerations. In 2018, SEH performed the detailed design of the WTP. The project included design of a cost-effective 8 mgd horizontal pressure filter treatment plant. The design includes demolishing the existing 2 MG reservoir and increasing the pressures of the 5 existing wells. This design provides a more efficient and operator friendly process. The WTP is currently under construction.

SEH TEAM

Chris Larson |
Project Manager
Miles Jensen | QA/QC
Brad Weiss | Process
Mike Hemstad | Structural
Nick Brula | Mechanical
Chad Westbrook | Electrical

REFERENCE

Travis Block
Public Works Director
507.333.0365

Water Treatment Plant No. 10

CITY OF HUDSON, WISCONSIN



The City of Hudson drilled Well No. 10 in 2007 and had a WTP designed and issued for bidding. Due to a declining economy and bids that were higher than desired, the City of Hudson decided not to construct a WTP at that time.

In 2016, water demands in the City were high enough that adding a pumping facility and WTP at Well 10 was warranted. The City hired SEH to perform Value Engineering on the previous design and come up with a project that met their needs and was cost-effective. To that end, SEH designed a treatment and pumping facility that includes a single pressure filter for iron removal, chemical rooms, and control room. A natural gas standby generator was included to ensure the facility would be available when needed.

This cost-effective design is expected to save the City more than \$1 million as opposed to the project that was built in 2007.

SEH TEAM

Chris Larson |
Project Manager
Miles Jensen | QA/QC
Scott Blank | Architect
Nick Brula | Mechanical

REFERENCE

Kip Peters
Utility Director
715.386.4765

Water Treatment Plant No. 1

CITY OF CLOQUET, MINNESOTA



The City of Cloquet has manganese in its Well 8 that exceeds the Minnesota Department of Health's (MDH) recommendations. The City also utilizes a natural spring for a portion of its drinking water. The spring is currently classified as groundwater, but if it is determined that the spring is under the influence of surface water, Cloquet would need to treat this water or quit using it.

The City of Cloquet hired SEH to design a WTP to remove the manganese from Well 8. The schedule for the project was extremely tight due to funding deadlines. In three months, SEH needed to prepare a feasibility study to determine the correct solutions and then do a full design of a WTP. SEH investigated three WTP sites and two treatment options (steel gravity and concrete gravity). The solution selected was a 1,000 gpm concrete gravity filter treatment plant at Cloquet's Public Works site.

The WTP processes include detention, dual media filtration, chemical feeds, a concrete clearwell and high-service pumping. The WTP also includes surface water treatment features, including filter to waste piping and valves, if it becomes necessary to treat water from the Spring Lake Reservoir. The WTP is currently under construction, with an expected completion date of October 2019.

SEH TEAM

Chris Larson |
Project Manager
Miles Jensen | Sr.
Project Engineer
Brad Weiss | Process
Mike Hemstad | Structural
Nick Brula | Mechanical
Chad Westbrook | Electrical

REFERENCE

Caleb Peterson, PE
Public Works Director
218.879.6758

Water Treatment Facility and Well

STILLWATER, MINNESOTA



Minnesota Correctional Facility (MCF) Stillwater had a failing water treatment system and two multi-aquifer wells that did not meet the well code. The State of Minnesota chose SEH to design a new 1.0 mgd steel gravity water treatment facility and a new well. The project included abandoning an existing well inside the secure perimeter, extending the casing on an existing well to draw water from only one aquifer and drilling a new Mt. Simon well. The project also included construction of a new ion-exchange softening WTP.

The plant includes aeration, steel gravity filtration, ion-exchange water softening and a backwash reclaim basin. MCF Stillwater houses 1,600 offenders and water service must be continuously maintained. SEH developed a phasing schedule to allow commissioning of the new facilities and demolition of existing facilities, while continually maintaining water service.

SEH TEAM

Chris Larson |
Project Manager
Miles Jensen | QA/QC

REFERENCE

Ryan Allen
Project Manager
651.201.2392

Water Treatment Plant

CITY OF APPLE VALLEY, MINNESOTA



Over the past 28 years, SEH team members have worked with the City of Apple Valley on their water treatment facility needs. Beginning in 1988, Miles Jensen delivered design and construction engineering services for the 12 mgd iron and manganese removal WTP. In 1998, Miles served as project manager for an automated filter bypass that extended capacity of the facility to 17.5 mgd with blending. He also worked with the City on several miscellaneous projects and investigations related to their WTP since its construction.

Miles was the program manager and Chris Larson the design engineer providing planning, design and construction services required to expand this iron and manganese removal plant to 24 mgd. Improvements include the addition of four concrete gravity filter with 6.5 mgd filtration capacity, two additional backwash tanks, upgrades to the existing filters and inlet distributors, adding a 15,000 sq. ft. utility garage and shop and a municipal car wash. Remodeling and upgrades to the existing WTP and offices were also included.

SEH TEAM

Miles Jensen |
Project Manager
Chris Larson | Sr.
Project Engineer

REFERENCE

Carol Blommel Johnson
Utilities Superintendent
952.953.2441

Water Treatment Facility Renovations

CITY OF EAU CLAIRE, WISCONSIN



In 2014, SEH completed a comprehensive evaluation of Eau Claire's water treatment Facility. Since its initial construction in 1952 and the filter addition in 1955, this 20 mgd plant has received only minor improvements in its long service life. Serving as the lead process engineer for the evaluation, Miles Jensen utilized the services and skills of team members John Thom and Colin Fitzgerald to complete the evaluation project, which identified over \$11.8 million in plant improvement needs. The needs included such items as plate settlers for their clarifiers, a complete filter renovation, major motor control improvements, standby power generation and chemical feed enhancements.

This project, completed in fall of 2014, has formed the basis for a multi-year improvements program for the City. Currently, preliminary design on a \$3.4 million filter renovation is about to get underway.

SEH TEAM

Miles Jensen |
Project Manager
John Thom | Operations
Scott Blank | Architect
Brad Weiss | Process
Nick Brula | Mechanical
Mike Hemstad | Structural
Chad Westbrook | Electrical

REFERENCE

Tim Greene
Water Plant Supervisor
715.839.5045



Arthur Street Water Treatment Plant Repairs Project

CITY OF SPRING LAKE PARK
DECEMBER 9, 2019

PROPOSAL



Stantec Consulting Services Inc.

733 Marquette Avenue, Suite 1000 Minneapolis, Minnesota 55402-2309

December 9, 2019

Attn: Daniel Bucholtz, MMC
Administrator, Clerk/Treasurer
City of Spring Lake Park
1301 81st Ave NE
Spring Lake Park, MN 55432

Reference: Arthur Street Water Treatment Plant Repairs Project

Dear Daniel Bucholtz,

The chlorine leak at the City of Spring Lake Park's Arthur Street Plant is causing damage to the plant. Efforts to repair this damage are covered through the League of Minnesota Cities Insurance Trust (LMCIT). Our team is well-prepared to support the City on this project due to our previous experience at the plant, our history serving the City of Spring Lake Park, and our experience working with LMCIT on various water treatment projects ranging from filter media disruptions to chlorine damage repairs.

Our team has been working with the City of Spring Lake Park to conduct condition assessments and prepare preliminary cost estimates for the this project. We thoroughly understand the process of resolving claims in accordance with LMCIT requirements. This expertise has been demonstrated through our recent experience with a very similar chlorine damage repair project in the City of Benson. Now in the implementation phase, the work we completed in Benson enabled us to develop a strong understanding of LMCIT expectations related to contract language, the review process, the replacement requirements of like-kind materials, and added value and due diligence. Our role through this process will be to serve as a liaison between LMCIT and Spring Lake Park.

