



CITY OF FULLERTON ON-CALL PROFESSIONAL ENGINEERING SERVICES

JIG CONSULTANTS HOURLY RATE SCHEDULE

The following hourly rates will be used for this contract and will remain effective until June 30, 2022.

<u>Project Team Member</u>	<u>Hourly Billing Rate</u>
Administrative Assistant	\$ 56 / hr.
Utilities and Permitting Assistant	\$ 80 / hr.
CAD Designer	\$ 100 / hr.
Civil Designer	\$ 106 / hr.
Civil Engineer	\$ 132 / hr.
Project Engineer	\$ 145 / hr.
Senior Project Engineer	\$ 170 / hr.
Quality Control Officer	\$ 170 / hr.
Project Manager	\$ 170 / hr.
Principal Engineer	\$ 180 / hr.

Reimbursables:

1. Standard computer and technology costs are incorporated into these hourly rates as well as direct labor, overhead, fringe benefits and fee.
2. Mileage at \$0.56 per mile (or current IRS allowable rate) and parking expenses incurred by the project team are charged at cost.
3. Prints, plots, messenger service, subsistence, air travel, and other direct expenses will be charged at cost plus 10%.
4. Services of outside consultants will be charged at cost plus 10%.

Matthew McCormac, EIT

Civil Designer

EDUCATION

2017/BS/Civil
Engineering/University of
California Los Angeles

REGISTRATION

2017/Fundamentals of Engineering
(EIT)

CERTIFICATIONS

NASSCO Pipeline and Manhole
Assessment and Certification
Program (PACP and MACP)

Mr. McCormac is an experienced Civil Designer with hands-on experience in design and preparation of construction plans for water and wastewater infrastructures. He is very knowledgeable in AutoCAD and serves as the CAD Manager for the company. He oversees CAD production, implements CAD standards, and trains interns and entry level CAD Designers.

Experience

Pipelines

Relocation of 6-inch Waterline on State Highway 74, Elsinore Valley Municipal Water District, Lake Elsinore, CA: Civil Designer responsible for preparation of construction plans and specifications for abandonment of approximately 970 lineal feet of existing 6-inch steel waterline and replacement with 8-inch PVC waterline inside Caltrans right-of-way. The project was constructed as requested by Caltrans and in support of the Highway 74 widening project.

Madison Avenue and Purdue Avenue Area Main Replacement, Golden State Water Company, Gardena, CA: Civil Designer responsible for preparing construction plans for GSWC's water distribution replacement project. This project was for water system improvements in two separate locations in Culver City. The Madison Avenue Area Main Replacement was for 7,000 lineal feet of 8-inch and 12-inch waterline replacement. The Purdue Avenue Area Main Replacement was for 10,600 lineal feet of 8-inch waterline replacement. The project included replacing fire hydrants, reconstruction and reconnection of existing service laterals, constructing blow-off assemblies, and air-release valve assemblies.

Cheddar Street Area Main Replacement and Manuel Salinas and Volunteer Street Area Main Replacement, Golden State Water Company, Gardena, CA: Assisted with the preparation of construction plans for this design-build project with GSWC. The project was for water system improvements in two separate location in the City of Norwalk. The project replaced existing deteriorated waterlines with 8,600 lineal feet of 8-inch and 12-inch PVC main. The project required Caltrans involvement for work on Imperial Highway, adjacent to the 5 Freeway.

El Toro Road / Northcrest Drive Eroded Area Restoration, Irvine Ranch Water District, Lake Forest, CA: Civil Designer responsible for preparing construction plans for restoration of eroded areas near El Toro Road and Northcrest Drive. This project is a follow up effort by IRWD to repair the erosion created by a leak on the existing 16-inch recycled water pipeline. The project design was submitted to the City of Lake Forest and Orange County Public Works for approval.

Pipeline Upgrades for Talbert Seawater Intrusion Barrier, Orange County Water District, Fountain Valley, CA: Civil Designer responsible for preparation of construction plans for upsizing high-velocity segments of the Talbert Seawater Intrusion Barrier Pipeline. The project included design of 1,200 lf of 30-inch and 42-inch cement mortar coated and epoxy lined steel pipe, 1,300 lf of 18-inch and 20-inch C900 PVC pipe, and jacking and boring of 90 lf of 42-inch steel casing with 36-inch ductile iron carrier pipe under the Talbert Channel.

Dalton Plant Area Main Replacement, Golden State Water Company, Gardena, CA: Assisted in the preparation of the construction plans for a design-build contract for Golden State Water Company. This project was for construction of 7,500 lineal feet of 16-inch PVC water main along Dalton Avenue, from 158th Street to Artesia Boulevard, in the City of Gardena. The project included replacing fire hydrants, reconstruction and reconnection of existing service laterals, constructing blow-off assemblies, and air-release valve assemblies.

