

City of Fullerton

Technical Proposal for a Water Well Siting and Feasibility Study
CIP Project #53034





📍 Fullerton City Hall. Fullerton, CA.

Table of Contents

Cover Letter	1
Organization and Credentials	2
Minimum Qualifications	6
Project Understanding and Approach	7
Subconsultants	14
Current Workload	14
Proposed Fee (<i>Provided as a Separate PDF</i>)	14
Additional Information and Comments	14
Schedule	15
Appendix - Resumes	A

Cover Letter



Stantec Consulting Inc.
38 Technology Drive, Suite 200
Irvine, CA 92618

April 28, 2025

Attention:

Deborah De Bow
City of Fullerton, Public Works Department
Engineering Division
303 W. Commonwealth Avenue
Fullerton, CA 92832-1775

Reference: Response to Request for
Proposals for Water Well Siting and
Feasibility Study | CIP PROJECT #53034

Submitted Via Email To:

Deborah.Debow@cityoffullerton.com

Acknowledgments:

- We acknowledge receipt of Addendum No. 1, dated March 28, 2025, and No. 2 dated April 15, 2025.
- This proposal shall remain valid for a period of no less than 90 days from the date of submittal.
- The letter is signed by Jeff Dunn, who is authorized to bind Stantec to the terms of the proposal.

*We are proud to
be a part of the
City's successful
infrastructure
and community
growth.*

Dear Deborah and Selection Committee,

The City of Fullerton (City) is continually planning for and addressing its water supply needs to improve reliability and service to its community. To this end, the City is seeking a consultant to successfully evaluate the feasibility of new water wells that will enhance the City's existing water supply system's capacity during peak water demands. Stantec Consulting Services, Inc. (Stantec) is confident our team of qualified engineers and planning specialists have the expertise necessary to complete this project and meet your highest standards.

Jeff Dunn, PE is a principal at Stantec, and our proposed project manager. Jeff and many of our proposed team members for this project—including our subconsultant, Thomas Harder & Company (TH&Co) have successfully worked on relevant projects for the City. These projects—the recent Water Master Plan and Analyses for Future Wells for Main Plant Master Plan provide our team the knowledge and familiarity with the City that will be leveraged for beneficial recommendations and a successful study.

Our team has been intentionally selected with individuals who can provide valuable involvement to address each specific site consideration to be evaluated. TH&Co. will address hydrogeological considerations, Roxana Carrillo will assist with hydraulic and distribution system considerations, and other individuals as shown on our Team Organizational Chart are experts in their fields who will assist in addressing site and logistical considerations.

Our long history of engineering projects combined with our local experience and proven project approach means we will deliver an effective water well siting and feasibility study for you within the project timeline and proposed budget we present in our proposal.

In accordance with the RFP, our proposed fee has been provided as a separate file. Our proposal is valid for a period of 90 days from the date as shown on this submission.

We look forward to continuing a successful working relationship and the opportunity to be your partner in providing engineering consulting services to prepare a Water Well Siting and Feasibility Study.

Sincerely,

Stantec Consulting Inc.

A handwritten signature in black ink, appearing to read 'Jeff Dunn'.

Jeff Dunn, PE

Principal, and Project Manager
Mobile Phone: (949) 521-3110
Email: jeff.dunn@stantec.com

Organization and Credentials

1. Consultant name, address and telephone number

• LOCAL OFFICE THAT WILL HANDLE CITY WORK

Stantec Consulting Inc.
38 Technology Drive, Suite 200
Irvine, CA 92618
(949) 521-3110

LOCAL OFFICE OF OUR PROPOSED SUBCONSULTANT

Thomas Harder & Co. (TH&Co)
1260 N. Hancock St., Suite 109
Anaheim, California 92807
(714) 779-3875


2. Consultant Experience

Stantec has the local resources and abilities to provide personalized service while keeping the work on schedule and within budget. Our team's current and specific experience with the City in the planning and design of water infrastructure includes our recent Water Master Plan and On-Call Modeling Services, led by Jeff Dunn. In addition to our specific experience working on projects within Fullerton, we have experience providing similar services to many other local cities including Anaheim, Orange, Garden Grove, Santa Ana, and other public agencies such as Orange County Water District (OCWD), Irvine Ranch Water District (IRWD), Inland Empire Utilities Agency (IEUA), and Cucamonga Valley Water District (CVWD). Additionally, our proposed subconsultant TH&Co has strong hydrogeological consulting experience combined with water well project experience completed for the City of Fullerton.

• EXAMPLES OF RELEVANT STUDIES

On this and the following page, we present examples of relevant projects for both Stantec and our subconsultant, TH&Co. We include client references for each. These projects showcase our proven ability, available resources, and successful experience supporting projects requiring skills similar to the City's proposed project.

Water Master Plan & Water Rate Study and On-Call Hydraulic Modeling Services (EPA Well Capacity Analysis Task)

📍 Fullerton, CA |  Stantec

Year Completed: 2025 | Cost of Services: \$1.1M | Client Name: City Fullerton

Current Client Reference: Gar Huang, Engineer | Phone: (714) 738-6895 | Email: garh@ci.fullerton.ca.us

As part of the efforts to continually improve the water service to the community, the City hired Stantec to update its Water Master Plan (WMP) and Water Rate Study, including On-Call Hydraulic Modeling services. The WMP addresses the water supply, water demands, facilities planning, water quality and regulatory concerns in preparation of a prioritized capital improvement program (CIP). The WMP's prioritized CIP was conducted using a three-pronged approach that was based on capacity evaluations using a newly calibrated hydraulic model, visual condition assessment of vertical assets, and asset-risk assessment expanding on the Asset Management and Pipeline Rehabilitation and Replacement program. In addition to the WMP and development of the CIP, Stantec performed several tasks under the On-call Modeling services agreement, which included an evaluation of a proposed EPA well and treatment facility to be within Zone 1. Well capacity constraints and system improvements were analyzed and recommended.

Recycled Water Master Plan and Non-Potable Well Supply Siting Study

📍 Ontario, CA |  Stantec

Year Completed: 2020 | Cost of Services: \$145K | Client Name: Orange County Water District (OCWD)

Current Client Reference: Christy Stevens, Principal Engineer | Phone: (909) 395-2641 | Email: cstevens@ontarioca.gov

As a follow up study to Stantec's Recycled Water Master Plan prepared for the City, Stantec was retained to evaluate the feasibility and siting of a new non-potable water well supply source in-lieu of a proposed large booster pump station supplying purchased water from the Inland Empire Utilities Agency 1050 Zone. The siting study evaluated 13 potential well sites, including sites containing abandoned and destroyed wells. The analysis of each site was based City owned properties and criteria such as site constraints, site improvements, basin capacity, basin water quality data, impacts to the existing distribution system, and project costs. Alternatives were discussed in a workshop and ranked using a scoring matrix.

On-Call Consulting Services for PFAS Treatment Systems Design

📍 Santa Ana, CA |  Stantec

Year Completed: 2020–Ongoing | Cost of Services: \$4.5M | Client Name: Orange County Water District (OCWD)

Current Client Reference: Audrey Perry, Associate Engineer | Phone: (714) 378-8245 | Email: aperry@ocwd.com

Stantec worked with the OCWD and the City of Santa Ana (City) to design ion exchange (IX) treatment systems for a total of four distinct sites treating five groundwater wells. Stantec produced 3-D renderings of the sites so OCWD and the City could have discussions. The first-priority site preliminary is complete. The other sites designs are under construction or completing design. Stantec's services also include reviewing water quality data, coordination with the state California State Water Resources Control Board (CSWRCB) Division of Drinking Water, preparing an O&M plan, hydraulic evaluations, and completing design documents for construction. Stantec is also assisting with bid phase services, office engineering and construction inspection.

Supplemental Groundwater Pumping Program

📍 Glenn and Colusa Counties, CA |  Stantec

Year Completed: 2023 | Cost of Services: \$107,800 | Client Name: Glenn Colusa Irrigation District

Current Client Reference: Thaddeus L (Thad) Bettner, PE - General Manager (former) | Phone: (530)934-8881 | Email: tbettner@gcid.com

Glenn Colusa Irrigation District (GCID) retained Stantec to assist them with the development of an up to 60,000 acre-foot per year (AFY) supplemental groundwater pumping program to meet irrigation water demands in Shasta Critical water years. Five deep aquifer production wells were sited based on hydrogeologic conditions in the Tehama Formation aquifer and estimated pumping capacities of other wells completed in this aquifer.

SCV Water Saugus Formation Well Siting Study

📍 Bradbury, CA |  Thomas Harder & Co.
Groundwater Consulting

Year Completed: 2023 - Ongoing | Cost of Services: \$19K | Client Name: Santa Clarita Valley Water Agency (SCV Water)

Current Client Reference: Jason Yim, Principal Engineer | Phone: (661) 513 - 1277 | Email: jyim@scvwa.org

Our subconsultant, TH&Co, is conducting a well siting study for 13 potential well sites within SCV Water's boundary within the Santa Clara River Valley East Groundwater Subbasin. The purpose is to identify and rank optimum locations for potential well sites for the top four ranked new production wells to be completed with the Saugus Formation. Criteria for identifying well sites and ranking of the sites included ease of property access/acquisition, proximity to existing distribution system, well production potential, proximity from faults, proximity to existing production wells, distance from potentially contaminating activities, including clean-up sites and wastewater treatment plants, and adequate space to drill the well, drilling rig access.

Main Plant Master Plan Well Study/Wells 7&7A

📍 Fullerton, CA |  Thomas Harder & Co.
Groundwater Consulting

Year Completed: Main Plant Wells: 2021 / Wells 7 & 7A:2022 | Cost of Services: Master Plant Wells: \$32K/ Wells 7 & 7A: \$133K | City of Fullerton

Current Client Reference: Gar Huang, Engineer | Phone: (714) 738-6895 | Email: garh@ci.fullerton.ca.us

TH&Co conducted a hydrogeological investigation of existing wells located at the Main Plant. The production wells have shown a decline in well efficiency over time due to clogging of well perforations and water quality. The purpose of this project was to identify the O&M measures and analyze additional groundwater extraction well locations that will help the City maximize production at the Main Plant Site. Groundwater quality in the Study Area contains per- and polyfluoroalkyl substances (PFAS) detections as well as groundwater contaminant plumes with elevated volatile organic compound (VOC) concentrations in the shallow aquifer. TH&Co also designed a program to destroy one of the old wells (Well 7) and develop a design for a new well to replace it (Well 7A). TH&Co provided permitting support, preliminary design, and final design with technical specifications as well as construction management.

• OUR PROJECT TEAM'S PAST RECORD OF PERFORMANCE

These projects indicate our past record of performance on similar projects. The Stantec team has successfully completed dozens of similar studies for public agencies throughout Southern California and as a result, have gone on to assist many of them with implementing projects. Additional projects can be found on our team's resumes in Appendix A.

3. Project Team

• PRIMARY REPRESENTATIVE AND AN ALTERNATIVE

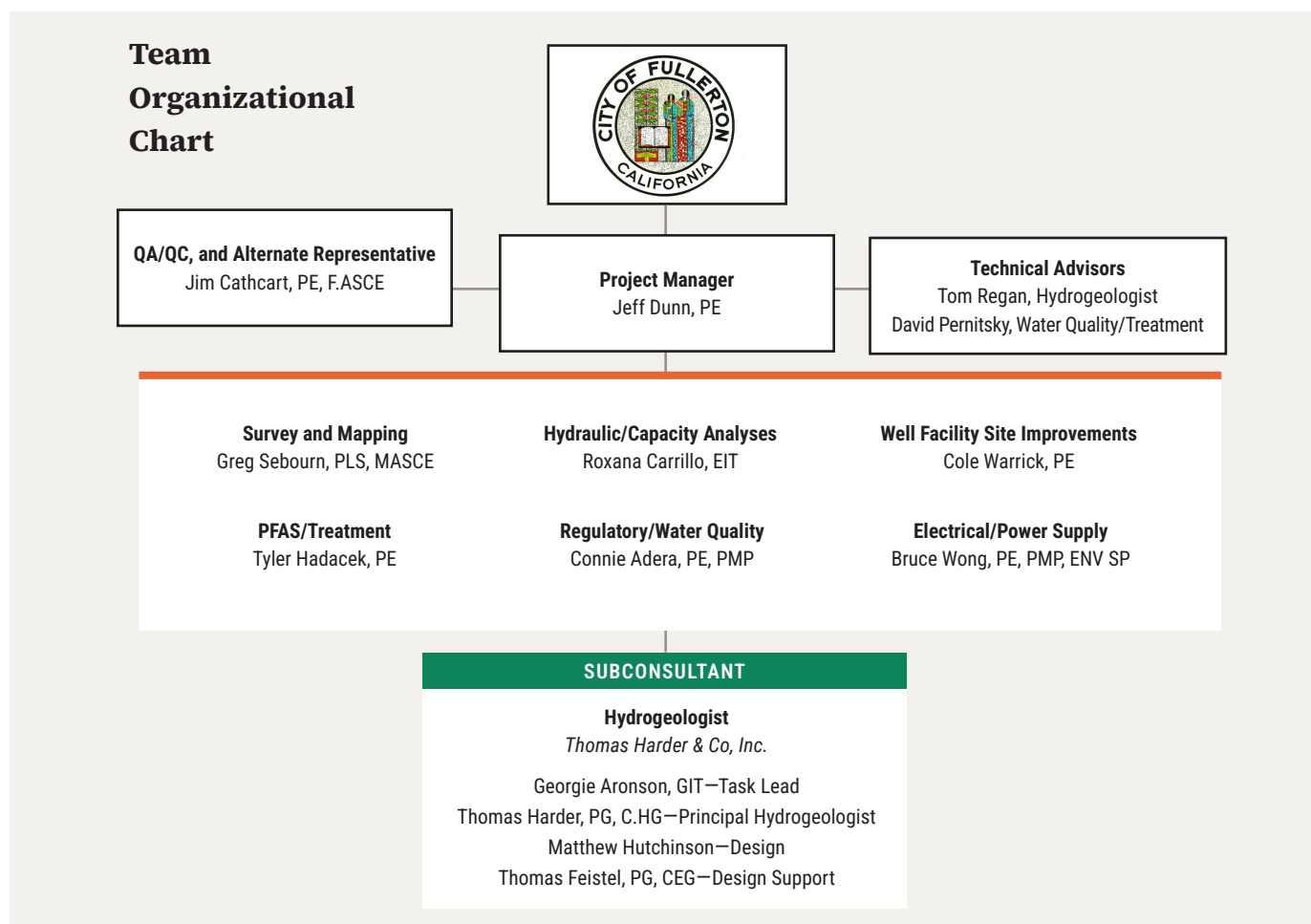
Jeff Dunn our proposed project manager for this project will serve as the primary representative for the Stantec team. Jeff will be the main point of contact for the City throughout the duration of the project. Jim Cathcart, in addition to serving as the team's technical advisor and quality assurance/quality control lead (QA/QC) will also served as our team's alternate representative. Both Jeff and Jim's contact information are provided below. **Jeff, Jim, and other key personnel assigned to the project shall not be reassigned without prior written approval from the City.**

Primary Representative: Jeff Dunn, PE | Mobile Phone: (949) 521-3110 | Email: jeff.dunn@stantec.com

Alternate Representative: Jim Cathcart, PE, F.ASCE | Mobile Phone: (949) 456-7346 | Email: jim.cathcart@stantec.com

• ORGANIZATIONAL CHART FOR THE PROJECT

We have assembled a team of professionals with a high level of commitment, enthusiasm, and experience. Our team members bring diverse water resources background and project management experience. It is this experience and technical knowledge that will help us achieve your goals for this project. Each team member is an expert in their role assigned for this project, and hand selected specifically to provide valuable insight, review, analysis, and recommendations to be incorporated into the study. Our team organization chart, shown below, demonstrates how our team members are organized and managed to help ensure tasks described in the scope of work in the RFP as well as in our proposed project approach are delivered smoothly and efficiently.