Our Minneapolis office has been designing water and wastewater treatment facilities for communities for more than six decades, and our local experience includes more than 50 water treatment plants. We bring the in-house expertise to provide the City of Spring Lake Park with local process, structural, electrical, mechanical, and civil engineers to complete this project. Thank you for considering Stantec for these critical improvements.

Sincerely,

STANTEC CONSULTING SERVICES INC.

Mark Rolfs, PE
Project Manager
(612) 712-2123
mark.rolfs@stantec.com

Phil Gravel, PE
City Engineer
(612) 712-2053
phil.gravel@stantec.com

Qualifications and Experience of Engineering Firm

Stantec unites 22,000 employees working in over 400 locations across six continents. We collaborate across disciplines and industries to bring buildings, energy and resource, environmental, water, and infrastructure projects to life. Our work—planning, engineering, architecture, surveying, environmental sciences, construction services, project management, and project economics, from initial project concept through design, construction, and commissioning, begins at the intersection of community, creativity, and client relationships.

With a long-term commitment to the people and places we serve, we have the unique ability to connect to projects on a personal level and advance the quality of life in your community.

Local Presence

Our firm has been serving communities in Minnesota since 1956. With offices in the Minneapolis, Rochester, and St. Cloud, we are well-positioned to provide responsive and efficient service. As active members of the communities we serve, we connect the people, places, and resources that take projects from concept to reality. In particular, Stantec has served the City of Spring Lake Park since 1956 and we are proud to call the City a client. Our experience includes the original design of the Arthur Street Water Treatment Plant in 2003.

Water Treatment

Stantec provides a team of process specialists to deliver solutions aimed at maintaining public water systems and providing safe drinking water to communities throughout North America.

As the global use of water increases, the availability decreases and drinking water regulations become more stringent, it is crucial that appropriate technology is applied to meet the needs of our clients.

Stantec has experience in providing all types of treatment including membranes, high rate filtration, advanced oxidation, biological filtration, ozone, and UV disinfection. We undertake advanced pilot studies and process modeling to arrive at the best solutions for our clients using a sustainable triple bottom line approach that addresses the social, economic, and environmental considerations of our technical decisions.

Whether it is a membrane or a conventional water treatment plant, Stantec has the expertise and experience to guide a project through every stage of its life cycle, from source water quality assessment, conceptual design, piloting, and design, through to construction, commissioning, and process optimization. We've included a couple recent examples of our related experience on the pages that follow.



**STANTEC RANKS #2 FOR INTERNATIONAL
DESIGN FIRMS IN WATER**

ENR, JULY 2018





Chlorine Damage Repairs at Water Treatment Plant No. 2

Benson, Minnesota



This work enabled us to develop a strong understanding of LMCIT expectations related to contract language, the review process, the replacement requirements of like-kind materials, and added value and due diligence.

The Benson WTP No. 2 was placed in service in June of 2012. Several years later one of the plastic fittings within the chlorine feed system cracked and allowed chlorinated water to be dispersed into the filter room. Over the course of time residual from the release caused significant damage to many of the surfaces in the WTP particularly those made of low-grade metals.

The City retained Stantec's multi-discipline team of engineers and architects to assess the facility from process, structural, mechanical, electrical and architectural perspectives. The objective was to identify materials that sustained significant damage from chlorine so that they could either be refurbished or replaced as necessary to restore reliability in the overall treatment operation.

Stantec worked with the League of Minnesota Cities Insurance Trust (LMCIT) to determine the scope for the project. Our team worked in collaboration with Crane Engineering who also performed an independent evaluation of the facility.

Upon reaching concurrence with LMCIT, we prepared construction documents and assisted the City of Benson with bidding services. The project is currently underway and will be completed while lower seasonal water demands allow critical work components to be replaced or refurbished as needed.



Water Treatment Plant Facility Plan and Phase 1 Improvements

Wahpeton, North Dakota

Like many Red River Valley communities, Wahpeton's groundwater supply contains high concentrations of iron, manganese, and calcium hardness. Constructed in 1975, the Wahpeton Water Treatment Plant (WTP) uses an excess lime softening process with a nominal capacity of 3 million gallons per day (mgd). The plant was expanded in 1993, with upgrades since then, but a lack of redundancy and several critical limitations meant flow could not be isolated to make needed improvements. Without increased capacity, the city's potential for economic growth is limited.



Key improvements expand treatment capacity and enhance operations

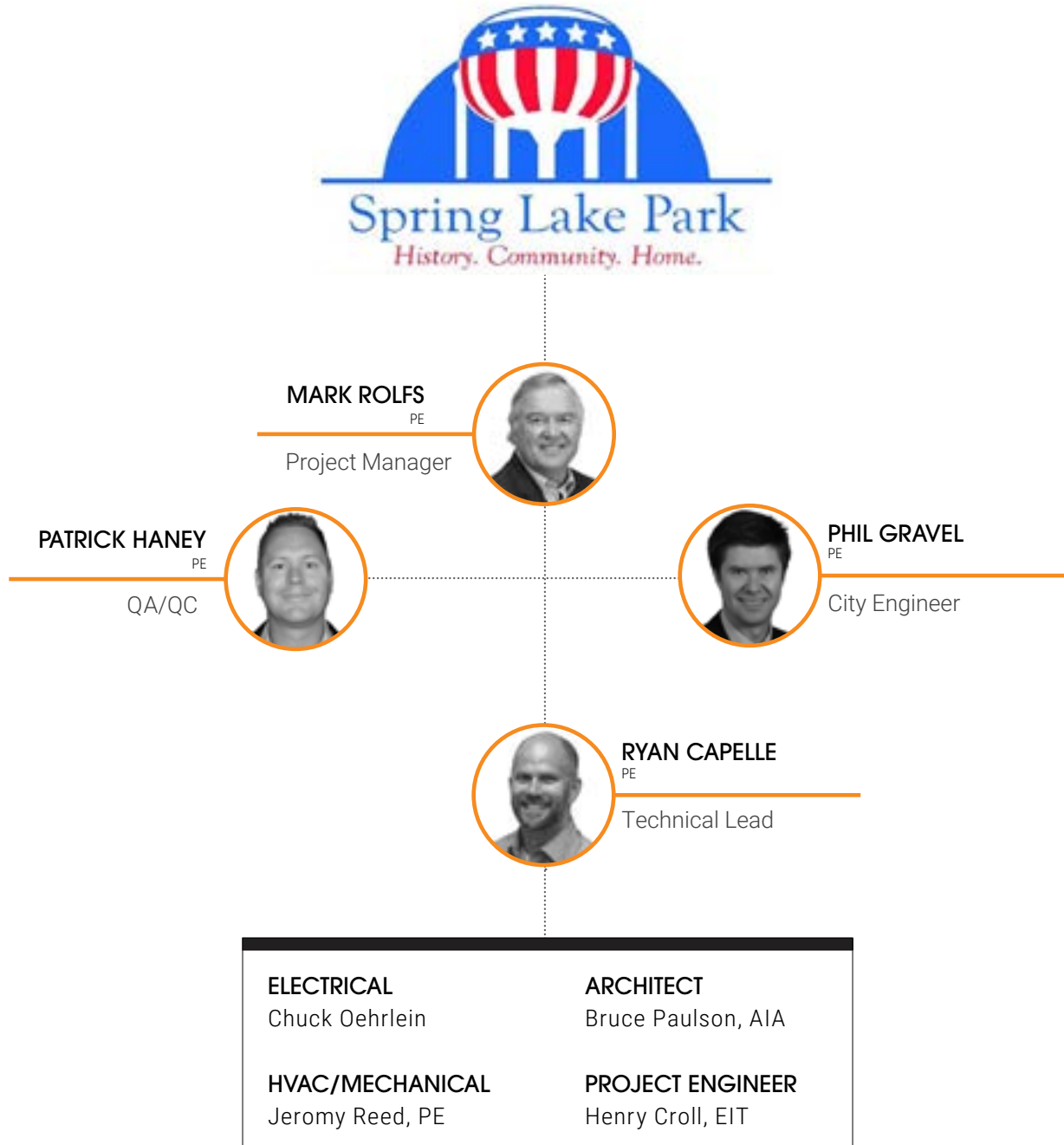
Stantec developed a long-range plan to get the facility on track with the redundancy needed for the capacity improvements. Our team evaluated the site, electrical/controls systems, and process, with careful attention to regulatory requirements and health, safety, and maintenance. The resulting Facility Plan identified three phases of improvements to eventually double the city's treatment capacity to 6 mgd. Our team is in the process of implementing the Phase I improvements.