St. George Avenue Area Main Replacement, Golden State Water Company, San Dimas, CA: Assisted in preparation of the construction plans for a fast-track design-build contract for Golden State Water Company. This project replaced old and deteriorated 4-inch through 8-inch water mains with new 8-inch PVC water mains in the City of San Dimas. The project was comprised 4,420 lineal feet of 8-inch PVC water main with associated valves and fittings. The project was located on:

- ▶ Rennell Avenue, from south Juanita Avenue to north of Arrow Highway.
- ▶ St. George Drive, from west of Rennell Avenue to Lone Hill Avenue.
- ▶ Juanita Avenue, from Columbiana Drive to cul-de-sac.
- ▶ Dunning Way, from Rennell Avenue to the cul-de-sac.
- ▶ Brazilian Drive, from St. George Avenue to the cul-de-sac.
- ▶ Americana Drive, from St. George Avenue to the cul-de-sac.

Belhaven and Cumberland Main Replacement, Golden State Water Company, Claremont, CA: Assisted in preparation of the construction plans for a fast-track design-build contract for Golden State Water Company. This project was for construction of 1,630 lineal feet of 8-inch PVC water main to replace existing 4-inch and 6-inch antiquated steel mains in the City of Claremont. The replacement areas were located on Marion Drive (north of San Jose Avenue), College Avenue, Belhaven Place, and Cumberland Place.

Alignment Study for Pipeline to City of Pomona Well 20, Three Valleys Municipal Water District, Claremont, CA: Assisted in the preparation of a concept report and alignment study for a new pipeline in the City of Claremont, from the existing metered connection south of the Mills Avenue and Baseline Road to Pomona's Well 20/Reservoir No. 9 site. The concept is to use District water to supplement City of Pomona water supply by blending with high-nitrate groundwater from Well 20. Well 20 discharges to Reservoir No. 9 but is currently inactive due to nitrate levels more than the maximum contaminant level (MCL) established by the EPA under the authority of the Safe Drinking Water Act.

Design of 80th Street Area Main Replacement, Golden State Water Company, County of Los Angeles, CA: Provided CAD support services for preparation of the construction plans for 7,000 lineal feet of water main replacement in the County of Los Angeles. The work included replacing existing 4-inch through 12-inch cast iron mains with 8-inch and 12-inch C-900 PVC water main on several residential streets and arterial streets such as Firestone Boulevard. The project also included replacing fire hydrants, reconstruction and reconnection of existing service laterals, transferring services from alleys to the frontage streets, constructing fire hydrant assemblies, and air-release valve assemblies.

Design of Commercial Avenue Area Main Replacement, Golden State Water Company, Calipatria, CA: Provided CAD support services for preparation of the construction plans for 650 lineal feet of water main replacement in the City of Calipatria. The work included replacing existing 4-inch mains with 8-inch C-900 PVC water main on Brown Avenue, alley south of Freeman Street, and on Commercial Avenue.

Design of Merino Avenue Area Main Replacement, Golden State Water Company, Town of Apple Valley, CA: Provided CAD support for preparation of the construction plans for 7,500 lineal feet of 8-inch water main replacement in the Town of Apple Valley. The work included replacing existing 4-inch and 6-inch steel mains with 8-inch C-900 PVC water main on Marmoset Street, Merino Avenue, Lancelet Road, and Del Oro Road. The project included replacing fire hydrants, reconstruction and reconnection of existing service laterals, constructing blow-off assemblies, and air-release valve assemblies.

Ardath Area Water Main Replacement, Golden State Water Company, Gardena, CA: Provided CAD support services for preparation of the construction plans. This project was a fast-track design-build contract for Golden State Water Company for 7,500 lineal feet of water main replacement in the City of Gardena. The work included replacing existing 4-inch through 12-inch cast iron mains with 8-inch and 12-inch C-900 PVC water main on Manhattan Beach Boulevard, Redondo Beach Boulevard, and miscellaneous residential areas. The project also included replacing fire hydrants, reconstruction and reconnection of existing service laterals, constructing blow-off assemblies, and air-release valve assemblies.

Pump Stations

Dove Canyon and Robinson Ranch Recycled Water Pump Station – Phase 1, Trabuco Canyon Water District, Trabuco Canyon, CA: Assisted in the preparation of a Preliminary Design Technical Memorandum for replacing two existing irrigation pump stations which served Trabuco Canyon Water District recycled water customers. The report provided recommendations for improvements, site alternatives with analysis, hydraulic calculations, and operating conditions.

Omar M. Abutaleb, PE

Project Engineer

REGISTRATION

CA/Professional
Engineer/Traffic/#1659

EDUCATION

1988/Civil Engineering/California
State University Los Angeles

AFFILIATIONS

American Society of Civil
Engineers

Institute of Transportation
Engineers

Mr. Abutaleb has over 30 years of experience in a wide variety of engineering and construction projects. His diversity of knowledge and expertise was attained through years of service with both public agencies and private sector companies. While engaged at these agencies or firms, Mr. Abutaleb managed the development of numerous PS&E packages for various transportation projects including streets, water and sewer lines, storm drain lines and their structures, traffic signals, signing and striping, street lighting and traffic handling plans.