• PROJECT TEAM RESUMES

We provide resumes of all individuals participating in the project including our subconsultants in Appendix A.

TEAM MEMBER RESPONSIBILITIES MATRIX

Below, we provide a matrix of our proposed team's (including our subconsultant) anticipated effort based on their total hours of work for each proposed task to successfully complete this project.

Stantec

		STANTEC										Thomas Harder & Co.					
Name	Total Hours	Cathcart, Jim	Regan, Thomas	Pernitsky, David	Dunn, Jeff	Carrillo, Roxana	Warrick, Cole	Hadacek, Tyler	Adera, Connie	Wong, Bruce	Sebourn, Greg	Tom Harder	Georgie Aronson	Matthew Hutchinson	Thomas Fiestel		
		10	6	4	112	190	30	18	18	20	10	44	54	170	116	6	22

Task	Description	Hours																Stantec Hours	TH&Co. Hours	Total Hours
1	Kick-Off Meeting				4	4						6		6		4		8	20	28
2	Project Management	8	2	1	32							12	16	48	10	4		43	90	133
3	Considerations for Feasibility Study	0	5	3	72	186	30	18	10	20	10	22	32	90	102	6	14	354	266	620
3.1	Preliminary Investigation and Data Review				2	4	1	1		1	1	2	2	8	24		1	10	37	47
3.2	Preliminary Short List Workshop				4	4	1	1		1	1	2	2	16			1	12	21	33
3.3	Analysis of Hydrogeologic Considerations		2		4							4	6	12				6	22	28
3.4	Analysis of Hydraulic Considerations				12	90												102	0	102
3.5	Desktop Analysis of Logistical Considerations			1	12	32	16	12	8	16	8	2	6	8	16		8	105	40	145
3.6	Site Visits				6		8							2	10			14	12	26
3.7	Site Prioritization											4	4	8	12			0	28	28
3.7.1	Well Siting Ranking Workshop		1				2	2				4	4	8				5	16	21
3.8	Prepare Feasibility Study Report		2	2	32	56	2	2	2	2		4	8	28	40	6	4	100	90	190
4	Coordination with the City	Spread among all other Tasks																		
5	Coordination with OCWD	2			2							2	2	16				4	20	24
6	Coordination with Local Hydrogeologist	Spread among all other Tasks																		
7	Regulations and Standards				2				8			2	4	10				10	16	26
Project Summary																		419	412	831

Minimum Qualifications

a. Valid California Professional Civil Engineer License

Based in Stantec's Irvine office, Jeff Dunn is a California licensed professional civil engineer and project manager with more than 30 years of water resource planning and engineering projects including several hydraulic studies feasibility studies and preliminary planning reports for municipal domestic drinking water systems, recycled water delivery systems, and sewer collection systems. Additionally, we have a half a dozen licensed professional engineers on our proposed team for this project as can be seen in the team organizational chart as well as on the team's resumes in the appendix of this proposal.

b. Valid City of Fullerton business license (if selected)

Stantec maintains an existing business license with the City of Fullerton that we can present if selected.

c. Comprehension of the City of Fullerton's water system and operational needs

The Stantec team is very familiar with Fullerton's entire water system from our preparation of the Water Master Plan and hydraulic modeling services currently underway. For our Water Master Plan, we conducted site visits of the pump stations, wells, and reservoir facilities including meeting with operations staff to understand the operational needs of the system in addition to the capacity needs based on the hydraulic modeling. We also currently provide surveying support to the City. Our survey manager, Greg Seaborn, meets regularly with City staff and is extensively involved with the Infrastructure and Natural Resources Advisory Committee. This close partnership of knowledge and familiarity will enable us to provide valuable insight when developing the proposed water well siting and feasibility study.

d. Ability to provide deliverables consistent with the latest City-adopted formats

In addition to becoming familiar with the City through our recent survey and water master planning efforts, we prepared the 2019 Water Rate Study. Our subconsultant, TH&Co also has prepared design and construction documents from the recent Well 7 and 7A projects. All of these efforts provide us insight into the City-adopted formats for deliverables. Additionally, our team of professional consultants work with various public agencies that each require deliverables specific to their needs and formats so we are able to adapting to a variety of deliverable formats and can be flexible should the City require changes.

e. Familiarity with City of Fullerton standards, provisions, and practices

We have familiarity with the staff and intimate knowledge of the City's standards, provisions, and practices through our work with the City. This includes our recent surveying work as well as the Water Master Plan, including the Water Rate Study project. Additionally, our subconsultant, TH&Co has prepared design and construction documents from the recent Well 7 and 7A projects. In 2021 through 2022, TH&Co successfully sited, designed, constructed, and tested the City's Well 7A and did an analysis of the City's existing well conditions at the Main Plant Site in Anaheim, California in support of the Main Plant Master Plan. In addition to evaluating the City's existing wells, TH&Co also identified areas for potential well future well locations on the Main Plant site.

f. Familiarity with OCWD including water quality and supply issues in the County

In addition to our knowledge of the City's water system, we have experience and familiarity with nearby agencies, such as with Anaheim from our on-call services agreements including their Water Master Plan, as well as working with OCWD on their PFAS treatment facilities for Santa Ana.

Well Siting Feasibility Study

Los Angeles County Fire Camp 14, Saugus, CA

Stantec provided hydrogeologic support services for an exploratory drilling investigation at Los Angeles County Fire Department (LACFD) Camp 14 in Saugus. The work was performed to assist LACFD in identifying a potential replacement water well site located outside the 100-year flood zone of San Francisquito Creek. The work entailed drilling contractor coordination, lithologic logging and sampling of soils and rock encountered using the sonic drilling method, and preparation of final report with recommendations for the possible design and production capability of two new low-capacity water wells. We also prepared well construction specifications and bid documents for two small-capacity drinking water wells and a hydrogeologic report to support well permitting. Additionally, Stantec provided technical oversight of the drilling, design, construction, development, performance testing and water quality sampling and analysis of the two replacement wells.

Project Understanding and Approach

UNDERSTANDING

It is our understanding that the City intends to identify potential well sites to drill and construct two new water supply wells to meet peak water demands. The City serves an area of approximately 22.3 square miles and has 8 active groundwater wells. The existing water distribution system delivers potable water to its customers through two primary sources, including groundwater pumped from wells in the Orange County Groundwater Basin, and treated imported water from Metropolitan Water District of Southern California. The wells will enable the City to take advantage of less costly local groundwater supplies and reduce the need for purchasing imported water.

It is anticipated that at least two new potable water wells will be developed resulting from this study. Based on production from existing wells, each well will ideally be anticipated to have a production between 2,000 - 4,000 gallons per minute (gpm). Existing wells primarily pump water into the lower pressure zones being in the southerly portions of the City. There are two wells in the southwestern area of the City that supply directly to Zone 1B. Five existing wells (with one additional well, Well 7A soon to be completed) are located to the south of the City within the City of Anaheim, within the City's Main Plant which supplies Zone 1 service area directly. The Main Plant has also recently been undergoing construction for PFAS treatment. The other wells are situated in the southeastern portion of the City supplying directly to Zone 1A, and each of these Zone 1A wells (Kimberly 1A, Kimberly 2A, and Sunclipse) either have current PFAS treatment or will be undergoing a new PFAS treatment project. The recently completed Water Master Plan prepared by Stantec identifies additional well capacity recommended within Zone 1B that would benefit the supply and operational needs in the western area of the City.

This project includes determining site recommendations based on preliminary conceptual design and feasibility of constructing one replacement well and one new well. The goal will be to review and reduce a list of 15-20 potential candidate sites provided by the City down to a short list of 3-5 sites that will be ranked in priority order. Additional potential sites from the initial list of 15-20 provided by the City may also be identified during the study.

APPROACH

Our approach to this project assumes the evaluation of the sites depends on three main considerations: hydrogeological, hydraulic, and logistical.

- **Hydrogeological** considerations include geologic characterization, aquifer permeability, depth to groundwater, proximity to other nearby wells and groundwater quality. For groundwater quality, it is anticipated that volatile organic compounds (VOCs), perfluoro alkyl substances (PFAS), iron and manganese, and colored water will be the primary constituents of concern to avoid when identifying well sites. Potential well sites will also be evaluated to assess potential to impact future contaminant plume migration, though at a high level and with existing data. The wells' potential effect on nearby wells, including remediation wells, will also need to be considered.
- **Hydraulic** considerations include impacts to the existing distribution system and the locations within a pressure zone, such as Zone 1B, 1 and 1A. Zone 1B already has recommendations for needed well capacity from the Water Master Plan. However, to add additional well capacity from what is currently available, pumping capacity from these lower zones to the upper zones may be required to operate the system most efficiently. Depending on the well capacity, conveyance pipelines and system operational constraints will be evaluated and any improvements for each potential site will be identified.
- **Logistical** considerations include site layout considerations, lateral setback from sewer manholes, property boundaries, neighboring land uses, proximity from potential contaminating activities, allowable space for a water treatment plant (if needed in the future), proximity to existing pipeline and electrical infrastructure, hydraulic considerations (e.g. pressure zone), and ability to acquire the property or a property easement. Based on our experience, finding and acquiring sites with adequate space to drill and construct a well (e.g. a 100 x 100 ft area) can be very challenging but possible in a developed urban area, such as Fullerton.

Based on the above categories of considerations, we have assembled a team that are experts in their field to address each of the considerations. Our Hydrogeologist team of TH&Co has extensive knowledge of Fullerton's service area and experience to address the hydrogeologic considerations. Our hydraulic modeling team led by Roxana Carrillo who created the model and analyzed the model for the City's Water Master Plan will assist in addressing hydraulic considerations. Logistical considerations will be addressed with the help from our team of experts for treatment, water quality, well site and civil design, electrical and power supply, survey and mapping, and regulatory aspects of the project required.

KEY CHALLENGES AND CONSIDERATIONS

Finding Potential Site Candidates

Our approach assumes that developing the initial list of potential sites will be based on reviewing sites owned by the City and/or vacant areas may be considered as a higher priority. Contacting property owners will not be performed. Our evaluation will simply consider if the site is owned by the City or not. If it is not, our mapping department led by Greg Sebourn, can provide ownership information that may be useful in assigning a ranking score when prioritizing the sites. Our GIS database includes land use information that may also be helpful when comparing and considering sites owned by the City such as parks, and government facilities, and schools in addition to parcels identified as vacant land. For more about this, please see **Figure 1. Potential City-Owned Parcels and Distribution System Constraints** on the next page.

Size of Site Required for Well and Treatment

As noted above, based on our experience, finding and acquiring sites with adequate space to drill and construct a well (e.g. a 100 x 100 ft area) and particularly with added treatment facility space requirements can be very challenging but possible in a developed urban area, such as Fullerton. Our approach will consider the site spacing requirements with focus on preferred well locations that minimize the treatment facilities required. Additionally, if treatment facilities are required, considerations will be given to alternatives for combining treatment facilities for multiple wells or using an existing treatment or well facility that may provide needed space. We have also included on our team treatment experts to review and offer possible alternatives to meet site constraints.

Determining Short List of Site Candidates and Prioritizing Sites

It is our understanding that the City will provide a list of 15 to 20 potential sites for consideration. We may also identify additional sites based on available information. Through our initial data review and using our intimate knowledge of the City's service area, we will be able to prepare our opinion of the sites and narrow all the potential locations down to a preliminary list of up to five sites, and then ultimately prioritizing the top five. Our approach for doing this includes collaborative workshops with the City. The first workshop will review and discuss all 15- 20 sites to determine to top five. A second workshop will be conducted after our detailed analysis of these top five sites are completed to discuss the scoring and ranking of each of the sites to determine priority. These workshops are intended to be a collaborative environment to discuss and brainstorm all aspects of the data, findings, alternatives, recommendations, and rankings of sites. We have assembled a team of experts as shown on our proposed Organizational Chart that will provide input prior to and participate at these workshops. Site visits will also be conducted for each of the top five potential sites.