Phase I prepares the plant for future redundancy and capacity improvements and includes replacing the raw water supply pipe from the wells, replacing essential lime feed equipment (including the bulk storage, slaking, and feed equipment), removal and replacement of the existing carbon dioxide system, and modifying the site to accommodate new equipment and improve truck access. Phase 2 will eventually provide needed redundancy and reliability improvements, and Phase 3 will expand treatment capacity. When complete, the plant will deliver improved service to its current residents and businesses and offer the needed capacity to welcome new growth.

Qualifications and Experience of Team

Organization Chart

What kind of team does it take to provide you with the right combination of enthusiasm, qualifications, and experience for this project? It takes a team that works together and is driven to achieve. At Stantec, we collaborate across disciplines and industries to bring projects to life. We are ready to be your project partner and meet your needs in a creative and personalized way.



Mark has 39 years of experience and is a leader in Stantec's water/wastewater group in Minneapolis. Mark's primary responsibilities include engineering for both water and wastewater. For water systems, he is proficient in hydraulic modeling analysis, wells, pumphouses, water booster pumping stations, and water storage reservoirs. He is skilled at using multiple software's to perform computer hydraulic analyses for water distribution systems, booster stations, and pumphouse designs. For wastewater, his primary focus is on the hydraulic performance of sanitary sewer lift stations and wastewater plant pump flows.

EDUCATION

Bachelor of Science, Civil Engineering, Iowa State University, Ames, Iowa, 1980

REGISTRATIONS

Professional Engineer #16722, State of Minnesota, 1984

Professional Engineer #24332, State of Iowa

MEMBERSHIPS

Member Representative, Society of American Military Engineers, Minneapolis-St. Paul Post

Member, American Water Works Association

Member, American Society of Civil Engineers

PROJECT EXPERIENCE

Water

Water Treatment Plant, Camp Ripley, Minnesota

Mark was the inspector on this project. This project consisted of a major renovation of the Camp Ripley Water Treatment Facility. The project included replacing the existing filters, pumps, piping and control panels with new equipment. The project also included upgrades to the existing building structure. The real challenge to this project was keeping a portion of the existing facility live during all phases of the equipment replacement.

Water Supply and Distribution Plan - Chaska, Minnesota

Mark has been the primary modeler for the City of Chaska's water system model for the past 23 years. He has used his modeling expertise on many occasions to analyze changes to the distribution system. Most recently, the routing of the new Highway 212 section through Chaska caused significant alterations to Chaska's trunk water system.

Pump Facility No. 6 & 7, Woodbury, Minnesota

Mark was project manager on these two projects. He managed and provided the well pump house design and construction services on these two Woodbury pump facilities.

Pump Station No. 4, Minneapolis, Minnesota

Mark was responsible for the hydraulic and mechanical design for all of the new pumps in this facility. The project involved renovating a 100-year-old, 70 mgd, 6,500 horsepower facility. Due to its age, numerous building and infrastructure conditions were disclosed that required re-engineering to sustain long-term remedies for the client. The project successfully extended the life of this important component of the Minneapolis Water System.

Mark R. Rolfs PE

Project Manager

Pumphouses and Water Booster Stations

In situations where demand stresses supply, Mark has developed solutions to address pressure deficiencies and pump stored water into the distribution system. In more than 20 communities, he has developed pump and control systems to provide a reliable supply of potable water.

Water Supply and Distribution Plan - Carver, Minnesota

Mark was project manager. He managed the hydraulic analysis and reports, and was responsible for the final review. Carver has experienced rapid growth and water needs will continue to increase as the City builds to an estimated 19,560 by 2030. This report designed a water system capable of serving the growing population. The major challenge was to lay out a system that could accommodate the projected 2030 maximum day water demand of 7.45 MGD.

Water Supply and Distribution Plan - Apple Valley, Minnesota

Mark was project manager. He managed the hydraulic analysis and reports, and was responsible for the final review. This water study done in 2002 analyzed the projected 2020 water demand for the City of Apple Valley. Estimations included a daily average of 9.1 MGD with an estimated daily maximum of 29.5 MGD. The proposed ultimate water system will be developed according to this plan and will include six new Jordan wells, one new 1.5 MGD elevated storage tank, approximately six miles of additional trunk water distribution mains, and one 12-MGD expansion to the City's existing water treatment plant.

Comprehensive Water Works Plan Update, Rockford, Minnesota

Mark was project manager. He managed the hydraulic analysis and reports, and was responsible for the final review. The report presents a comprehensive water works plan for the existing, near-term, and ultimate areas that can be served by the Kettenacker Well Field. The ultimate Kettenacker Well consists of one new well, a new 500,000 gallon elevated storage tank, a high-pressure zone, and approximately 4.5 miles of new trunk water main.

Rockford HPZ Booster Station

Mark served as project manager for this booster station controlled by hydropneumatic tanks. This project involved constructing a 24-foot by 22-foot masonry building, installing two split-case pumps, process piping and equipment, electrical controls, SCADA system, a valve manhole, and site work.

Water Storage Facilities

One of the most experienced water tower engineers in Minnesota, Mark has designed and inspected single pedestal tanks, legged tanks, standpipes, and ground storage reservoirs for more than 60 communities in Minnesota and Wisconsin. His designs take long-term operation and maintenance into account, while considering vandalism prevention, storage, and communication applications. Sizes range from 75,000-gallon tanks to 5,000,000-gallon reservoirs. He has also overseen the antenna installations and modifications on many of these tanks.

Patrick is a seasoned water professional whose care focus has been on planning, design, and construction water infrastructure for municipal clients. His experience, technical capabilities, and business knowledge help project team successfully deliver high quality sustainable design to owners. Patrick provides technical leadership and design development for water project, including water treatment plant process design, disinfection, storage, and conveyance.

EDUCATION

Master of Business Administration, International Business Emphasis, W.P. Carey School of Business, Arizona State University, Tempe, Arizona, 2009

Bachelor of Science, Civil Engineering, University of Nebraska, Lincoln, Nebraska, 2002

REGISTRATIONS

Professional Engineer #047763, Commonwealth of Virginia

Professional Engineer #54348, State of Minnesota

Professional Engineer #48571, State of Colorado

Professional Engineer #83895, State of California

Professional Engineer #45912, State of Arizona

PROJECT EXPERIENCE

Bellvue WTP Improvements Package B*, Greeley, Colorado

CMAR Design Manager responsible for the managing, developing the design, and providing QAQC of several process components for the new 20 MGD Plant Upgrade. This project includes the design of a new 20 MGD process train including new rapid mix basins, flocculation basins, sedimentation basins with inclined plate settlers, dual media filters, filter blowers, and significant site improvements. Patrick was responsible for coordinating design activities with CMAR contractor and construction phase Owner's Representative including project scheduling, constructability, GMP reviews, procurement, commissioning planning, and project phasing coordination. Additionally, Patrick managed and designed the early out civil/site pipeline package which included 48" through 60" steel water mains, miscellaneous yard piping, and large diameter isolation valve designs. Estimated Project Value \$26M.