Site Priority and Scoring Matrix

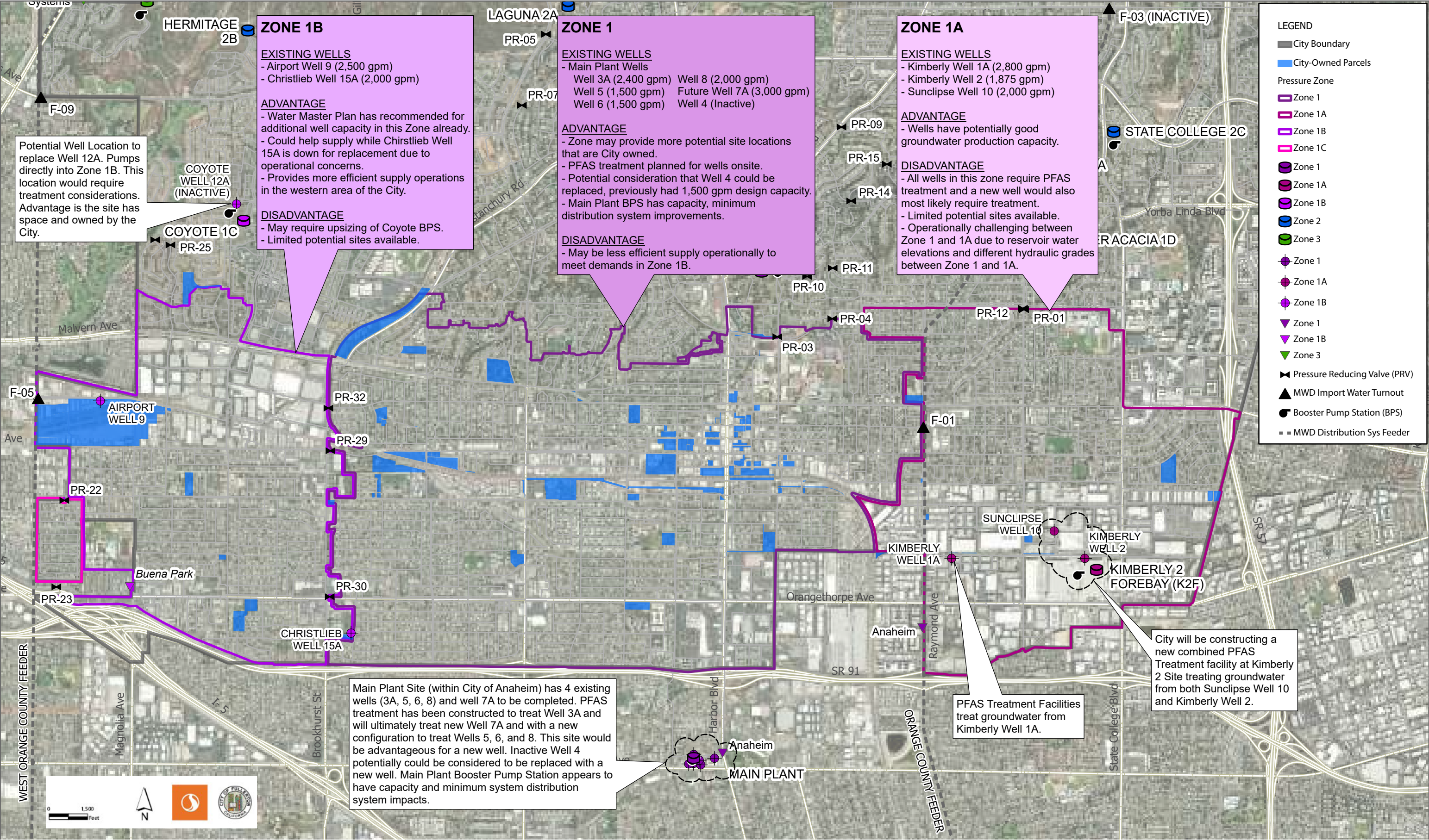
Our team will evaluate the potential locations and rank up to five of the most feasible potential well sites. Evaluation categories will be assigned raw scores based on evaluation criteria that would make the site more or less favorable as a well site. The potential well sites will be ranked based on criteria identified, and agreed upon, with input from the City. The ranking of the sites is a function of the weighting factor and the assigned raw score for each evaluation category. The product of the weighting factor and raw score will result in a weighted score for each category. The sum of the weighted scores will result in a final score that is ranked relative to the other sites. The site with the highest weighted score will be ranked first, the next highest score will be ranked second and so on. An example of our ranking methodology is outlined in the table below.

SCORING AND RANKING MATRIX					
EXAMPLE EVALUATION CATEGORY	EXAMPLE WEIGHTING FACTOR	EXAMPLE SCORING			
		Site 1		Site 2	
		Raw Score ^A	Weighted Score ^B	Raw Score ^A	Weighted Score ^B
Existing System/Hydraulic Impacts	0.20	8	1.6	6	1.2
Groundwater Quality	0.20	8	1.6	6	1.2
Proximity to Nearby Wells	0.10	6	0.6	6	0.6
Adequate Space to Drill the Well	0.20	9	1.8	10	2.0
Ability to Acquire the Property/Property Easement	0.20	6	1.2	8	1.6
Neighboring Land Uses	0.10	4	0.4	8	0.8
Proximity to Existing Pipeline/Electrical Systems; Hydraulic Location	0.10	4	0.4	8	0.8
Anticipated Overall Cost	0.10	7	0.7	4	0.4
Total	1.00	N/A ^C	8.3	N/A ^C	8.6

A) Raw score between 1–10. This is a subjective value based on the presence/absence of favorable site criteria.

B) Weighted Score – the product of the weighting factor and raw score. C) N/A = Not Applicable

FIGURE 1. POTENTIAL CITY-OWNED PARCELS AND DISTRIBUTION SYSTEM CONSTRAINTS



SCOPE OF WORK

Task 1–Kick-Off Meeting

We will coordinate and facilitate a project kick-off meeting with the City staff to discuss the objectives of the project, scope, review of potential sites and criteria, lines of communication, data collection requests, and the project schedule. The meeting will be conducted by our project manager and attended by other key team members, including the TH&Co key members. Two days prior to the kickoff meeting, we will provide an agenda of the topics to be discussed. After the meeting, we will submit meeting notes for distribution, along with a PowerPoint presentation material, for all those in attendance. The budget for this task assumes the kickoff meeting will take place at the City's office in Fullerton.

Task 2–Project Management

We will organize, schedule, and conduct progress meetings with City staff to report on the progress of the project, review existing data, preliminary site analyses and findings, and discuss questions we may have for the City. We assume four such progress meetings (with two meetings held in person, and others assumed virtual). Meeting agendas will be prepared and distributed a minimum of two days prior to the meetings. Meeting minutes, along with PowerPoint presentation material, will be provided within three days after the meeting. We will maintain frequent and clear communication (via email and phone calls) with the City to be sure expectations are met while meeting the project's budget and schedule anticipated.

We will also prepare a PowerPoint presentation and attend a City Council meeting to discuss the results of the final well siting report to City Council. A draft of the PowerPoint presentation will be provided for City staff review with review comments incorporated before providing the final presentation in appropriate time required before the Council meeting.

In addition to the meetings and coordination required, our Project Manager will conduct the necessary management activities including maintaining an updated project schedule, organized by task and clearly defining milestones. Project status reports can also be provided to accompany monthly invoices to provide an accurate accounting of work performed, work progress, and budget status.

Our project deliverables will be reviewed for quality assurance and quality control (QA/QC) by our management and technical advisory leaders, who will be led by our QA/QC leader, Jim Cathcart. We have made a significant investment in our overall quality management process to achieve your goals.

Task 3 – Considerations for Feasibility Study

We will evaluate the 15 to 20 potential sites to be provided by the City. Our team also may supplement the City's list with up to 5 different locations for consideration based on readily available information and knowledge of the City's water system and groundwater basin. The list of potential well sites will be narrowed down to a list of three to five sites and ranked to determine the most feasible list for potential well locations. Evaluation of the top three to five sites will include the following:

- a. Proximity to residences/businesses – not only will noise and construction impacts be considered for each vicinity to residential and business neighborhoods, but also operational concerns, traffic, and potential visual aesthetic impacts and mitigation measures that may be required.
- b. Site accessibility – sites will need to be accessible from the public right of way, and large enough for construction equipment and maintenance trucks, along with the potential for fire department access requirements if determined necessary.
- c. Ideal system hydraulic location – this will determine distribution system improvements, operational constraints, and provide the recommendations that minimize improvement impacts and most supply benefit to the distribution system.
- d. Ability to purchase or acquire adequate real estate for the proposed well site – our analysis will determine land uses including vacant land and score the site based on whether the site is owned by the City or not.
- e. Proximity of power supply and other infrastructure and needs- power facilities close within the vicinity will need to also have the power capacity required for the site
- f. Potential of water quality treatment needs regarding VOCs, PFAS, iron, manganese, color and odor, and other known contaminants – this will determine treatment facility requirements, we will investigate minimal site impacts due to potential site constraints
- g. Overall projected cost, including cost of the new well and other costs associated with site improvements, well equipping, distribution system improvements, and treatment facilities required – the City's and our experience will be used to develop costs based on recent bid information for similar projects
- h. Effect on neighboring wells (potential for impact and potential groundwater interference on existing wells)
- i. Potential production capacity for the proposed new well(s) based on nearby wells
- j. Size and depth of proposed well and casing recommendations

Subtask 3.1: Preliminary Investigation and Data Review

Our team will obtain and review existing well records and reports from the City, OCWD, and any other relevant agencies in the area for use in evaluating potential well sites. Through our teams' thorough work with the City of Fullerton and other projects in northern Orange County, we already have many of these items on hand but we will want to confirm we have the latest and most updated information available. The reports and data will include:

- Well locations
- Borehole lithologic logs and geophysical logs
- Isolated aquifer zone testing data including depth-specific groundwater quality and yield
- Well recent construction and operation information
- Pumping test data
- Historical groundwater levels, including OCWD groundwater contour maps
- Geologic cross sections
- Orange County and City of Fullerton service boundaries
- Groundwater quality data
- Data and reports related to the Orange County North Basin Plume
- GIS shapefiles of the existing and planned water distribution system
- Land use data from areal imagery (e.g. Google Earth)
- Parcel boundaries from the Orange County parcel shapefile
- Drinking water well regulations and standards

In addition to the data sources cited above, other potential sources of data may include the United States Geological Survey (USGS), California Statewide Groundwater Elevation Monitoring (CASGEM), California Department of Water Resources (CDWR), and State Water Resources Control Board (SWRCB) Geotracker. This scope of work and cost estimate assumes that all data utilized in the study will be existing and does not include the collection of new data through borehole drilling, collection of groundwater samples, etc.

Subtask 3.2: Preliminary Short List Workshop

Based on our desktop review of the data collection and initial review of the sites provided by the City, we will conduct a workshop to discuss the list of the 15-20 sites. This workshop will be used to discuss collaboratively our team's findings and recommendations with the City staff, which may include additional sites. This is intended to be a brainstorming type of discussion where all thoughts, knowledge, and insights are brought to the meeting to reduce the number of potential sites and identify a short list of the top 5 locations. Our Project Manager will lead the discussion, with our team's key staff present and will be held at the City's offices. All relevant and key City staff, including operations, will be invited to attend.

Subtask 3.3: Analysis of Hydrogeological Considerations

Stantec's hydrogeologist and subconsultant, TH&Co will review existing borehole lithologic logs, groundwater level data, geologic cross sections and describe regional aquifer system in the area. We will also analyze data regarding permeability, storativity, and transmissivity and/or well yield from existing wells. TH&Co will review OCWD groundwater contour maps to illustrate the direction of groundwater flow in the Study Area.

TH&Co will analyze potential groundwater quality issues or other potential point sources of groundwater contaminants, using available data. Water quality data and reports from the City, OCWD, and the Orange County North Basin Plume will be reviewed. PFAS data from production and monitoring wells will be analyzed spatially and over time. The most recent plume maps will be reviewed and compared against OCWD groundwater contour maps to assess potential plume migration. OCWD hydrogeological cross sections will be reviewed to assess aquifer depths including the depth of the Deep Aquifer which may have color and odor water quality concerns. Potential point sources (e.g. inactive and active/open groundwater cleanup sites) will be obtained from the SWRCB Geotracker website.

Stantec's hydrogeologists have worked with TH&Co hydrogeologist for many years to create innovative solutions for clients.

Subtask 3.4: Analysis of Hydraulic Considerations

Based on our experience with analyzing the City's model, we will be able to provide initial recommendations and input for the larger group of 15-20 sites and the impact or benefit each may offer. For example, Zone 1B already is recommended for a new well in the Water Master Plan which will provide the most benefit hydraulically. For the analysis of the other top 5 sites to be evaluated, we will use the hydraulic model Stantec created, calibrated, and updated for the recent Water Master Plan. We will update the model to include a separate scenario run for each. Analyses will be simulated for 72-hour extended period simulations (EPS) for average day and maximum day demand conditions for the near-term (5-10 years) and future system (20 years and beyond) demand conditions. Results will include capacity evaluations of the conveyance pipelines and pump stations as well as operational constraints and recommendations for the pumping and storage facilities.

Subtask 3.5: Desktop Analysis of Logistical Considerations

Our team will review online aerial imagery to identify parcels with enough space for drilling equipment, and possible future water treatment plants. Parcels located on City-owned will be prioritized. Our review will include existing and future land uses based on the City's General Plan. Each of the top five sites, will be analyzed for site spacing for equipping and facility layout, property boundaries, access requirements, visual and aesthetic considerations, impacts to the vicinity, water system improvements, storm drain, and sewer manhole locations and potential improvements required, and consider other potential contaminating activities.

Subtask 3.6: Site Visits

We will conduct field visits to verify existing conditions of each of the sites on the preliminary short list (assumes of up to five sites). Our team will visit each of the five potential sites to verify land use, rig access, overhead/underground utilities, room to drill and construct the wells, options for discharge water, potential sources of water for drilling, neighboring land uses, and access for future well maintenance. We will document all aspects of the potential site visits with photos and field notes. The budget for this task assumes the site visits can be conducted in one day.