* denotes projects completed with other firms

Union Hills Water Treatment Plant*, Phoenix, Arizona

Project Engineer in charge of designing several facilities required for the Granular Activated Carbon Implementation Design Project at the Union Hills Water Treatment Plant. Specific design responsibilities include a 160 MGD GAC Contactor Pump Station including GAC feed pumps, backwash pumps, a dedicated service water pump station, and hydro-pneumatic tank system. In addition, the project included the design of new Granular Activated Carbon (GAC) Contactors, Chlorine Dioxide Facility, and additional yard piping and grading modifications. The total estimated cost for the project is \$42 Million.

Loudoun Water Raw Water Intake and Potomac Raw Water Pumping Station*, Loudoun County, Virginia

Project Manager responsible for the ongoing design of a 40 MGD Raw Water Intake on the Potomac River, a 250 ft. tunnel, 125 ft. deep shaft, a Raw Water Pump Station, approximately ¼ mile of 42" Raw Water Transmission Main, and associated site upgrades. Specific project responsibilities include project management, project scoping, scheduling, fee development, budget management, resource management, technical management of all process mechanical activities, coordination of all design activities, quality assurance, construction scheduling, opinion of probable construction costs, and coordination of all QA/QC activities. Project included Asset Management hierarchy and submission requirements for the Loudoun Water Asset Management System. The total estimated construction cost is \$35 Million.

CAP Water Treatment Plant Expansion Project*, Scottsdale, Arizona

Engineer responsible for the design of a dissolved air flotation thickened sludge pump station and overall WTP site modifications. This portion of the design project was included as a change of scope and was completed in less than one month. The overall construction value for the entire project is \$80 Million.

Regional Water Purification Facility GMP Package No.1*, Rifle, Colorado

Project Manager responsible for the redesign of an 8 MGD WTP final disinfection, pumping, and site development GMP Package. This project was originally developed at another site. The redesign included resizing the Disinfection Contact Basin based on revised standards, redesigning the Finished Water Pump Station, a surge analysis of the pump station and pipeline, site development, planning for the design of the future GMP Package No. 2 including the main treatment facility, analyzing the hydraulics of the Raw Water Pump Station, and coordination with the design of the new solar drying beds.

* denotes projects completed with other firms

In his 22 years of providing engineering service, Mr. Capelle has developed the ability to effectively manage the design, planning, and implementation of municipal, water treatment, and water supply projects. Ryan has provided service on over 50 water treatment facilities and other water infrastructure projects during his career. Ryan is the water group leader in Stantec's Minneapolis office. Ryan's background includes a master's degree in Infrastructure Systems Engineering from the University of Minnesota, feasibility studies, funding applications, water treatment facility design, lift stations, wells, development reviews, and street/utility reconstruction. His unique range of project management, design and construction experience has enhanced his ability to provide quality designs that result in successful projects.

EDUCATION

Bachelor of Science, Civil Engineering, University of Minnesota, Minneapolis, Minnesota, 1998

Master of Science, Infrastructure Systems Engineering, University of Minnesota, Minneapolis, Minnesota, 2002

REGISTRATIONS

Professional Engineer #PE-10171, State of North Dakota

Professional Engineer #41310-6, State of Wisconsin, 2010

Professional Engineer #43142, State of Minnesota

MEMBERSHIPS

Member, American Water Works Association

Member, American Society of Civil Engineers

PROJECT EXPERIENCE

Water Treatment

Chlorine Damage Repairs at Water Treatment Plant No. 2, Benson, Minnesota

As project manager, Ryan worked with the League of Minnesota Cities Insurance Trust to determine scope for this project that addressed damage to the City's water treatment plant caused by chlorine. Stantec prepared construction documents and assisted the City with bidding services.

Arthur Street Water Treatment Plant (Well 5), Spring Lake Park, Minnesota

Ryan served as a project engineer for this water treatment plant that was constructed in 2003.

Interim Water Treatment Facilities, Cottage Grove, Minnesota

In 2017 the City of Cottage Grove was notified by the Minnesota Department of Health that 8 of its 11 wells were over the newly established health index values for perfluoroalkyl substances (PFAS). The response required the full attention of Stantec's multi-discipline team led by Ryan, working in unison with members from various departments of the City to deliver the project under emergency design/build conditions. The project was successful in delivering safe, compliant drinking water for residents within 84 days and was awarded the American Public Works Association (APWA) Project of the Year Award in 2017.

Stacy Water Treatment Plant, Stacy, Minnesota

Ryan served the City of Stacy as the project manager for a state of the art water treatment facility designed to reduce radium to drinking water standards. Ryan guided the City through the funding process and was able to secure the maximum grant to loan value through the USDA – Rural Development funding program for the City. The project included construction of a new well, demolition of an existing water tower, construction of the new Water Treatment Plant and modifications to the City Hall to attain ADA accessibility and compliance. The project was substantially completed in February 2018 and has successfully passed tests for Radium 226/228 with no detection.

Water Treatment Facility, Granite Falls, Minnesota (Project Manager)

During the design for this 0.84 mgd lime softening water treatment facility project, Ryan collaborated with City staff to incorporate their desired process and hydraulic design elements. Ryan worked with the City staff to deliver the construction phase of this project.

Water Treatment Plant Expansion, Inver Grove Heights, Minnesota (Project Manager)

The City of Inver Grove Heights chose Stantec to design and provide construction assistance of their 6.02 MGD manganese removal water treatment facility. Expansion adds two backwash tanks, four filter cells and laboratory, as well as additional accommodations for staff needs. Ryan served as the project manager, provided process design, construction management, and contract administration.

Water Treatment Facility, Albany, Minnesota (Project Engineer)

Ryan was responsible for process design. The Albany Water Treatment facility is designed to remove arsenic, iron and manganese at a peak flow rate of 2.0 million gallons per day (MGD). There is a 200,000 gallon clearwell for water storage built into this treatment plant. Currently, there are two 1,000 gpm pumps that serve the High Zone, and one 1,000 gpm pump to serve the Low Zone. This plant is expandable to a 4.0 MG capacity in the future when necessary.

SW Water Treatment Plant, Sartell, Minnesota (Project Engineer)

Ryan was responsible for process design of a new 6 MGD conventional gravity filter plant for iron and manganese removal. The plant was designed to be easily expanded to 16 MGD.

Water Treatment Facility, Cokato, Minnesota

Ryan was responsible for performing hydraulic design and writing process specifications. This project consisted of the construction of a new water treatment plant to meet demands for the removal of arsenic, iron, and manganese from the City's groundwater supply. Work included select demolition, excavation, dewatering, backfilling, grading, paving, concrete, masonry, process equipment, well work, interior and underground piping, painting, HVAC, plumbing, electrical, and correlated items.

Jeromy is a senior mechanical engineer with over 20 years of experience. He joined Stantec in 2011 and specializes in the design of mechanical systems including heating, ventilation, air conditioning, plumbing, and fire protection. His work experience spans all project phases from schematic design, design development, and detailed design through contract administration, substantial performance and reviews, and project closeout. Through his career, Jeromy has designed energy-efficient and cost-effective systems for a variety of facilities including schools, multi-family housing, office buildings, and water and waste treatment facilities. Jeromy excels at matching system functionality with the client's budget, desired technical sophistication, and energy conservation goals.

EDUCATION

Bachelor of Science, Mechanical Engineering,
University of Alaska, Fairbanks, Alaska, 1995

REGISTRATIONS

Professional Engineer #10176, State of Alaska

Professional Engineer #53856, State of Minnesota

Professional Engineer #24136, State of Iowa

Professional Engineer #PE-27131, State of North
Dakota

Professional Engineer #E-45580, State of
Wisconsin

MEMBERSHIPS

Member, American Society of Heating,
Refrigerating & Air-Conditioning Engineers

Member, American Society of Mechanical
Engineers

PROJECT EXPERIENCE

Water and Wastewater

Gilbert Wastewater Treatment, Gilbert, Minnesota

Jeromy was the mechanical engineer of record and responsible for the HVAC, plumbing, and fire protection design. He also provided construction support. The 60+ year old treatment facility was upgraded to include MBR (membrane bioreactor) treatment. The existing buildings were renovated for the upgraded process. New buildings in the project included the MBR building, office and laboratory space, and generator and equipment storage building.

Chisago Lakes Joint Collection and Treatment System Assessment, Chisago City, Minnesota

Jeromy evaluated the condition of the HVAC and plumbing equipment. Reported on remaining equipment life and necessary repairs, and provided a cost estimate and 10 year plan capital improvement plan. The system serves four communities. The facility included laboratory and office space, treatment buildings, chlorine storage, with a variety of makeup air units, furnaces, AC units, oil tanks, water heaters, and emergency fixtures.

Stacy Water Treatment Facility, Stacy, Minnesota

Jeromy provided construction support including reviewing shop drawings and field modifications.

Cottage Grove PFAS Filtration, Cottage Grove, Minnesota

Jeromy was the mechanical engineer of record for two filter buildings to house PFAS filtration for the municipal water system. Award: 2017 APWS Project of Year – Minnesota.

Jeromy Reed PE

Senior Mechanical Engineer

Clear Lake Well #3 and Pumphouse, Clear Lake Minnesota

Jeromy was the mechanical engineer of record. This project added a well, chlorine injection, chemical storage, and space for future water treatment equipment to the municipal water system.

Hastings Chlorine Disinfection Improvements, Hastings, Minnesota

Jeromy was the mechanical engineer of record. The project added chlorine storage and treatment to four wellhouses and the water treatment plant. Ventilation for the chlorine and chemical storage rooms was added or upgraded to current standards as required.

Unalaska Backflow, Unalaska, Alaska

Jeromy was the mechanical engineer of record. This project upgraded the water utility's backflow protection program by upgrading or installing DCBA or RPBA at 30 facilities, including power plants, schools, docks, and municipal buildings. Standard details and specifications were also produced for on-going administration of the program.

Kwethluk School Renovation / Replacement, Kwethluk, Alaska

Jeromy was the mechanical engineer of record and managed the plumbing and mechanical design teams stationed in multiple offices in two states. The village presented several challenges including being nearly 7 feet below the USACE design flood level resulting in routine flooding every spring. This project replaces a school that was constructed in the 1970-80 and reaching the end of its useful life. A well provides water for the school and receives on site treatment. Waste is discharged into a low pressure municipal sewer system. The utility building forms the hub of water and waste utilities for the school campus including educational facilities and teacher housing. Fuel is stored at a community tank farm near the power plant a quarter mile away. The fuel transfer system was upgraded. The design included waste heat recovery from the power plant.

Mr. Oehrlein has been with Stantec since 1987 serving as an Electrical Engineering Technician, Project Manager, and leader of the Minneapolis Building Services Team. His primary responsibilities include project management, electrical and control design, writing specifications, and electrical construction administration. Primarily Chuck designs electrical and control systems for water and wastewater facilities and related generator design, and Supervisory Control and Data Acquisition (SCADA) Systems. Chuck also has over 32 years of experience with lighting design, conducting energy audits, and designing security card access, CCTV systems and fire protection systems.

EDUCATION

Associate Degree, Electrical, Dunwoody College, Minneapolis, Minnesota, 1986

Associate Degree, Computer Information Systems, Dunwoody College, Minneapolis, Minnesota, 1984

REGISTRATIONS

Certified Engineering Technologist / Technician, National Institute for Certification in Engineering Technologies

PROJECT EXPERIENCE

Water

Terrace Park and Well 5 Water Treatment Plants, Spring Lake Park, Minnesota

As project manager, Chuck was responsible for the design and electrical construction engineering services of the power distribution, SCADA (including radio telemetry to remote sites), standby generator, lighting, fire alarm, and security systems..

Water Treatment Plant No. 3, Wayzata, Minnesota

As project manager, Chuck was responsible for the design and electrical construction engineering services of the power distribution, SCADA (including radio telemetry to remote sites), standby generator, lighting, fire alarm, and security systems for this new water treatment facility.

Water Treatment Facility Expansion / Garage / Vehicle Wash Bay - Apple Valley, Minnesota

Chuck was responsible for the electrical and control design and construction engineering for this 6.5 million gallon per day expansion of the existing treatment facility. The project also included a 12,000 square foot garage / shop expansion to the water plant and a vehicle wash bay addition to the adjacent Central Maintenance Facility. The electrical design included a new 2500 amp electric service, renovation and relocation of the existing 1250 KW generator, all new 480 volt power distribution, interior and exterior lighting, and card access, fire alarm, and security systems. The design also included a complete new water plant control system.

Water Treatment Plant, Stacy, Minnesota

As project manager for the electrical and control related , Chuck was responsible for the design and electrical construction engineering services of the power distribution, SCADA (including radio telemetry to remote sites), standby generator, lighting, fire alarm, and security systems for this new water treatment facility.

Chuck W. Oehrlein

Electrical Designer

Southwest Water Treatment Plant and Generator Design, Sartell, Minnesota

As project manager, Chuck was responsible for the design and electrical construction engineering services of the power distribution, SCADA (including radio telemetry to remote sites), standby generator, lighting, fire alarm, and security systems. Chuck also designed a portable generator set and “generator ready connections” for the City’s pump houses, lift stations, and East Water Treatment Facility.

Various Water Treatment Projects, Richfield, Minnesota

Chuck was responsible for multiple projects for the lime softening at water treatment facilities and related wells, towers, and lift stations to remove existing controls, filter equipment, chemical feed equipment, lighting, security systems, CCTV systems, and electrical equipment and replace with new. The demolition of the existing systems and installation of the new system occurred while all facilities were in use.

Wastewater

Lift Station 1 (Arthur Street) and Lift Station No. 2 (Biffs) Replacement, Spring Lake Park, Minnesota

Chuck was responsible for the electrical / control design and electrical / control related construction services for these two projects. Design work included power distribution, new on-site generators, lift station controls, radio telemetry, and associated modifications to the SCADA master

Wastewater Treatment

Lift Station Evaluation, St Paul, Minnesota

Chuck managed the electrical portion of a comprehensive evaluation of 23 sanitary lift stations and 6 storm lift stations. He evaluated all electrical and control aspects of the stations including services, power distribution, standby power, controls, instrumentation and radio telemetry/SCADA. The study ultimately led to Stantec designing the upgrade and/or replacement of 17 lift stations and also the design of a complete new dial up telephone based SCADA system. This evaluation report consisted of an extensive data collection and organization effort followed by a field evaluation of each station that focused on the structural, mechanical, and electrical aspects at each individual station. In addition, the system was evaluated as a whole, and some lift stations were eliminated through the effective use of additional gravity sewer. An upgrade plan for each station was prepared, and then the stations were then ranked in order of importance and condition and a CIP was created for the City of St. Paul to upgrade their lift station system.

Wastewater Treatment Facility Improvements - Cold Spring, Minnesota

Chuck was responsible for the design and electrical construction engineering services of the power distribution, SCADA system, process instrumentation, and lighting systems. Upgrades included a complete new control system for the facility. Upgrades to the plant treatment process included replacement of the existing blowers, diffusers, and clarifier drive assembly, and rehabilitated 40 year old control building. Blowers were automatically controlled by VFDs receiving a signal from a dissolved oxygen probe.