Subtask 3.7: Site Prioritization

We will discuss and review a preliminary list of criteria and weighting factors with the City prior to beginning the ranking analysis. Based on our experience, we will analyze each of potential well sites with respect to the following list of preliminary categories:

- Impacts to operations of distribution system
- Distribution system improvements required
- Electrical load requirements and power capacity available
- Capacity and proximity of sewer and storm drain facilities
- Proximity to residences and businesses
- Ease of property acquisition and/or easement (private or public parcels and whether purchase may be required)
- Proximity to existing wells (remediation and production wells)
- Proximity to existing distribution and electrical systems
- Potential well yield
- Potential for groundwater quality issues
- Proximity to potential contaminating activities
- Adequate space to drill the well
- Drilling rig access
- Proximity to potential contaminant sources

Potential well yield will be evaluated through an analysis of existing well production data, pumping test data, and lithologic characteristics of sediments in the area. Potential pumping interference with nearby wells will be evaluated analytically based on pumping test data and distances—no groundwater modeling is included in this scope of work. Groundwater quality issues will be evaluated based on data collected from groundwater wells but will also include a review of potential point source contaminants, as documented on the SWRCB Geotracker website and the Environmental Protection Agency website.

It is noted that individual site access and drilling considerations will be assessed during the site visits. As-built drawings will be requested from the City and a utility search will be conducted for the vicinity of each site.

Each the five potential well sites evaluated for this study will be ranked according to the evaluation categories as previously described, although criteria will be reviewed and agreed upon with the City prior to beginning the analyses. Each evaluation category will be assigned a subjective weighting factor (e.g. 0.05 to 0.20) based on its relative importance to selecting a site. The weighting factors will be assigned based on input from the City. Evaluation categories will be assigned raw scores based on evaluation criteria that would make the site more or less favorable as a well site.

The ranking of the sites is a function of the weighting factor and the assigned raw score for each evaluation category. The product of the weighting factor and raw score will result in a weighted score for each category. The sum of the weighted scores will result in a final score that is ranked relative to the other sites. The site with the highest weighted score will be ranked first, the next highest score will be ranked second and so on.

Subtask 3.7.1: Well Siting Ranking Workshop

This second workshop, the Well Siting Ranking Workshop will be conducted to discuss scoring criteria and ranking of the group of five potential sites. We will prepare a PowerPoint presentation that summarizes each of the five potential sites, the preliminary list of ranking categories, weighting factors, and scoring matrix. For each alternative site, we will ask for input from the City staff regarding additional concerns, site challenges, or even additional criteria or changes to the scoring. This workshop will be a working environment to flush out concerns and benefits each site may offer with its appropriate ranking. Following the workshop, we will provide an updated set of criteria and scoring matrix for the City's review.

Subtask 3.8: Prepare Feasibility Study Report

Once the scoring matrix and site prioritization is complete and agreed upon, we will prepare a draft Well Siting and Feasibility Study report and submit for City review. We assume the City will require 30 days for review and provide comments. Based on the review comments received, we will incorporate the comments and revisions and submit a draft 95-percent complete report

for City review. We assume 14 days for this 95-percent review. A final Well Siting and Feasibility Study report will be prepared based on the comments and submitted to the City. As noted in Task 2, the City Council PowerPoint presentation will be prepared and submitted for review when the final 95-percent draft review comments to the report are received. City Council PowerPoint presentation material is assumed to be reviewed two times prior to issuing final presentation.

Task 4 – Coordination with the City

We will provide frequent, clear communication between the City's staff and Stantec throughout the project. We will answer any questions from the City and keep all personnel involved updated with project progress to ensure that deadlines are met. The budget for this task is spread among the previous Tasks 1, 2, and 3.

Task 5 – Coordination with the OCWD

Potential sources of data needed throughout the project include coordination with other water districts, including OCWD to obtain existing well locations, water quality information, and pumping test information. Our hydrogeologist, TH&Co, will lead this coordination and prepare a data request for OCWD and utilize this information to avoid water quality issues (including potential plume migration and current PFAS characterization), minimize potential well interference, and will identify the advantages and disadvantages of each potential well site. We assume the coordination includes one meeting with OCWD and follow-up coordination in the form of phone calls and emails as necessary.

Task 6 – Coordination with Local Hydrogeologist

Stantec's subconsultant, TH&Co will serve as the local, California licensed hydrogeologist, subcontracting to Stantec. TH&Co has extensive knowledge of the hydrogeology of the Orange County Groundwater Basin. The budget for this task assumes that the time to review hydrogeology data, including basin conditions and well data, is allocated for in Task 3. Additionally, Stantec's resident hydrogeologist will provide technical advisory services and quality assurance and control between the Stantec and TH&Co team.

Task 7 – Regulations and Standards

Our team will evaluate the local, state and federal regulations for drilling and construction of a future municipal well within the City's boundaries. Stantec's team and our subconsultant's team are very familiar with California Department of Water Resources (DWR) Well Standards Bulletins 74-81 and 74-90, which have specific requirements for water well drilling and construction, including sanitary seal installation depths for municipal wells, and minimum horizontal separation as well as the Orange County Health Care Agency's and, as appropriate, the City of Anaheim Public Utilities' well permitting requirements. The budget for this task is allocated into Task 3.

Well Siting Feasibility Study

Los Angeles County Fire Camp 19, Azusa, CA

Stantec provided hydrogeologic support services for an exploratory drilling investigation at LACFD Camp 19 adjacent to the East Fork of the San Gabriel River north of Azusa. The work was performed to assist LACFD in identifying a potential replacement water well site located outside the 100-year flood zone of East Fork San Gabriel River. The work entailed drilling contractor coordination, lithologic logging and sampling of soils and rock encountered using the sonic drilling method and preparation of final report with recommendations for the possible design and production capability of a new low-capacity water well. Prepared well construction specifications and bid documents for two small-capacity drinking water wells. Stantec provided technical oversight of the drilling, design, construction, development, performance testing and water quality sampling and analysis of the replacement well.

Bairs-Georges Wellfield Evaluation

Inyo County, CA

Stantec provided hydrogeologic support services for this project. We compiled and reviewed available published and unpublished geologic, hydrogeologic, seismic and water well data to identify potential locations and depths of a high-capacity replacement water well. We also prepared a technical memorandum with accompanying geologic map and geologic cross-sections to explain the geologic and hydrogeologic conditions affecting groundwater recharge, discharge, and movement within the project area. Our recommendations for potential replacement well locations and preliminary well designs were presented along with rationale for the selection of each well site.

Subconsultants

About our Subconsultant

Stantec proposes to utilize Thomas Harder & Co. (TH&Co) in the role of Hydrogeologist. We have developed a long-term relationship with TH&Co and we consider them a trusted partner. We will provide them a contract which makes them subject to the same conditions included in our contract with the City. Stantec will work directly with TH&Co as well as provide their compensation for work done on this project. TH&Co will be included in regularly scheduled internal project team meetings and held accountable for meeting our expectations and those of the City. Below we provide information about TH&Co.

About TH&Co. TH&Co has a staff of 14 professional geoscientists who bring extensive experience in site elevation, drilling oversight, and system performance testing. They are locally based in Orange and Los Angeles Counties. TH&Co consists of a team of highly specialized experts in municipal and monitoring well design, well construction management, and groundwater quality.



Demonstrated Experience on Previous Projects. Given TH&Co's team experience and localized expertise, they are uniquely qualified to provide hydrogeological consulting support for this project. The proposed staff has experience with projects in the Orange County Groundwater Basin and having worked with the City of Fullerton. Everyone is based out of their Anaheim office. They are familiar with the City of Fullerton's workflows, requirements for technical specifications, and expectations for future construction management and reporting.

For 30 years, Thomas Harder has been providing technical direction for municipalities to develop sustainable groundwater resources the residents of California. He has played a key role in providing the technical support needed to develop sustainable groundwater resources. Assisting Thomas will be Georgie Aronson who has more than nine years of experience with large-scale basin analysis, well siting, and municipal well design and construction. She recently conducted well siting evaluations for the City of Fullerton, Western Municipal Water District and Santa Clarita Valley Water Agency, plus provided construction management of more than 24 municipal production wells. The proposed TH&Co staff are committed to facilitating an efficient project working with Stantec that meets or exceeds City's schedule requirements.

To learn more about TH&Co's relevant experience, please refer to Section 2 of this proposal where we highlight three TH&Co projects and include references for each. Resumes for TH&Co staff shown in the team organization chart are provided in Appendix A.

Schedule

Please refer to the next page for a breakdown of our proposed schedule.

Current Workload

Our in-house project staff and subconsultant staff has been selected based on workload availability, similar experience, areas of expertise, and a strong understanding of your community. Our key staff have projects winding down and will be available for this project. Stantec has several offices within driving distance to attend meetings and walk the project site, and we pride ourselves on always being available via phone, email, or a virtual meeting. We believe our proposed team is the right fit for your project. Each one of these staff are committed to your project and available throughout the proposed schedule. However, we all understand that unexpected life events occur and your consultant needs to be flexible enough to adapt to changing situations should they occur. Stantec has a deep pool of resources and capability to adapt to any change and pivot toward new directions, as needed.

Proposed Fee (*Provided as a Separate PDF*)

Additional Information and Comments

We have no additional information to provide in this optional section.

Schedule

We have prepared a preliminary schedule, which will be reviewed and updated at the kick-off meeting and the duration of the project, as necessary to reflect schedule changes. The schedule assumes a start date of July 1, 2025.

City of Fullerton Water Well Siting and Feasibility Study CIP Project #53034 Proposed Project Schedule															
ID	Task Name	Start	Finish	Jun	Qtr 3, 2025 Jul	Aug	Sep	Qtr 4, 2025 Oct	Nov	Dec	Qtr 1, 2026 Jan	Feb	Mar	Qtr 2, 2026 Apr	May
1	Notice to Proceed	Tue 7/1/25	Tue 7/1/25		◆ 7/1										
2	Project Management	Mon 7/7/25	Sun 3/8/26												
3	Kickoff Meeting	Mon 7/7/25	Mon 7/7/25		◆ 7/7										
4	Project Progress and Review Meetings				◆			◆			◆		◆		
9	Considerations for Feasibility Study	Thu 7/3/25	Fri 11/14/25		-----										
10	Preliminary Investigation and Data Review	Thu 7/3/25	Wed 7/23/25		■										
11	Preliminary Short List Workshop	Mon 8/25/25	Mon 8/25/25			◆ 8/25									
12	Analysis of Hydrogeologic Considerations	Thu 7/24/25	Thu 9/25/25		■										
13	Analysis of Hydraulic Considerations	Fri 9/12/25	Thu 10/23/25				■								
14	Desktop Analysis of Logistical Considerations	Wed 9/3/25	Tue 10/14/25				■								
15	Site Visits	Wed 9/10/25	Tue 9/23/25				■								
16	Site Prioritization	Fri 10/24/25	Fri 11/14/25					■							
17	Well Siting Ranking Workshop	Wed 11/5/25	Wed 11/5/25						◆ 11/5						
18	Well Siting and Feasibility Study Report	Thu 11/6/25	Tue 4/7/26						-----						
19	Prepare Draft Feasibility Study	Thu 11/6/25	Mon 12/8/25						■						
20	City Review of Draft Feasibility Study	Tue 12/9/25	Tue 1/20/26							■					
21	Prepare 95% Feasibility Study	Wed 1/21/26	Wed 2/18/26								■				
22	City Review of 95% Feasibility Study	Thu 2/19/26	Fri 3/6/26									■			
23	Prepare Final Feasibility Study	Mon 3/9/26	Fri 3/20/26										■		
24	Prepare City Council PPT Presentation	Tue 3/10/26	Mon 3/23/26										■		
25	Present Feasibility Study to City Council	Tue 4/7/26	Tue 4/7/26											◆ 4/7	
26	Coordination with the City	Tue 7/1/25	Mon 4/6/26		-----										
27	Coordination with OCWD	Mon 8/4/25	Mon 9/22/25			■									
28	Coordination with Local Hydrogeologist	Tue 7/1/25	Mon 4/6/26		-----										
29	Regulations and Standards	Fri 9/12/25	Wed 11/12/25				■								

Appendix - Resumes

Resumes of our proposed project team





Jeff Dunn

PE

Project Role:

Project Manager

Years of Experience: 30

Education:

BS, Civil Engineering, California Polytechnic University, Pomona

Registrations:

Professional Engineer #58455, CA

Jeff has experience in water resource planning and engineering for a variety of public agencies. His planning experience includes more than 25 facility master-planning projects, several hydraulic studies feasibility studies and preliminary planning reports for municipal domestic drinking water systems, recycled water delivery systems, and sewer collection systems. He is an expert modeler, having calibrated and analyzed complex water distribution systems supplied from multiple regional and local supply sources delivered to its customers via several pressure zones. His master plans have included preparations of prioritized CIPs incorporating results from hydraulic analyses, operation and maintenance programs, condition assessments, and asset management modeling. Jeff has also been the engineer of record for the design of over 42 miles of pipelines ranging in diameter from 4 inches to 36 inches, several water pump stations, lift stations, well facilities, and storage tanks.

Orange Park Acres Well and Transmission Main Replacement | Irvine Ranch Water District | Irvine, California | Project Manager

Jeff was responsible for the hydraulic evaluations for the proposed well site, including alternatives for site improvements with a forebay due to the hydraulic grade requirements. He also managed design and construction support services for a new transmission main that transports well water supplies to the Orange Park Acres (OPA) service, as well as the future East Orange development area east of Jamboree Road.

Water Master Plan and EPA Well Task for On-Call Hydraulic Modeling Services | City of Fullerton | Project Manager

The City's WMP's prioritized CIP was conducted based on a three-pronged approach that was based on capacity evaluations using a newly calibrated hydraulic model, visual condition assessment of vertical assets, and asset-risk assessment expanding on the Asset Management and Pipeline Rehabilitation and Replacement program. In addition to the WMP and development of the CIP, Stantec performed several tasks under the On-call Modeling services agreement, which included an evaluation of a proposed EPA well and treatment facility to be within Zone 1. Well capacity constraints and system improvements were analyzed and recommended. Jeff acted as the project manager for the on-call Hydraulic Modeling Services provided under this agreement.

Recycled Water Master Plan and Non-Potable Well Supply Siting Study | City of Ontario | Project Manager

As a follow up study to Stantec's Recycled Water Master Plan prepared for the City, Jeff was project manager for this project that involved evaluation of the feasibility and siting of a new non-potable water well supply source in-lieu of a proposed large booster pump station supplying purchased water from the Inland Empire Utilities Agency 1050 Zone. The siting study evaluated 13 potential well sites, including sites containing abandoned and destroyed wells. The analysis of each site was based on City owned properties and criteria such as site constraints, site improvements, basin capacity, basin water quality data, impacts to the existing distribution system, and project costs. Alternatives were discussed in a workshop and ranked using a scoring matrix.