Mr. Paulson has more than 40 years of architectural design experience in municipal, corporate, commercial, institutional, health care, hospitality, and leisure/entertainment areas. Bruce specializes in technical detail design services to help ensure final products mirror or enhance the client's intended vision.

EDUCATION

Associate Degree, Drafting and Design, Duluth Area Vocational Technical Institute, Duluth, Minnesota, 1976

REGISTRATIONS

Licensed Architect #20910, State of Minnesota

Licensed Architect #9354, State of Wisconsin

MEMBERSHIPS

Member, American Institute of Architects

PROJECT EXPERIENCE

Water

Water Treatment Plant Expansion, Inver Grove Heights, Minnesota (Project Architect)

This project included expanding the existing water treatment facility on Babcock Trail by adding a second filter cell room, backwash tank, lunch room, conference room, bacteria lab, and a second restroom.

Water Treatment Facility, Carver, Minnesota (Architect)

Stantec provided planning, design, contract administration, and construction engineering services for this water treatment plant that was the first in the City of Carver. We provided expertise regarding radium removal, due to the high levels of radium in Carver.

Water Treatment Facility, Albany, Minnesota (Project Architect/Designer)

The Albany Water Treatment facility is designed to remove arsenic, iron and manganese at a peak flow rate of 2.0 MGD. There is a 200,000 gallon clearwell for water storage built into this treatment plant. Currently, there are two 1,000 gpm pumps that serve the High Zone, and one 1,000 gpm pump to serve the Low Zone. This plant is expandable to a 4.0 MG capacity in the future when necessary.

Water Treatment Plant Expansion, Inver Grove Heights, Minnesota (Project Architect)

This project included expanding the existing Water Treatment Facility on Babcock Trail by adding a second Filter Cell Room, Backwash Tank, Lunch Room, Conference Room, Bacteria Lab, and a second restroom.

SW Water Treatment Plant, Sartell, Minnesota (Project Architect/Designer)

Bruce worked closely with the City staff to develop an exterior design that used the same materials as the existing North Water Treatment Facility and adding a few other materials to give this facility its' own identity while keeping it recognizable as a City-owned facility. This project involved the design and construction of a new 6 MGD conventional gravity filter plant for iron and manganese removal. The plant was designed to be easily expanded to 16 MGD.

Bruce P. Paulson AIA

Architect

Water Treatment Facility No. 3, Wayzata, Minnesota (Project Architect/Designer)

The new Wayzata Water Treatment Facility No. 3 replaces the existing Water Treatment Plant No. 1 located at the same site. Bruce worked closely with City staff, neighbors, and City Council members to develop an exterior treatment that complied with the stringent City of Wayzata design guidelines. This project involved the design and construction of a new 3 MGD conventional gravity filter plant for iron and manganese removal.

Water Treatment Plant, Granite Falls, Minnesota (Project Architect)

This project replaced the existing water treatment facility with a new facility. This project included working closely with the client during the design phases to ensure the interior layout and room adjacencies met circulation needs while maintaining efficiency for the plant operator and his staff. Stantec also worked with City staff to incorporate exterior building materials to match the new City Hall while adding several new items to give the new facility its own identity.

Community Institutional

New Public Works and Maintenance Facility, Austin, Minnesota (Project Manager/Project Architect)

Was the project manager and project architect responsible for designing the new facility. Stantec performed a site analysis and developed the new facility design based on the results of the space needs study. This new public works facility accommodates administration, street, sewer, sign, and maintenance departments. A cold storage building contains a secure area for the police department impound.

Ambulance Facility, Blooming Prairie, Minnesota

Bruce led the team of architects and engineers through this project which started as a feasibility study to renovate the existing ambulance facility. When the study concluded that additional space was required, he prepared several options for renovating and expanding the facility and then several options for a new facility.

New Public Works and Maintenance Facility, Austin, Minnesota (Project Manager/Project Architect)

Was the project manager and project architect responsible for designing the new facility. Helped to prepare a site analysis and develop a space needs study. This new public works facility accommodates administration, street, sewer, sign, and maintenance departments. A cold storage building contains a secure area for the police department impound.

New Fire Station and Public Works Facility, Carver, Minnesota (Project Manager/Project Architect)

Served as project manager and project architect for this nearly 20,000 square foot combination fire station/public works building.

I am passionate about water. Problems surrounding water comprise one of the largest and most complex challenges of our time. Surface water supplies are over allocated, groundwater sources are over-drawn and contaminated, and as a global society our water demand continues to rise. While our industry has taken significant steps forward in developing a deeper understanding of the challenges and of technologies that may provide answers, there is still much work to be done. As a young engineer at Stantec, I am excited to be a part of the solution to this potable water crisis through successful client partnerships, implementation of sustainable technologies, and outside-of-the-box thinking.

EDUCATION

M.S. Civil Engineering - Environmental Emphasis,
University of Minnesota, Minneapolis, Minnesota,
2019

B.S. Civil Engineering, University of Minnesota,
Minneapolis, Minnesota, 2017

CERTIFICATIONS & TRAINING

EIT Environmental Engineering #152986,
Minnesota Board of AELSLAGID, St. Paul,
Minnesota, 2017

AWARDS

2018 Environmental Engineers of the Future
Scholar

2017 Central States Water Environment
Association Academic Excellence Award

2017 Simon and Claire Benson Award, Top
graduating undergraduate student from the
department of Civil, Environmental, and Geo-
Engineering UMN.

PROJECT EXPERIENCE

Drinking Water Treatment

Benson Chlorine Damage Repairs, Benson, MN
(Project Engineer)

After the City of Benson experienced chlorine
damage to significant process and electrical
equipment at their Water Treatment Plant, they
approached Stantec to design and bid a Chlorine

Damage Repairs project. Mr. Croll helped identify
items to be replaced or refurbished and developed
drawings and specifications for the project. Due to
the unique nature of the project, Mr. Croll and the
rest of the design team took special care to create
clear instructions for contractors and facilitate
smooth project delivery.

Groundwater Treatment

Disinfection Study and Implementation, Hastings,
Minnesota (Project Engineer)

The City of Hastings, MN was previously the
largest city in MN that did not employ continuous
disinfection of groundwater. After a positive E. coli
test, Hastings turned to Stantec to complete a
thorough investigation of disinfection alternatives.
Hastings did not want to assume traditional
methods would best fit their situation, and asked
that the alternative analysis include technologies
such as ozonation, filtration, U.V. disinfection, and
a no-disinfection alternative focused on
infrastructure improvements. Mr. Croll researched
each alternative, including through collaboration
with the University of Minnesota, prepared a report
for the city summarizing pros and cons of each
disinfection type and developed budget level cost
estimates for the alternatives. The project also
included meetings with the City Council and a
community Open House. Once the Client had
selected their preferred Alternative, Mr. Croll
worked to develop final drawings and
specifications for each implementation site.

* denotes projects completed with other firms

Groundwater Biological Denitrification Pilot Study, Cold Spring, Minnesota (Project Engineer)

The City of Cold Spring, MN was interested in exploring alternative technologies to reduce high nitrates in their groundwater. Stantec teamed with AdEdge to pilot a unique denitrification technology tailored to groundwater treatment, utilizing the biotta(R) process developed by Carollo. Mr. Croll reviewed pertinent rules and regulations to ensure the pilot met appropriation guidelines and coordinated permit application with the Minnesota Department of Health. During pilot operation, Mr. Croll reviewed performance data to verify pilot operation and identify potential problems. Mr. Croll also provided pilot support to City staff to ensure smooth operation, including lab testing to inform full scale design. At the conclusion of the pilot Mr. Croll conducted data analysis and developed a Technical Memo to summarize pilot performance and provide guidance for full-scale design.