Irvine Desalter/Well Site Development | Irvine Ranch Water District | Project Engineer

Jeff served as project engineer on this project. The IDP consists of five wells located near the I-5 Freeway in Irvine. Salty water is pumped from these wells and sent to the IDP treatment facility. Our team investigated potential well site locations, preparation of record of ownership exhibits, well site acquisition maps, research of utilities in affected adjacent streets, cursory hydraulic analysis of existing sewer and storm drain systems, and evaluation of MTBE treatment requirements at various well sites. Additional tasks included preliminary and final engineering cost estimates and design services.

Talbert Barrier Project, Injection Well Supply System Analysis of Proposed Wells | Orange County Water District | Project Manager

Jeff served as project manager for the data collection, modeling, and analysis of the District's injection well supply system, analysis for three new well sites, and report preparation.

Recycled Water Program Strategy | Inland Empire Utilities Agency | Project Engineer

Jeff has prepared a program strategy for IEUA's future recycled water system to incorporate their member agency's demands plus maximizing recycled water recharge to their spreading basins. A basin implementation strategy was developed along with system model analyses out to year 2035. A 20-year CIP was developed in 5-year increments.

Jeff Dunn, PE

(Continued)

City of Anaheim Water Master Plan Update | Anaheim, California | Water System Planning Lead

Jeff led the water system planning efforts for the City's water master plan update. The WMP focused on updating water demands and use factors, calibrating the existing distribution model, and preparing an asset management program. Jeff analyzed scenarios addressing supply variability between groundwater and imported between the east and west service areas, including impacts to PFAS issues. The goal was to develop an updated plan for capital planning through the 2040 planning horizon.

On-Call Planning Support and Hydraulic Modeling Services | Irvine Ranch Water District | Project Manager

Jeff has performed on-call planning and modeling services, as part of the IRWD staff, located at IRWD headquarters. He prepared model analysis, technical memorandums evaluating facility planning studies, document reviews, and plan check support services. Jeff also supported IRWD staff in preparation of the potable and non-potable water master plans, including recycled water system expansion studies.

On-Call Hydraulic Modeling | Inland Empire Utilities Agency | California | Project Manager

Jeff managed and performed hydraulic modeling services for the Agency's recycled water model using the InfoWater software. Hydraulic modeling was performed to support the Recycled Water Program Strategy and preparation of technical memorandums such as for the WRCWRA supply options, and City of Ontario's Euclid Ave expansion project.

Groundwater Replenishment System (GWRS) Hydraulic Modeling Services and La Palma Basin Analysis | Orange County Water District | Project Manager

Jeff created a complete calibrated model InfoWater of the GWRS pump station, pipeline, and pipeline facilities. The model was combined with their barrier well pump and system for source water considerations. The modeling was calibrated and analyzed to ensure minimum pressures are maintained at Anaheim's power plant under several operating and future flow conditions to their basins.

Water Resources Master Plan Update (WRMP) | Irvine Ranch Water District | Project Manager

Jeff prepared an update of the water supply, demands, and storage chapters of IRWD's 2017 WRMP. The WRMP update revised water demand projections to be consistent with the recent water conservation measures with updated demand factors for each land use. The water supply chapter was revised to include their recent recycled water expansion projects.

Water System Master Plan | City of Orange, California | Project Manager

Jeff managed the water master plan to update the current hydraulic model which included calibrating the model with hydrant flow testing program, analyzing water demand and supply projections, evaluating optimization of supply facility operation, and providing a phased priority-based CIP with cost estimates. Water quality issues were addressed including water age analyses, identifying any deficiencies, and improving water circulation and redundancy within the system.

Water Master Plan | City of Manhattan Beach, California | Project Manager

Jeff managed the water master plan update, which included near- and long-term water supply demands, delivery of adequate flows and pressures for peak demands and fire protection, redundancy for service reliability with diversified water supply sources including groundwater well analyses, and highest efficiency and lowest cost of operation. The master plan included hydrant flow testing and calibration of the City of Manhattan Beach's hydraulic model in InfoWater.



Jim Cathcart

PE, F.ASCE

Project Role: QA/QC, and Alternate Representative

Years of Experience: 47

Education:

MS, Civil Engineering, California State University at Long Beach

BS, Civil Engineering, State University of New York at Buffalo

Fellow, American Society of Civil Engineers, Irvine, California

Registrations:

Professional Engineer #CE014350, NV

Jim has more than 47 years of experience in water supply and development in California. Jim has been responsible for 14 well equipping and/or wellhead treatment design projects, as well as numerous pipeline and pump station designs. He has also conducted several groundwater treatment studies for wellhead water quality compliance. He specializes in the planning, design, and construction management of water, wastewater, and reclamation infrastructure; master planning; ground- and surface water treatment; pumping and storage; and pipeline design. Jim has provided expert witness services for water system design and groundwater contamination issues.

Water Master Planning* | Various Cities, California | Project Engineer/Project Manager

Jim prepared several water master planning studies for Torrance, Fullerton, Oxnard, Thousand Oaks, Capistrano Beach, and Santa Monica, California; and Sunnyside, Washington; as well as for residential and commercial developments. These studies included steady-state and time-dependent computer system modeling. He also completed master plan updates for Torrance and Fullerton.

Well 22B Treatment System* | City of South Gate | South Gate, California | Project Manager

Jim assisted the City in reviewing vendor plans for start-up and operation of Well 22B treatment system using ozone and UV light to remove volatile organic compounds from the well. His assistance included reviewing disinfection options, reviewing start-up and testing plans, and assisting with DHS permitting of the new treatment facility.

On-Call Consulting Services for PFAS Treatment Systems Design | Orange County Water District | Santa Ana, California | Project Manager

Jim is leading a similar staff and subconsultant team for four wellhead treatment sites for the City of Santa Ana. Work includes preliminary design, final design, bid phase support, engineering services during construction, and part time inspection services.

Water Resources Plan | Liberty Utilities Corporation | Downey, , California | Technical Reviewer

Jim provided technical oversight and report editing on a long-range water supply plan for Liberty's (formerly Park Water Company) three water systems in southern California. The plan addressed seven alternatives for meeting future water demands including additional imported water, expanding groundwater production and or increasing groundwater rights, participating in regional recycled water projects, desalination, water banking, and direct potable reuse. Alternatives were evaluated based on per acre foot cost, implementation schedule and availability of alternate water sources.

Hollywood Well Inter-tie* | City of San Juan Capistrano | San Juan Capistrano, California | Principal-in-Charge

Jim conducted project reviews for revising well discharge piping and appurtenances to convert a potable production well to non-domestic service. The project involved several piping interconnections.

Well Equipping Designs* | Cities of Manhattan Beach, Camarillo, and Fullerton | Manhattan Beach, Camarillo, and Fullerton, California | Project Engineer/Project Manager

Jim designed potable water well pump systems for the Cities of Manhattan Beach, Camarillo, and Fullerton.

Wellfield Rehabilitation Study and Design* | City of Whittier | Whittier, California | | Project Manager

Jim led a study that involved a review of existing well casing, pump and motor condition for well depth, size of casing and screen, capacity, and type of driver. He evaluated pump tests and well inspection video surveys. The final report recommended a \$1.3 million well field rehabilitation program. As a follow-on project, Jim managed design and construction assistance of drilling and equipping a 6.5-MGD (million gallons per day) well, building, and transmission piping for the City.

* denotes projects completed with other firms



Thomas Regan

PG, CEG, CHG

Project Role: Technical Advisor - Hydrogeologist

Years of Experience: 42

Education:

BA, Geological Sciences, University of California Santa Barbara

Registrations:

Professional Geologist #5203, CA

Professional Engineer - Certified Hydrogeologist #327, CA

Professional Engineer - Certified Geologist #1655, CA

Thomas (Tom) extensive experience includes groundwater resources management, development, and protection. He has provided analysis of groundwater contamination impacting water supply wells, well siting feasibility, well and well field siting, well design and construction oversight, and well evaluation. His addition experience includes well rehabilitation design and oversight; hydrogeologic and geochemical investigations related to the siting of new and expansion of existing groundwater recharge facilities; analysis of recycled water travel times from groundwater recharge operations using storm water, imported water and recycled water, analysis of pumping test data and well interference effects. Tom's experience also includes the design and implementation of drilling, soil sampling, aquifer testing, and field-testing programs related to groundwater recharge and development.

Well Siting Evaluation | City of Pasadena | Pasadena, California | Project Hydrogeologist

Tom managed and conducted a municipal well siting evaluation related to volatile organic compound (VOC), perchlorate, and nitrate contamination. The evaluation included a review and analysis of historic municipal well operations, monitoring well and municipal well VOC, perchlorate and nitrate data, monitoring well and municipal well lithologic data, geologic and hydrogeologic data, municipal well dynamic spinner log data, and groundwater model and capture zone analysis. The results of the evaluation were presented in a technical memorandum with recommendations for a preferred well site.

Water Well and Groundwater Supply Study | Kern County, California, United States | Project Hydrogeologist

Tom provided hydrogeologic services to support the water supply planning for four proposed solar energy projects near California City and Boron, California. The projects included conducting a well canvass of all water wells in the project areas, preparing well inventory reports that provided details of the well canvass, and developing companion groundwater well inspection and testing work plans to assess the physical condition and operational characteristics of selected wells that could potentially meet the water supply demands of the projects. Detailed well inspection and testing flow charts were developed to provide the methodology for the assessments.

Well Drilling and Construction Support Services | LADWP | San Fernando Valley, California | Project Hydrogeologist

Tom provided field hydrogeologic services for the drilling, construction, and development of five high-capacity water supply wells in South Los Angeles as part of the Manhattan Well Improvement Project. Services included pilot hole reaming lithologic sampling and logging to depths of 1,580 feet, geophysical and caliper log review, well construction oversight, and airlift and swabbing development and airlift testing oversight. Tom also provided field hydrogeologic services for the Groundwater System Improvement Study in the eastern San Fernando Groundwater Basin. Services included pilot hole drilling and pilot hole reaming oversight, including lithologic sampling and logging; collecting discrete-depth Simulprobe groundwater and soil samples; recording penetration rates and drilling fluid properties; monitoring and reviewing geophysical logging of the pilot hole and reamed borehole; triple-completion monitoring well construction to depths of 880 feet; well development; monitoring of bio-fouling treatment and redevelopment of most wells; groundwater sampling; and ZIST pump installation, optimization, and compliance testing activities. Additional field work involved groundwater sampling from a variety of production and monitoring wells in Burbank, Pacoima, and San Fernando using submersible pumps and ZIST purging methods.

Vacaville Hydrogeologic Services | BLC Vacaville | Vacaville, California | Hydrogeologist

As part of land development mitigation measures for a residential development company, Tom conducted a water well siting feasibility study on the mitigation lands; developed a preliminary well design; prepared well construction specifications and bid documents for a new irrigation well; conducted a pre-bid job walk with prospective drilling contractors; provided bid review; helped the client select the drilling contractor; and oversaw the drilling, discrete-depth zone sampling, design, and construction of a 2400-foot-deep, high-capacity irrigation well in an area where the deepest wells were less than 500 feet and produced marginal quality groundwater. He provided recommendations for a design discharge rate, 1800 gpm, and pump setting. The water quality was considered excellent to irrigate historically grown crops and was approved by UC Davis' Division of Agriculture and Natural Resources.



David Pernitsky

Ph.D, PE, P.Eng

Project Role: Technical Advisor - Water Quality Treatment

Years of Experience: 33

Education:

PhD, University of Massachusetts at Amherst, Environmental Engineering, Massachusetts

MS, University of Alberta, Environmental Engineering, CAN

BS, University of Alberta, Civil Engineering (Co-op), with Distinction, CAN

Registrations:

Professional Engineer - #95428 CA

David has more than 30 years of experience on many challenging studies and design projects involving state-of-the-art technological solutions such as high-rate clarification and filtration, ozonation, granular activated carbon (GAC), ion exchange, membrane filtration, and reverse osmosis (RO). He has worked on the design, construction, commissioning, and optimization of over 100 treatment facilities. David is the author of several sections of American Water Works Association's M37 Operational Control of Coagulation and Filtration Processes Manual. David currently leads Stantec's drinking water community of practice. He is a drinking water treatment subject matter expert and lead resource for Stantec's municipal water treatment projects.

Lynch Canyon Facility Direct Potable Reuse Study | Eagle Petroleum | San Ardo, California | Technical Advisor

David was technical advisor for the preliminary engineering evaluation of a potential water treatment strategy to treat oilfield produced water for potable uses in a water-scarce area. The study included the evaluation of the produced water quality, review of applicable California water recycling criteria, and the conceptual design of a WTP suitable to confirm a reliable, robust, and resilient system capable of ensuring public health protection. The conceptual design of the treatment process included ceramic ultrafiltration, ion exchange, reverse osmosis, UV/AOP, GAC and chlorine addition. It was noted that extensive piloting and verification would be needed prior to full-scale implementation.

Feasibility Study for In-Plant Reuse System at Gold Bar Wastewater Treatment Plant | EPCOR | Edmonton, AB | 2018-2019 | Process Lead

David led an evaluation of the feasibility of using treated wastewater for a variety of in-plant utility water applications currently serviced by potable water at Gold Bar Wastewater Treatment Plant. The study selected three levels of treatment for the various end uses based on California Title 22 regulations, which were used as a regulatory surrogate. Several advanced wastewater treatment process configurations were developed and costed based on the treatment objectives and flows of different end uses. To meet the treatment objectives outlined in Title 22, submerged membrane filtration, disk filtration, and media filtration alternatives, followed by UV disinfection, were considered as candidate treatment technologies. The costs associated with retrofitting the existing in-plant utility water piping made the reuse system less attractive than originally anticipated.