Well #3 and Wellhouse, Clear Lake, Minnesota

The City of Clear Lake's current water supply was not sufficient for future growth, and so they approached Stantec to develop another well. The Client was highly sensitive to cost while also wanting to create space for future treatment vessels, as other City wells had developed high nitrates after regular use. On this project, Mr. Croll developed building layouts for a wellhouse with consideration towards future treatment needs, created pressure filter and piping layout as a future treatment option, and helped develop the specifications and plans.

Regional Pilot Study for PFAS Treatment, Cottage Grove, Minnesota

PFAS contamination is widespread in the East Metro area of Minneapolis-St. Paul. In order to evaluate ion exchange as a potential treatment technology, the Minnesota Pollution Control Agency approved a pilot plant evaluating ion exchange in the community of Cottage Grove. Mr. Croll provided background research on PFAS treatment technologies and previous ion exchange pilot studies, basic engineering calculations, and calculation review to aid pilot planning and design.

Cold Spring Water Treatment Facility, Cold Spring, Minnesota (Project Engineer)

Mr. Croll developed the basis of design and process model for the full-scale biological denitrification drinking water treatment plant in Cold Spring, MN. The treatment facility, which was a continuation of the pilot study completed for the same technology, utilized AdEdge denitrification filters and blending to meet the Minnesota effluent nitrate limits for drinking water.

Wastewater Treatment

East Itaska Joint Sewer Board WWTF Improvements, (Project Engineer)

The East Itaska Joint Sewer Board (EIJSB) needed improvements to their lagoon WWTF in order to meet more stringent TSS and TP limits. Mr. Croll compared process design alternatives for pond aeration using fine bubble diffusers, tertiary filtration, and ultraviolet light disinfection, and developed specifications for the selected technologies. Additionally, Mr. Croll created hydraulic profile calculations and created budget level cost estimates through research of various processes and discussion with vendors. He also worked to create a detailed construction cost estimate for the project.

** denotes projects completed with other firms*



Approach

Project Team Leadership

As your project manager, Mark Rolfs will be the City's single point of contact throughout the project. Mark will be responsible for seeing that the Stantec team responds efficiently and swiftly when a project is assigned to our team.

Upon authorization of the project, Mark will become the primary point of contact with Terry Randall and will ensure that adequate resources and expertise are provided for the project. Mark will bring a fresh focus on client service and responsiveness to this project. The entire Stantec team—including process, electrical, mechanical, architectural, and structural experts—is located in our Minneapolis office.

It will be critical to engage City staff throughout the project. Integrated with project team activities, this will incorporate your facility knowledge and help the City's needs are met every step along the way.

Team Communication

Mark will be the primary contact for all project related management related topics. In addition, Mark will ensure that project team members are communicating effectively with Spring Lake Park on all project technical issues. At Stantec, we recognize different people prefer different communication styles. Some people want all communication provided by email. Some people prefer a phone call to discuss ongoing project details. We will work with the Spring Lake Park Project Manager on the desired method of communication.

Stantec will document project meetings, site visits, key decisions and project task status; and provide project communication documentation to the Spring Lake Park Project Manager.

Our Staff Will Be Able to Meet on Demand

The best plan must be flexible to deal with unforeseen circumstances. Meetings become necessary overnight and new developments create the need to adjust a work plan. There will be cases when Spring Lake Park staff and project team members must collaborate on a task with urgency. Also, interaction with public and communities inevitably produce issues that require changes in the course of action.

Our team has the ability to handle planned and unplanned meetings as well as inspections on short notice and is enhanced by the following benefits we bring to each project:

- Close proximity to Spring Lake Park and the project area
- Core team is located in Minneapolis
- Commitment to strong project management
- Staff workload management which prioritizes commitment to Spring Lake Park

Our team knows the Arthur Street WTP and its history from the original design in 2003. Our experience with this facility will allow for efficient project delivery .



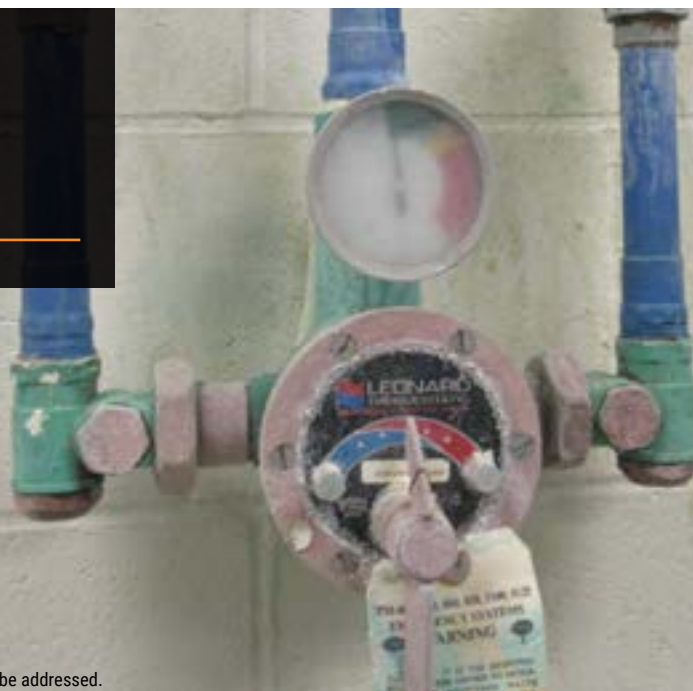
Project Approach

We will put the lessons learned over time and our understanding of chlorine damage repairs to work for you. The following summarizes a few of the specific ways that we will provide the service you deserve:

1. Throughout the project we will listen to your staff to obtain key parameters required for success; so that those parameters can stand as our objectives and be the focus of our work.
2. Provide accurate assessment and verification of the various conditions present in the facility by trained professionals in each discipline of work.
3. Verify proper documentation of conditions observed.
4. Discuss design alternatives that Stantec has implemented at other chlorine damage rehabilitation projects and collaboratively determine the best solutions for Spring Lake Park.
5. Careful preparation of plans and specifications with project specific requirements that clearly inform the bidder about the project expectations and instructions for carrying out the work prescribed by the team.
6. Provide accurate cost estimating and understanding of current market conditions and materials pricing to establish and/or verify a reliable budget. This includes Opinions of Probable Construction Costs at 30%, 60%, 90% and the Final Bid Package.
7. Timely and professional communication of rehabilitation and/or replacement of specific project elements.
8. Effective communication among project stakeholders including the City Staff, Spring Lake Park citizens, Stantec, League of Minnesota Cities Insurance Trust (LMCIT), Minnesota Department of Health (MDH), contractors, sub-contractors.
9. Review the drawings with MDH to solidify that the design meets 10 States Standards and will be compliant when MDH conducts follow up on site surveys.
10. Professional services during bidding to eliminate headaches for your staff. We will handle the details, advertising, hosting the pre-bid meeting, preparing addenda, responding to questions, determining equals, opening bids and tabulating the results and communicating results to you and LMCIT.
11. Assist with award of the project to the responsive responsible bidder.
12. Review pay applications to verify that they accurately reflect the level of completion achieved to protect your interests.
13. Carry out project progress meetings and provide on-site direction to clarify and enforce the project documents. We will represent your interests and advocate for you.
14. Verify satisfactory installation for both labor and materials and follow up to gather proper operation and maintenance manuals, record drawings, insurance, lien waivers, and project closeout paperwork.
15. Follow up with operations and general contractor regarding warranty issues.
16. Listen again to make sure our comprehension was accurate in the initial stages of the project and to offer an opportunity to adjust our services to meet expectations or conditions that may have evolved throughout the course of the project.

The items above represent a grab sample of the ways we will provide the level of service requisite with the value we place on the relationship that has allowed Stantec and Spring Lake Park to work together over the last six decades.