Tertiary Filtration Optimization Study | Central Contra Costa Sanitary District (CCCSO) | Martinez, California | QA/QC

David provided senior QA/QC to the bench-and pilot-scale testing program for the evaluation of alternative coagulants and filter media to optimize the performance of tertiary media filtration at a 54 mgd activated sludge WWTP. The filter run durations needed to be increased and filter performance optimized to meet increasing recycled water demands. Ferric, alum, poly-aluminum and organic polymer coagulants were studied, and the use of zeta potential measurements was evaluated as a means of optimizing coagulant selection and doses.

Pure Water Los Angeles (formerly Hyperion 2035 Program) | Los Angeles Bureau of Sanitation | Los Angeles, California | Deputy Project Manager

David serves as deputy project manager for this project, which has a goal of achieving 70% locally sourced water and recycling 100% of Hyperion wastewater by 2035 to support climate change resilience and drought reliability. This means a major conversion of the City's largest treatment plant, Hyperion Water Reclamation Plant, from current processes and systems, including High-purity Oxygen Activated Sludge secondary treatment and ocean discharge, to a potable water production facility employing advanced wastewater treatment (AWT) processes. As part of a multi-firm team, David is leading Stantec's efforts for developing program management procedures and project management standards for the administration of the future Progressive Design Build contracts that will be used to convert the Hyperion Water Reclamation Plant to an AWT facility (including indirect potable (IDR) reuse and direct potable (DPR) reuse processes).

California Safe and Affordable Funding for Equity and Resilience (SAFER) Program | State of California | California | Technical Advisor

David provided water treatment technical input to various water treatment assignments within this project. This includes assessing options to modify an existing nitrate and uranium IX treatment facility to also reliably remove PFAS for a small system in Lake Morena Views and evaluating treatment options for a small system in San Luis Obispo. GAC and IX-based options are being evaluated



Greg Sebourn

PLS, MASCE

Project Role: Survey and Mapping

Years of Experience: 25

Education:

AS, Survey-Mapping, Santiago Canyon College, California

Registrations:

Professional Land Surveyor #8395, CA

Greg has 25 years of professional experience in numerous aspects of land surveying and mapping. It includes project management; public policy; infrastructure management; client management; and surveying, mapping, and map checking services. Greg knows the City. He is a former council member and mayor of Fullerton. Greg is also a professor at Rio Hondo College, and serves on the Cal Poly Pomona Civil Engineering Advisory Council. Additionally, he serves on the Santiago Canyon College Master Technical Advisory Committee. Greg knows the City. Greg is very active in the land surveying professional community, having served as the California Land Surveyors Association's (CLSA) Director and CLSA's Orange County Chapter President. Greg serves as a Subject Matter Expert for the California Board for Professional Engineers, Land Surveyor, and Geologists. In his spare time, Greg serves as the chair of the Orange County Utility Engineering and Surveying and Institute for the American Society of Civil Engineers.

Interim City Surveyor of Huntington Beach | City of Huntington Beach | Huntington Beach, California | Principal-in-Charge

Stantec is pleased to have Greg currently serve the City of Huntington Beach as the acting interim City Surveyor while the City conducts an extensive recruitment effort. Greg is responsible for map checking, quality control, construction staking, and all land surveying and mapping activities conducted by the City's surveying and mapping staff. Working closely with the City's senior staff, Greg provides consulting services as needed.

Zone A to B and Zone A to C BPS | IRWD | Irvine, California | Project Surveyor

Greg provided land surveying services required to design and build Zone A to B and Zone A to C BPS at PA 5B Eastwood Village. Land surveying and mapping services included aerial control, ROW base mapping, topographic design surveying, and 10-scale mapping.

Pipeline Easements | Los Angeles County Sanitation District | Southern California | Principal-in-Charge

Greg led the effort to conduct boundary and topographic surveys over portions of Los Angeles County Sanitation District's pipeline easements and related properties. The project included several miles of pipeline, as well as properties and easements. The boundary covered several multiple cities. Deliverables included CADD files, point files, GIS .SHP files, Corner Records, and a Records of Survey maps filed with the County Surveyor.

As-Needed Aerial Photography, Topography and/or Planimetric Mapping Services | Los Angeles County, California | Principal-in-Charge and Contract Manager

Since 2016, Stantec has supported 16 task orders, providing surveying services, including professional consultation, design surveys/topographic surveys, monument preservation, ground control, aerial photography/mapping, boundary and encumbrance surveying and mapping.

Joint Outfall "J" Trunk Sewer Unit IE Section 3 Protection at La Rotonda Canyon | Los Angeles County Sanitation District, | Rancho Palos Verdes, California | Principal-in-Charge/Senior Project Manager

For the Los Angeles County Sanitation District, Greg managed digital topographic mapping by field surveying and drafting services for La Rotonda Canyon and protective concrete and grouted riprap improvements approximately 700 feet southwest from the cul-de-sac at the end of La Rotonda Drive within the Trump National Golf Course. Stantec retraced a previous survey and tied new control and monitoring stations to the network. We also provided surface modeling of the Canyon and the Canyon outlet at the Pacific Ocean where a 150-200 foot vertical cliff existed. To collect the surface data, we used conventional and non-traditional methods. Photogrammetry provided for large-scale mapping while terrestrial methods (total stations) created a more detailed data set. Due to the vertical drop and the dangers of working near the slope, Stantec utilized an Unmanned Aerial Vehicle (UAV) to collect surface data without endangering staff safety. Together with the photogrammetric data, terrestrial data, and UAV data, we created a detailed model for monitoring and design purposes. This was the first time LASAN used UAV technology on a pipeline project. The project was delivered on time and on budget.



Roxana Carrillo

EIT

Project Role: Hydraulic/Capacity Analyses

Years of Experience: 10

Education:

BS, Civil Engineering, California Polytechnic University, Pomona

Registrations:

Professional Engineer in Training (EIT)
151537, CA

Roxana is a civil engineer in training in Stantec's Water group. She assists on projects with planning, hydraulic modeling, and technical design of projects including water distribution systems and sewer networks. Roxana's work experience has involved hydraulic model updating and calibrating, water demand and supply analysis, fire flow analysis, and master planning

Engineering Services for Water Master Plan Update | City of Anaheim, California | Anaheim, California | Hydraulic Modeling/Planning Support

Roxana provided hydraulic analyses and report preparation for the Water Master Plan Update to provide a roadmap for long-term capital improvement and water resource planning for the City of Anaheim. Stantec evaluated the system's water supply, water quality, water demand projections, and water resources/improvement planning. In addition, Stantec developed an Asset Management Program using InfoMaster and a 20-year capital improvement plan.

SAMP Report for the URP Phase 9 Student Housing Project | IRWD | Irvine, California | Hydraulic Modeling Support

Roxana provided hydraulic modeling support for this project that Stantec prepared a Sub-Area Master Plan for domestic water, wastewater, and non-potable water systems to serve a proposed 2,800-bed student housing community with multiple buildings, fitness/leasing center, study/market center, and parking structures. Stantec evaluated the proposed infrastructure and impacts to the existing infrastructure for potable water, sewer, and non-potable service.

Fire Flow & Hydraulic Modeling | Eastern Municipal Water District | Perris, California | Hydraulic Modeling Support

Roxana performed hydraulic modeling and fire flow testing of the Eastern Municipal Water District water distribution system. Stantec provided as-needed engineering services in order for the District to continue delivering water services to more than 800,000 users throughout Riverside County.

Hydraulic Model Update and 770 Pressure Zone Analysis | Walnut Valley Water District | Walnut, California | Hydraulic Modeling Support

Roxana provided hydraulic modeling support for this project that Stantec updated and evaluated the 770 Pressure Zone in the hydraulic model of the Walnut Valley Water District potable water distribution system to reflect changes since 2012. The updated model was then used to analyze the impacts to the 770 Zone removing existing pressure regulating stations. Additionally, a new source of supply was included from Cal Domestic that directly supplied the 770 Zone.

Water Master Plan and EPA Well Task for On-Call Hydraulic Modeling Services | City of Fullerton | Hydraulic Model/Planning Lead

Roxana was the lead hydraulic modeler for the Water Master Plan and for the on-call Hydraulic Modeling Services provided under this agreement. The City's WMP's prioritized CIP was conducted based on a three-pronged approach that was based on capacity evaluations using a newly calibrated hydraulic model, visual condition assessment of vertical assets, and asset-risk assessment expanding on the Asset Management and Pipeline Rehabilitation and Replacement program. In addition to the WMP and development of the CIP, Stantec performed several tasks under the On-call Modeling services agreement, which included an evaluation of a proposed EPA well and treatment facility to be within Zone 1. Well capacity constraints and system improvements were analyzed and recommended.



Cole Warrick

PE

Project Role: Well Facility Site Improvements

Years of Experience: 8

Education:

BS, Civil Engineering, California Polytechnic University, Pomona

Registrations:

Professional Engineer #93488, CA

Cole helps water municipalities plan and complete their infrastructure improvements by drawing on his technical expertise in the design of water conveyance, pumping systems, water wells, and water storage. He is a Professional Engineer with eight years of experience in preparing project specific specifications, drawings, cost estimates, and permitting for civil, mechanical, electrical, and instrumentation disciplines in municipal water and wastewater improvement projects.

High Desert Water Bank | Antelope Valley East Kern Water Agency | Antelope Valley, California | Project Coordinator/Project Engineer/ Interim Technical Lead

Cole is currently working on this project that consists of the preliminary design, final design, and construction of approximately 900 acres water recharge basins; five miles of conveyance piping ranging from 96-inches to 12-inches in diameter; a 250 cubic feet per second capacity aqueduct turnout/turn-in facility; and a well field consisting of 27 groundwater recovery wells. As the project coordinator, Cole is responsible for facilitating communications between various disciplines and departments within Stantec, our subconsultant's, and the Antelope Valley-East Kern Water Agency. As a project engineer, Cole played a critical role in the development of the well field layout; the design of the wells including minimum casing diameter and depth; determination of the minimum well site footprints for operations, maintenance, and construction; and design of the mechanical and electrical equipment for each site. As the interim project technical lead, he was responsible for overseeing the preparation of the Stage 3 recharge Systems Improvements design documents consisting of over 130 sheets of fine grading, pipeline plan and profiles, and well pump mechanical and electrical equipping.

Lake Forest Zone B to C Recycled Water Pump Station | IRWD | Irvine, California | Project Engineer

Cole prepared the construction drawings for this estimated \$4.5M construction project and assisted in the preparation of technical specifications for the destruction of Well No. 5 to make room for the Lake Forest Zone B to C Recycled Water Pump Station. He developed the preliminary design report, final design drawings, and final design technical specification deliverables. During construction, he reviewed and responded to Contractor submittals and RFIs. The pump station converts Zone C from an open system floating on the Upper Oso Reservoir to a close loop system. The flow range of the pump station is 0 to 1,700 Gallons Per Minute (GPM).

On-Call PFAS Treatment System Designs | Orange County Water District | Santa Ana, California | Project Civil Engineer

The On-Call PFAS Treatment System Designs consists of the preliminary design, final design, and construction phase support services for wellhead ion exchange treatment facilities at four City of Santa Ana well locations. As the project civil engineer, Cole has been responsible for the preliminary and final design of welded steel yard piping, ductile iron potable water laterals, site grading and paving, and equipment layouts. His duties include distributing and delegating tasks; tracking overall project status; development of preliminary design reports; calculating various design parameters; the preparation of final design drawings; preparation of project technical specifications; preparation of the opinion of probable construction cost; providing bid support services; and reviewing and responding to construction submittals and RFIs.

42-Inch Phase 4 & 5 Magic Mountain Pipeline Extension* | Santa Clarita Valley Water Agency | Santa Clarita, CA | Project Engineer

The Magic Mountain Pipeline Extension consisted of 5,500 linear feet of 42-inch cement-mortar lined and coated welded steel pipe, four isolation and interconnection valve vaults, and ancillary mechanical, electrical, instrumentation, and cathodic protection components. Cole was responsible for the completion of the final design drawings, technical specifications, cost estimates, and engineering services during construction for these two phases. Total construction cost of the two phases was approximately \$6M.

* denotes projects completed with other firms



Tyler Hadacek

PE

Project Role: PFAS/Treatment

Years of Experience: 11

Education:

MS, Environmental Engineering, University of California at Los Angeles

BS, Civil and Environmental Engineering, University of California at Los Angeles

Registrations:

Professional Engineer #84298, CA

Tyler has 11 years of experience in water, wastewater, and water reuse treatment, covering projects from master planning through design, permitting, construction, and commissioning. His experience includes both conventional and advanced treatment and various organic and inorganic groundwater contaminants. Tyler has served as a process engineer on four PFAS treatment systems for the City of Santa Ana and has supported others across the country as a member of Stantec's PFAS workgroup. He has experience in many large-scale drinking water projects including conventional treatment, ozone, and advanced treatment, along with alternative delivery design-build as both an owner's engineer and design-build engineer. Tyler has worked on treatment facilities ranging from distributed/well-head application to full scale plants of up to 500 mgd.

On-Call Consulting Services for PFAS Treatment Systems Design | Orange County Water District | Santa Ana, California | Process Mechanical Engineer

Tyler was responsible for the process, hydraulics, and process-mechanical coordination for all wellhead treatment designs for PFAS with ion exchange. He has been involved in preliminary design, final design, bid phase support, and engineering services during construction. This project includes four distinct sites each with separate design and construction packages ranging from 2,000 to 5,700 gpm. The scope also includes hydraulic analysis of the wells and the City's reservoir and distribution system, design of booster pumps, and upgrades of their onsite hypochlorite generation and feed systems where applicable.

San Fernando Basin Groundwater Remediation Project | Los Angeles Department of Water and Power | Los Angeles, California | Project Engineer

Tyler served as process engineer and design coordinator for the progressive design-build project of two new groundwater treatment facilities of 50 MGD and 25 MGD. He assisted with coordinating the process design for pretreatment solids removal, UV-AOP treatment with hydrogen peroxide, granular activated carbon (GAC) adsorption, and modifications to the chloramination and fluoride chemical feed systems. Tyler also oversaw the value engineering design proposals and evaluations on the project.

Graves Reservoir and Wellhead Water Treatment Design | City of South Pasadena | South Pasadena, California | Process Engineer

Tyler was the process engineer for an 800-GPM wellhead treatment design to remove nitrate, perchlorate, carbon tetrachloride, and tetrachloroethylene from the groundwater to be used as a drinking water source. The design utilized GAC, nitrate-selective ion exchange, and on-site chlorine generation for treatment. Process screening and life-cycle cost evaluation were performed as part of preliminary design for the nitrate treatment process selection, resulting in brine-minimizing, ion exchange technologies.

Trichloropropane (TCP) Impact and Solutions Study | West Valley Water District (District) | Rialto, California | Project Engineer

As project engineer, Tyler was responsible for this study which includes alternatives analysis, preliminary process design, hydraulics, water quality review, and construction cost estimation. The study evaluated two District wells with 1,2,3 TCP contamination, impacts to the District's water supply, and alternative solutions to bring the wells back online, including blending and treatment.



Connie Andera

PE, PMP

Project Role: Regulatory/Water Quality

Years of Experience: 12

Education:

MS, Civil Engineering, University of Colorado at Boulder

BS, Environmental Science, Iowa State University, Ames

Registrations:

Professional Engineer #89666, CA

Connie is an environmental engineer and project manager with 12 years of experience. Connie focuses on water and wastewater treatment design, pump station and conveyance design, and water quality studies and analysis. As a project engineer and project manager for Stantec, Connie works with the water and wastewater treatment group on drinking water, wastewater, water recycling, and water reuse studies and treatment design, pump station designs, plant-scale renovation feasibility studies and water quality studies.

Water Master Plan | City of Fullerton | Fullerton, California | Water Regulations and Water Quality

Connie provided water regulations and water quality services on the City's WMP's prioritized CIP that was conducted based on capacity evaluations, visual condition assessment of vertical assets, and asset-risk assessment expanding on the Asset Management and Pipeline Rehabilitation and Replacement program.

Wastewater Treatment Plant Capacity Assessment | City of Adelanto | Design Team Member and Project Manager

Connie evaluated the headworks and tertiary facilities, was the client-facing project manager, and managed the scope, schedule, and budget. The team evaluated each process at the Adelanto WWTP to evaluate the capacity of all equipment as well as resiliency/redundancy. The team made recommendations in a final report.

Wastewater Treatment Plant Master Plan | City of Arvin | Arvin, California | Project Engineer and Project Manager

Connie was the project manager and project engineer for a master plan to upgrade the wastewater treatment plant to remove nitrogen. The recommendation included converting an Orbal to a membrane bioreactor and disposing the effluent in ponds on site. This project completed on time and on budget.

Water Master Plan Update | City of Manhattan Beach | Manhattan Beach, California | Project Engineer

Connie reviewed the existing water quality data and made recommendations for operational adjustments. Connie provided the content for the water quality section of the Master Plan, including water quality review, summary of future regulations, and any contaminants of concern to the City.

Water System Master Plan Update | City of Orange | Orange, California | Project Engineer

Connie reviewed the existing water quality data and made recommendations for system adjustments. Connie provided the content for the water quality section of the Master Plan, including water quality review, summary of future regulations, and solutions such as flushing the system, water tank operation adjustments, number of chlorination stations, and chlorine dose adjustments.

One Water Los Angeles Master Plan | City of Los Angeles Sanitation, California | Project Engineer

Connie is responsible for technical memos for the Terminal Island Water Reclamation Facility covering the existing and future facilities documentation, short, mid, and long-term planning alternatives evaluation, and capital improvements plan.

Ojai Valley Sanitary District Nutrient Total Maximum Daily Load (TMDL) Upgrades | Ojai, California | Project Manager

Connie managed the scope, schedule, and budget on the project planning, design coordination and civil-process design, and engineering services during construction for the Ojai Valley Sanitary District Nutrient WWTP upgrades to meet new nutrient removal requirements. Project consists of two new 0.75-mgd denitrification filters, retrofitting existing filters to four 0.75-mgd denitrification filters, replacement of oxidation ditch aerators, new chemical storage area, retrofitting existing flocculation tanks, yard piping, and electrical room expansion.

Glenoaks Greenstreets Project | Los Angeles, California | Project Manager

As project manager, Connie led the effort to provide stormwater best management practices (BMPs) in a neighborhood in Pacoima, California. These BMPs include grated inlet structures, drywells, and vegetated bulbouts as a means to infiltrate stormwater and add vegetation within the city.



Bruce Wong

PE, PMP, ENV SP

Project Role: Electrical/Power Supply

Years of Experience: 20

Education:

MBA, Cal Poly Pomona, Pomona, California
 MS, Electrical Engineering, Cal Poly, Pomona, California
 BS, Electrical Engineering, UCLA, Westwood, California
 MS, Engineering Management, Cal Poly, Pomona,

Registrations:

Professional Engineer #18415, CA
 Professional Engineer #26166, NM
 Project Management Professional (PMP)® # 1494856, Project Management Institute

Bruce brings more than 20 years of experience in design of power and control systems for numerous process configurations, including water/wastewater treatment plants. His design expertise includes chemical delivery/containments systems, low-, medium-, and high-voltage power generation/distribution, hydropower generation, high-voltage sub station design, and indoor/outdoor lighting design. Recently, Bruce assisted in the detailed design of two processes for a 16-MGD water recycling plant in the pacific northwest. In Southern California, Bruce has most recently worked with the City of South Pasadena and the Metropolitan Water District of Southern California.

3-62: Westminster Boulevard Force Main Replacement Design | Orange County Sanitation District | Orange County, California | Electrical Engineer

Bruce served as the lead electrical engineer for the preliminary design of the rehabilitation of seal beach station. He designed the electrical room and generator room. Bruce sized the generator and fuel tank. He performed the design using AutoCAD and generated several electrical drawings including single line diagram, electrical room layout, and generator room layout.

Grand Avenue Well Equipping | Three Valleys Municipal Water District | Claremont, California | Electrical Engineer

Bruce worked as the electrical engineer adding the Manual Transfer Switch and Camlock connection box for the portable generator. The project consisted of adding electrical equipment (manual transfer switch, Camlock connection box, and sizing the portable suitable generator) and instrumentation equipment. He was responsible for coordinating with a subconsultant to update as-builts of the electrical drawings. Bruce assisted in reviewing shop drawings and answering RFIs. The project is currently in the construction phase.

Bogert Trail Sewer Lift Station | City of Palm Springs | Palm Springs, California | Lead Electrical Engineer

Bruce designed the distribution power system for the lift station. The project consisted of designing the main service pedestal with utility meter and main breakers and power panel, surge protective device, and step down transformer. A panelboard schedule, light fixture schedule, and conduit schedule were created. The design was completed in 2019.

City of Santa Ana Well 40 | Orange County Water District | Santa Ana, California | Electrical Engineer

Bruce worked as the electrical engineer adding the Automatic Transfer Switch (ATS), emergency standby generator, and soft starter for the booster pump. The project consists of adding electrical equipment (automatic transfer switch, sizing the emergency standby generator, and soft starter) and instrumentation equipment. He was responsible for coordinating with a subconsultant to update as-builts of the electrical drawings. Bruce assisted in reviewing shop drawings and answering RFIs. The project is completed.

City of Santa Ana Well 38 | Orange County Water District | Santa Ana, California | Electrical Engineer

Bruce worked as the electrical engineer for re-design of the electrical distribution system. It included replacing the switchboard, motor control center, VFDs, and adding onsite hypochlorite generation system and soft starter for booster pump. The project consisted of developing the electrical site plan, one line diagram, grounding plan, conduit & cable schedule, duct bank design, and control diagram. The project is currently in the design phase.

Graves Reservoir Replacement Project | City of South Pasadena | San Marino, California | Lead Project Electrical Engineer

As lead project electrical engineer, Bruce designed electrical system for Graves reservoir replacement project. The project was completed by using AutoCAD and the electrical site plan, single line diagram, and conduit schedule were generated for this project. Bruce also coordinated with Southern California Edison (SCE) for upgrading existing power service.



Georgie Aronson

GIT

Project Role: Hydrogeology Task Lead

Years of Experience: 9+

Education:

BS, Geology. California State University, Long Beach

Registrations:

California Geologist-in-Training No. 708, CA

Georgie has more than nine years of professional experience with project management oversight and field inspection on projects involving drilling, construction, development and testing of 24 high-capacity municipal water supply wells and six monitoring wells as well as assisting with the development of detailed Technical Specifications. Georgie's field experience includes lithologic logging during pilot borehole drilling, observation of geophysical logging, aquifer zone testing, well construction, well development, pumping tests, and collection of groundwater quality samples, including PFAS sampling.

Main Plant Well 7 Destruction and Well 7A Construction for the City of Fullerton | Anaheim, California | Project Management and Field Inspection

Provided project management oversight and field inspection during the drilling, construction, development and testing of a 20-inch diameter municipal supply well and destruction of existing Well 7. Well 7A was constructed to a total depth of 1,390 ft below ground surface. The borehole for the well was drilled using a fluid reverse circulation drilling rig. Field tasks included inspection of Well 7 mushroom cap and Well 7A development. In office responsibilities included preparing the preliminary design report, technical specifications, permitting, and assisting with the well completion report.

La Jolla Well No. 3 | Placentia, California | Project Management and Field Inspection

Provided project management and field inspection for Golden State Water Company during the drilling, construction, and development of an 18-inch diameter municipal supply well. The well was constructed to a total depth of 890 ft below ground surface. The borehole for the well was drilled using a fluid reverse circulation drilling rig. Field tasks included inspection of aquifer zone testing, well construction, and collection of samples for water quality analysis, including PFAS sampling, and well disinfection. In office responsibilities include preliminary design report, technical specifications, permitting, well design letter, pumping test letter and the well completion report.

Identification of Potential Well Sites in the Riverside Groundwater Basin | Riverside, California | Site Analysis

Provided data analysis for Western Municipal Water District for an investigation of a potential groundwater extraction well site in the Riverside Basin. Tasks included the analysis of driller's logs, analysis of bedrock depths, reviewing aerial imagery, estimating saturated groundwater thickness, groundwater contour map, analysis of groundwater quality data, and a field investigation at seven potential sites to determine the best feasible location. In office responsibilities included ranking of well sites, and preparation of well evaluation summary report.

Well Siting for the Clark Well Replacement | Santa Clarita, California | Site Analysis

Provided data analysis for Hazen/Santa Clarita Valley Water for an investigation of a potential groundwater extraction well site for a replacement well of Clark Well, which is an older well with groundwater quality issues, and located in close proximity to sewer lines. The evaluation of potential well sites included reviewing data in the Santa Clara River Valley East Groundwater Basin. Tasks included the analysis of driller's logs, analysis of bedrock depths, reviewing aerial imagery and a field investigation at four potential sites to determine the best feasible location. Also provided a ranking of well sites, and preparation of well evaluation summary technical memorandum.

Saugus Formation Well Siting Study | Bradbury, California | Site Analysis

Provided data analysis for an investigation of potential groundwater extraction well site for four new Saugus formation production wells in the Santa Clara River Valley East Groundwater Basin. Tasks for MKN/Santa Clarita Valley Water included the analysis of driller's logs, analysis of bedrock depths, proximity to faults and contaminating activities, reviewing aerial imagery and a field investigation at 13 potential sites to determine the best feasible location for future wells as well as ranking of well sites, and preparation of well evaluation summary report.

City of Riverside - Gage 29-3R | San Bernardino, California | Field Inspection

Provided field inspection during the drilling, construction, and development of a 20-inch diameter municipal supply well. The well will be constructed to a total depth of 1,150 ft below ground surface. The borehole for the well was drilled using a fluid reverse circulation drilling rig. Field tasks included inspection of aquifer zone testing, well construction, well development, and collection of samples for Title 22 water quality analysis, including PFAS sampling. Also assisted with well design letter, and assisting with the well completion report.



Thomas Harder

PG, C.HG

Project Role: Principal Hydrogeologist

Years of Experience: 30+

Education:

MS, Geology (with Honors. Emphasis in Hydrogeology), California State University – Los Angeles

BS, Geology. California State Polytechnic University - Pomona

Registrations:

California Professional Geologist #6512
Certified California Hydrogeologist #588

For more than three decades, Thomas has been providing technical direction for municipalities and private interests to develop sustainable groundwater resources for the economy and well-being of the residents of California. From groundwater recharge projects in the Mojave Desert to basin management and adjudication in southern California to the modeling and management of banking operations in the Kern Water Bank, Thomas has played a key role in providing the technical support needed to guide decisions for basin managers. His expertise spans a wide range of hydrogeological disciplines, including regional groundwater basin analysis, sustainable yield, artificial recharge, groundwater management, groundwater models, contaminant hydrogeology, and water wells.

Construction and Testing of Municipal Production Wells | California, Arizona and Mexico | Technical Lead

Thomas is an established expert in the siting, design and construction of high capacity water wells. During this career, he has provided technical direction and field oversight for the drilling, design and construction of more than 100 high capacity municipal water supply wells throughout Southern California. He has experience in the development of technical specifications, field inspection of the drilling process including borehole logging, inspection of geophysical logging, aquifer zone testing, well construction, well development, pumping tests, water quality sampling, and flowmeter surveys. He has provided technical direction for the design of wells including the evaluation of field borehole logs, cuttings samples, sieve analyses, geophysical logs and zone-specific water quality analyses.

Various Well Rehabilitation Projects | Southern California

Thomas provided technical direction and field oversight for the rehabilitation of multiple high-capacity municipal water supply wells throughout Southern California. His work included development of technical specifications, bid support, initial testing including sidewall sampling and CITM, field inspection of the rehabilitation process, and follow-up pumping tests and water quality testing. Rehabilitation processes have included brushing, bailing, swabbing, air-jetting, combination airlift/swab, and chemical rehabilitation. Wells have included: Chino Basin Desalter Authority (13 Wells), City of Big Bear Lake Department of Water (Mooncamp Well), City of Fullerton (Well 5), City of Murrieta (Adams/Juniper Well), City of Santa Barbara (5 Wells), Golden State Water Company (Yeager Well No. 3), IRWD (Wells 5, 21, 22, 110, and Stockdale West Agricultural Well), Summit Partners, LLC (Elliott Well), Western Municipal Water District (5 Arlington Desalter Wells).