We will put the lessons learned over time and our understanding of chlorine damage repairs to work for you.



Corrosion is impacting the facility components and must be addressed.



The chlorine leak caused damage to the backflow preventers that serve the water supply to the chlorine feed systems.

League of Minnesota Cities Insurance Trust Experience

Stantec has experience working with the League of Minnesota Cities Insurance Trust (LMCIT) on similar projects.

Stantec has worked with LMCIT on various water treatment projects ranging from filter media disruptions to chlorine damage repairs. Combining experience with LMCIT with the long-standing working relationship with Spring Lake Park will result in a successful project. The following summarizes key advantages to the Stantec/Spring Lake Park team:

- The collective team including Stantec and Spring Lake Park worked together to conduct condition assessments and prepare preliminary cost estimates for the proposed project. This familiarity with the project results in efficiency and accuracy in delivery of the design and implementation phases of the project.
- Stantec understands the process of resolving claims in a manner that achieves concurrence with the LMCIT. Our team recently prepared construction documents, carried out bidding services and is in the implementation phase for another very similar chlorine damage repair project in Benson.
- We know LMCIT expectations down to the particulars such as:
 - Contract language
 - Review process
 - Replacement requirements of like-kind materials
 - Added value and due diligence
- We understand LMCIT protocol for review and approval of the contract documents. Our recent experience with a similar project in Benson enabled us to engage with LMCIT staff and learn what they need to have in-hand to process a claim. We are prepared to leverage these interactions to serve as a liaison between LMCIT and Spring Lake Park.
- By working with LMCIT our team knows there are specific requirements when dealing with insurance claims that must be adhered to when prescribing repairs such as "like kind replacements." Keeping the specifications within LMCIT guidelines streamlines the process and lends to an efficient project.

How Stantec will Quickly Mobilize to Meet your Schedule

Stantec will develop a detailed schedule using critical path method (CPM) scheduling tools to align the timing for each activity with the necessary resources. The schedule will incorporate estimates of effort and duration for activities and deliverables so that specific assigned project staff members have both the technical capabilities and time to meet project deadlines.

In addition, the Gantt chart will be designed as a linked series of activities, deliverables, and milestones so that repercussions of changes in tasks or schedule can be easily assessed and considered. A schedule overview has been provided on the next page detailing our conceptual project approach. This schedule will be updated with Spring Lake Park's input when Stantec is selected.

PROJECT SCHEDULE	2019	2020												2021
	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	JAN
Notice to Proceed	●													
Kickoff Meeting		■												
Prepare Bidding Documents		■	■	■										
Approve Bidding Documents & Authorize Bids				■										
Publish Advertisement for Bids					■									
Open Bids					■									
Award Project & Sign Contracts						■								
Begin Construction <i>(activities that allow plant to remain online)</i>							■	■	■	■	■	■	■	■
Begin Construction <i>(activities that take plant offline)</i>										■	■	■	■	■
Project Closeout														●

Quality Control Procedures

Stantec has developed and maintains a Quality Assurance/Quality Control Plan (QA/QC Plan) to meet the specific needs of our clients and project requirements. The hallmarks of Stantec’s QA/QC Plan are:

- Communication
- Defined organizational structure
- Specific duties and responsibilities
- Definition of design standards and design control
- Independent technical reviews
- Regular cost control and schedule evaluations
- Staff training and recordkeeping
- And last as well as first, COMMUNICATION

This program formalizes QC procedures, including record keeping, dissemination of information, QC milestone schedules, lines of responsibility, and QC organizational structure. We use a pre-established, written procedure for QA/QC of all project documents. It is distributed to and reviewed with the entire team for each assignment.

The Project Manager maintains an ongoing dialogue, through regularly scheduled internal project meetings and communication, with key project staff and team members. Prior to issuance of milestone or final documents, the Project Manager reviews and confirms adherence to QA/QC protocols.

We recognize the importance of having a long-term relationship with your City and we will not take that for granted.

Construction Cost Control Measures

Stantec understands the important role accurate cost estimating plays in an Owner’s decision process. Providing Spring Lake Park with objective information on the cost of various options during the design phase helps the City and Stantec decide on the best course of action when making project decisions.

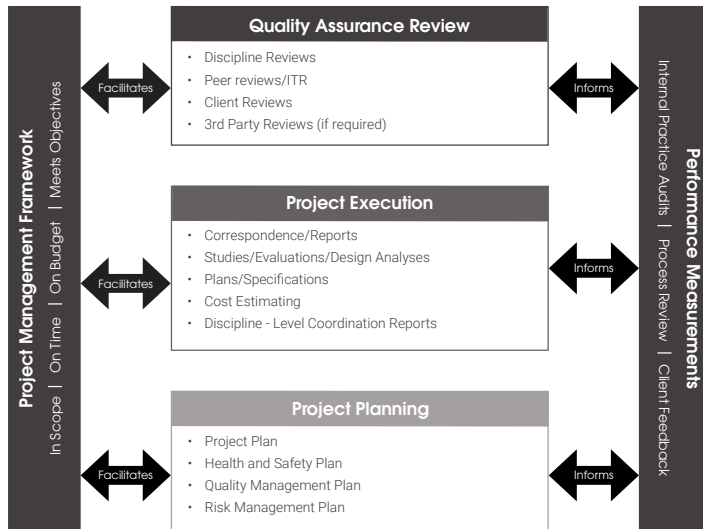
To provide solid estimating services, Stantec uses its in-house team of construction managers to prepare detailed estimates. These personnel are trained in construction estimating and are able to provide detailed cost breakdowns by construction division.

This is accomplished using a variety of tools, including RS Means, the National Construction Estimator, Micro- Computer Aided Cost Engineering Systems Second Generation (MCASES II), web-based costing tools, and our historical database of project costs based upon similar project types. This information provides a solid estimate of project costs to the City, prevents scope creep, and alleviates any surprises during the bidding process.

Additionally, our construction services team has experience serving the City of Spring Lake Park and understands your expectations. Our experienced team will work with you to deliver successful projects while minimizing construction costs.

STANTEC QUALITY MANAGEMENT SYSTEM

Certified to the ISO 9001:2000 Standard



Responsibilities		
Clients	Practice Area	Employee
<ul style="list-style-type: none"> • Written SOW • Timely Interaction • Project Objectives 	<ul style="list-style-type: none"> • Mentoring • Tools • Training and Development • Standardized Project Delivery Framework 	<ul style="list-style-type: none"> • Education • Licensing • Continuing Education • Professional Involvement

Budget Summary Sheet

733 Marquette Avenue Suite 1000, Minneapolis MN 55402-2309

Project Name:	Chlorine Repairs
Client :	City of Spring Lake Park
Date:	12/4/2019
Project Manager:	Mark Rolfs

Brief Description of Intent and Scope:

Upgrade the Ogilvie WWTP including demolition of existing facilities, upgrading existing facilities, and construction of a new well, headworks building, aeration basins, final clarifiers, and a new Chemical and Control Building. See contract scope of work for additional details.

Task	Description	Direct Labor Hours	Labor Cost	Expenses	Total Fee
100	Project Management	43	\$ 6,771.00	\$ -	\$ 6,771
200	Project Kick Off and Preliminary Investigations (1 week)	29	\$ 4,447.00	\$ -	\$ 4,447
400	60% Drawing and Specification Development (1 Months)	134	\$ 19,190.50	\$ 29.00	\$ 19,220
500	100% Drawing and Specification Development (1 month)	162	\$ 23,498.50	\$ 29.00	\$ 23,528
600	Bidding Support, & Construction	239	\$ 34,059.00	\$ 580.00	\$ 34,639
Total		606	\$ 87,966.00	\$ 638.00	\$ 88,604

Design with community in mind