Various Groundwater Modeling Projects | Southern California

Thomas has developed successfully calibrated regional scale groundwater flow models for the Beaumont Basin, Chino Basin, Murrieta Basin, Kern Water Bank, Big Bear Valley, South Fork Kern River Valley, and Tule Subbasin. In addition, he has developed multiple small-scale groundwater flow models for aquifer dewatering, conjunctive use, and contaminant fate-and-transport evaluations. He has extensive experience with the USGS Code MODFLOW including MODFLOW 2000, MODFLOW 2005, MODFLOW NWT, MODFLOW-Surfact, and MODFLOW One-Water.

Various Well Permitting and Environmental Compliance | Multiple Municipal Clients | Southern California | Technical Support and Well Permit Assistance

Thomas has provided technical support for municipal clients developing and obtaining in California Environmental Quality Act (CEQA) documents, Drinking Water Source Assessment and Protection (DWSAP) Permits and reports, NPDES discharge permits, County well permits, encroachment permits. In the last 5 years, Thomas has provided well permit assistance to Golden State Water Company, Three Valleys Municipal Water District, City of Fullerton, Moulton Niguel Water District, and Irvine Ranch Water District.

Various Contaminant Plume Evaluations Projects | Multiple Municipal Clients | Southern California | Plume Evaluations and Technical Assistance

Thomas has conducted multiple contaminant plume evaluations through Orange County, California, including evaluations of the Orange Volatile Organic Compound (VOC) plume (Orange County Water District), El Toro VOC Plume, and VOC evaluations in the Orange County Forebay. Most recently, Thomas has provided technical direction for the design of municipal production wells to avoid shallow VOC concentrations and PFAS for the Cities of Fullerton, Colton, Riverside, and the Santa Clarita Valley Water Agency.



Mathew Hutchinson

Project Role: Hydrogeology Design

Years of Experience: 10+

Education:

BS, Geology. California State University, Fullerton

Mathew has more than 10 years of professional experience including oversight and field inspection on projects involving monitoring well and municipal production well drilling, construction, development, and testing. His experience includes project management, client/contractor coordination, field staffing scheduling, invoice review as well as field inspection of pilot borehole drilling and logging, geophysical logging, isolated aquifer zone testing, well construction, well development, pumping tests, and collection of groundwater quality samples, including PFAS sampling. He has also provided inspection of lining and repair of existing wells, well destruction, CPTs, piezometers, and pressure transducer installations. In his ten years of experience with Thomas Harder and Company, Mathew has inspected the destruction of six non-operating wells, the drilling and installation of 19 small diameter monitoring wells, and the drilling and installation of 29 large diameter municipal wells, and 2 slant wells.

Western Municipal Water District – Arlington Desalter Rehabilitation | Riverside, California | Project Management and Onsite Field Inspector

Mathew provided project management and onsite field inspection during rehabilitation and testing of three 16-inch diameter municipal supply well. The wells were constructed to depths between 150 to 200 ft below ground surface. Project management tasks included provide daily updates to client and coordination with contractor. Mathew also provided review of submittals, QC of contractor invoices, as well as scheduling and staffing coordination.

City of Riverside – Gage 29-3R | San Bernardino, California | Project Management and Field Inspector

Mathew provided project management and field inspection during the drilling, construction, and development of a 20-inch diameter municipal supply well. The well will be constructed this year to a total depth of 1,150 ft below ground surface. The borehole for the well was drilled using a fluid reverse circulation drilling rig. His field tasks included lithologic logging of pilot borehole, monitoring of drilling fluids, inspection of aquifer zone testing, well construction, well development, short and long-term pumping tests, and collection of samples for Title 22 water quality analysis, including PFAS sampling. Mathew's in office/managing responsibilities included attending pre-bid and project meetings, providing daily updates to the client, completing the well design letter, pumping test letter, and the well completion report.

City of Riverside – Gage 29-2R | San Bernardino, California | Project Management

Provide project management during drilling, construction, and testing of a 20-inch diameter municipal supply well. The well was constructed to a depth of 990 ft below ground surface. Provide daily updates to client and coordination with contractor. Review of submittals. Review and QC of contractor invoices. Scheduling coordination and training with field staff. Field tasks included inspection of casing and on-site materials, and Title 22 groundwater sampling.

Miramonte Well 1 and 4 | Los Angeles, California | Project Management and Field Inspector

Mathew served as project management and field inspection for this Golden State Water Company project during the drilling, construction, and development of a 20-inch diameter municipal supply well. The well will be constructed this year to a total depth of 1,150 ft below ground surface. The borehole for the well was drilled using a fluid reverse circulation drilling rig. His field tasks included lithologic logging of pilot borehole, monitoring of drilling fluids, inspection of aquifer zone testing, well construction, well development, short and long-term pumping tests, and collection of samples for Title 22 water quality analysis, including PFAS sampling. In office/managing responsibilities included attending pre-bid and project meetings, providing daily updates to the client, completing the well design letter, pumping test letter, and the well completion report.

Three Valleys Municipal Water District Kiowa – Well No. 1 | Apple Valley, California | Field Inspector

Mathew provided field inspection during the drilling, construction, development and testing of an 18-inch diameter municipal supply well. The well was constructed to a total depth of 590 ft below ground surface. The borehole for the well was drilled using a fluid reverse circulation drilling rig. His field tasks included lithologic logging of the pilot borehole, monitoring of drilling fluids, geophysical logging, inspection of aquifer zone testing, inspection during well construction, and well development by pumping and surging.



Thomas Feistel

PG, CEG

Project Role: Hydrogeology Design Support

Years of Experience: 10

Education:

BS, Geology. California State University, Fullerton

Registrations:

California Professional Geologist #9590
California Engineering Geologist #2799

Thomas' more than 10 years of experience includes worked on a broad range of projects spanning from engineering geology to his current work in hydrogeology. His engineering geology focused on earthwork and foundation design, including working on large hillside mass grading projects, conducting extensive geologic field investigations, mapping landslides including determining their rupture surfaces and potential mitigation measures. Thomas' work in hydrogeology has focused on municipal production well siting, construction, development, and testing. Projects he has worked on have been constructed in both bedrock and alluvial formations and included lithologic logging and observation of geophysical surveys, isolated aquifer zone testing, well construction, well development, pumping tests data collection and analysis, and collection of groundwater quality samples (including PFAS sampling). He has also been involved in data and aquifer analysis and report writing for these wells. Thomas also oversees groundwater monitoring wells with transducers in the Central Valley area.

Well Siting for Yorba Linda Water District – Well 23 | Anaheim, California | Data Analyst

Thomas provided data analysis for an investigation of a potential groundwater extraction well site. The site was evaluated for existing constituents of concern and the preliminary well was designed specifically to mitigate arsenic, manganese, and total dissolved solids in the future well. Major tasks included the analysis of driller's logs, water quality data for over 20 wells surrounding the area, and analysis of site/aquifer subsurface conditions. An evaluation of the site was presented in a preliminary design report.

Well Siting and Feasibility Study Near Newman | Newman, California | Data Analyst

Thomas provided data analysis for an investigation of a potential groundwater extraction well site in the outside area near the City of Newman in Stanislaus County. The analysis included evaluation of driller's logs, and groundwater quality data from surrounding wells, and existing aquifer conditions as they relate to the larger subbasin. An evaluation of the site was presented in a preliminary design report.

Beaumont-Cherry Valley Water District – Well 1A | Beaumont, California | Project Manager and Field Inspector

Thomas provided during the drilling, construction, and development of a 20-inch diameter municipal supply well. The well will be constructed this year to a total depth of 875 ft below ground surface. The borehole for the well was drilled using a fluid reverse circulation drilling rig. Management of field tasks including lithologic logging of pilot borehole, monitoring of drilling fluids, inspection of aquifer zone testing, well construction, well development, short and long-term pumping tests, and collection of samples for Title 22 water quality analysis, including PFAS sampling. Other management responsibilities include ensuring well construction meets approved standards, attending client meetings, analyzing water quality data and well testing data, writing the well design and pumping test, and the well completion reports.

Orange County Parks/Orange County Public Works – Mile Square Park Irrigation Well | Fountain Valley, California | Project Management and Field Inspector

Thomas provided project management and field inspection during the drilling, construction, and development of a 14-inch diameter supply well. The well was constructed to a depth of 275 ft below ground surface. The borehole for the well was drilled using a fluid reverse circulation drilling rig. Field tasks overseen by Mr. Feistel included lithologic logging of pilot borehole, monitoring of drilling fluids, well construction, well development, and short and long-term pumping tests. Management responsibilities included project management meetings, daily updates to the client, invoice review, writing the well design, pumping test, and well completion reports.

Eastern Tule Groundwater Sustainability Agency Land Subsidence 2023 - 2024 Annual Report | Tulare County, California | Data Analyst

As data analyst, Thomas work on data collection and analysis throughout the year for the Eastern Tule Groundwater Sustainability Agency (ETGSA), focusing on groundwater levels and land subsidence elevations. Analyze year to year groundwater elevation and land subsidence data in order to determine the current, as well as projected rates of subsidence in the ETGSA. Work on determining possible ways to expand the groundwater data collection and land subsidence elevation networks including: designing and installing new groundwater monitoring wells and new survey benchmark locations.



Stantec is a global leader in sustainable architecture, engineering, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

City of Fullerton

Fee Proposal for a Water Well Siting and Feasibility Study
CIP Project #53034





Stantec Consulting Inc.
38 Technology Drive, Suite 200
Irvine, CA 92618

April 28, 2025

Attention:
Deborah De Bow
City of Fullerton, Public Works
Department Engineering Division
303 W. Commonwealth Avenue
Fullerton, CA 92832-1775

Reference: Response to Request for
Fee Proposal for Water Well Siting and
Feasibility Study
CIP Project #53034

Submitted via email to:
Deborah.Debow@cityoffullerton.com

Dear Deborah and Selection Committee,

Stantec is pleased to submit this fee proposal in response to your RFP for a Water Well Siting and Feasibility Study. Per the RFP, we submit this fee proposal separately from our technical proposal.

Our fee proposal on the next page includes the estimated labor hours, rates and costs for each individual broken down by task according to our proposed scope of services. Hours and staffing rates for our subconsultant, Thomas Harder & Company (TH&Co) has also been provided, including other direct costs. Our total estimated fee for all tasks is \$162,000 and is summarized below.

Task	Stantec Fee	TH&Co. Fee	ODC	Total Fee
1. Kick-Off Meeting	\$1,948	\$3,270	\$0	\$5,218
2. Project Management	\$12,889	\$15,390	\$0	\$28,279
3. Considerations for Feasibility Study	\$76,450	\$41,640	\$545	\$118,635
4. Coordination with the City	<i>Fee Spread Among All Other Tasks</i>			
5. Coordination with OCWD	\$1,084	\$3,380	\$0	\$4,464
6. Coordination with Local Hydrogeologist	<i>Fee Spread Among All Other Tasks</i>			
7. Regulations and Standards	\$2,534	\$2,870	\$0	\$5,404
Grand Total	\$94,905	66,550	\$545	\$162,000

Our proposed fee will be invoiced and is based on a time-and-materials not-to-exceed fee basis based on our experience successfully completing the scope of work for other similar projects. It is noted that no additional work outside the assumptions and scope provided in our proposal will be conducted without written approval from the City. Our proposed rates will be effective throughout the duration of the project.

Our fee proposal is valid for a period of 90 days from the date as shown on this submission.

I am authorized to negotiate and approve any requested changes to the scope and fee estimate. I am happy to discuss our fee and scope, and to make adjustments to best fit the City's needs for this project.

Should you have any questions, please call me using the number listed below. We look forward to and are very excited for the opportunity to again be of service to the City of Fullerton.

Sincerely,
Stantec Consulting Inc.

Jeff Dunn, PE
Principal, and Project Manager
Mobile Phone: (949) 521-3110
Email: jeff.dunn@stantec.com

H. Proposed Fee Estimate for a Water Well Siting and Feasibility Study

CIP Project #53034



<div><div>STANTEC</div><div>Project Billing Rate</div><div>Total Hours</div><div>Fee</div></div>		STANTEC										Thomas Harder & Co.							
		Cathcart, Jim	Regan, Thomas	Pernitsky, David	Dunn, Jeff	Carrillo, Roxana	Warrick, Cole	Hadacek, Tyler	Adera, Connie	Wong, Bruce	Sebourn, Greg	Tom Harder	Georgie Aronson	Matthew Hutchinson	Thomas Fiestel				
		\$275	\$275	\$275	\$267	\$220	\$220	\$250	\$250	\$250	\$267	\$240	\$210	\$155	\$135	\$110	\$90		
		10	6	4	112	190	30	18	18	20	10	44	54	170	116	6	22		
		\$2,750	\$1,650	\$1,100	\$29,904	\$41,800	\$6,600	\$4,500	\$4,500	\$5,000	\$2,670	\$10,560	\$11,340	\$26,350	\$15,660	\$660	\$1,980	\$545	

Task	Description	Hours																								
1	Kick-Off Meeting				4	4							6	6	4	4										
2	Project Management	8	2	1	32	6							12	16	48	10	4									
3	Considerations for Feasibility Study	0	5	3	60	168	30	18	10	20	10		22	32	90	102	6	14	\$545							
3.1	Preliminary Investigation and Data Review				2	4	1	1		1	1		2	2	8	24		1	\$220							
3.2	Preliminary Short List Workshop				4	4	1	1		1	1		2	2	16		1									
3.3	Analysis of Hydrogeologic Considerations		2		4								4	6	12											
3.4	Analysis of Hydraulic Considerations				12	88																				
3.5	Desktop Analysis of Logistical Considerations			1	8	24	16	12	8	16	8		2	6	8	16	8									
3.6	Site Visits				6		8								2	10		\$110								
3.7	Site Prioritization												4	4	8	12										
3.7.1	Well Siting Ranking Workshop		1				2	2					4	4	8											
3.8	Prepare Feasibility Study Report		2	2	24	48	2	2	2	2			4	8	28	40	6	4	\$215							
4	Coordination with the City	Spread among all other Tasks																								
5	Coordination with OCWD	2			2								2	2	16											
6	Coordination with Local Hydrogeologist	Spread among all other Tasks																								
7	Regulations and Standards				2					8			2	4	10											
Project Summary																				395	412	807	\$94,905	\$66,550	\$545	\$162,000



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