Mr. Abutaleb has an excellent knowledge of the Standard Specifications for Public Works Construction “The Green Book”, and the Caltrans Standard Plans and Specification making him an indispensable resource on all Capital Improvement Projects. Mr. Abutaleb’s degree of engineering and construction knowledge and experience is exceeded only by his professionalism and communication skills in dealing with people at all levels of responsibility and all ethnic and cultural backgrounds.

Experience

CIP Engineer for Monte Vista Water District, Montclair, CA: Served as a staff augment for Monte Vista Water District performing duties to assist District staff in managing capital improvement projects. His daily duties included meeting with operations and maintenance staff, engineering consultants, and contractors to plan, develop, design, and manage several water pipeline improvement projects and water treatment plants. Reported directly to the District’s General Manager.

CM and Inspection Services for West Haven Reservoirs Rehabilitation, City of Garden Grove, CA: Served as Resident Engineer and Construction Inspector for the rehabilitation of two 10 MG prestressed buried concrete reservoirs located in West Haven Park in the City of Garden Grove. Project duties included coordination with construction manager, daily inspection and documentation for conformance to plans and specifications, attendance to progress meetings, and review of progress pay applications. Project construction included structural rehabilitation inside and outside of the two tanks, construction of a seismic curb in the interior, and waterproofing of the exterior top slab. Participated in strategic meetings to discuss isolation of each reservoir and cleanup of grease buildup inside the west reservoir.

CM and Inspection Services for Large Potable Water Valve Replacement at Redondo Avenue and Kilroy Airport Way, Phase 1, Long Beach Water Department, Long Beach, CA: Alternate Construction Inspector for removal of four large gate valves at the intersection of Redondo Avenue and Kilroy Airport Way. The project replaced one 42-inch gate valve, one 30-inch gate valve, and one 24-inch gate valve (with butterfly valves of the same size) in the public right-of-way. The project also replaced one 42-inch butterfly valve with an electric actuator inside the Long Beach Groundwater Treatment Plant. This project was high-profile and a critical improvement to Long Beach Water Department’s potable water treatment and distribution system. These large valves are key components to the Groundwater Treatment Plant main discharge to the Alamitos storage reservoirs. Construction was carefully coordinated

not only with public works but also with the Groundwater Treatment Plant operators.

Construction Inspection Services for North Bay Intake Pump Station, Lake Arrowhead Community Services District, Lake Arrowhead, CA:

Provided full-time construction inspection to observe construction progress, monitored conformance with the construction plans and specifications, provided assistance with design deviations, and acted as the District representative on site. The project included demolition of existing facilities including pump station, vaults, pumps, valves, and electrical equipment; construction of on-shore pump station structure with stone veneer, access hatch with vertical turbine pumps and motors, piping, valves, and surge tank; construction of electrical building extension including conduits, wiring, manual transfer switch, switchgear, VFD's and instrumentation; and construction of in-lake pump station including submersible pumps, check and isolation valves, and electrical conduits. Construction inspector duties included attendance to progress status meetings, ensure conformance to contract documents, construction observation, adherence to OSHA regulations, assistance with public relations, concrete mix inspection and testing, preparation of daily inspection reports, documented through daily photographs.

Project Manager and Resident Engineer - Orange County Great Park, City of Irvine, CA: Provided project management and construction management services to the City of Irvine for the development and construction of the City's 1.1 Billion, 1,437-acre Orange County Great Parks project. Responsibilities stretch from project conception/inception to completion and turnover to the City and include: preparation of the engineering design RFPs for infrastructure, lighting, signal and roadway design; preparation of construction bid packages, bid review and contractor selection; and management of the design and construction contracts, implementation and construction management oversight of the construction work.

Lead Project Engineer and Resident Engineer - King Abdullah University of Science and Technology, Thuwal, Saudi Arabia:

Responsibility was in pre-planning review for construction, review of related submittals and coordination of technical queries (TQ or RFI) in accordance with the approved project plans and specification. Responsible for construction management of the earth work, site civil and all utilities for the project. Responsibilities included the coordination of over 300,000 cubic meters of earthwork, 1,500 meters of reinforced concrete culvert box to the red sea, 400 meters of force main pipe, 2,200 meter of storm drain pipe and associated structures, 5,700 meters of water/fire pipe and 1,700 meters of chilled water pipe. Also included is the coordination of all underground electrical runs with approximately 3,000 meters of telecom duct banks.

Senior Project Manager - Street and Storm Drain Improvements on Imperial Highway, Yorba Linda Blvd and Lakeview Avenue, City of Yorba Linda, CA: Assisted the bidding department with the cost estimate of the project. Served as the main contact with the City of Yorba Linda and their construction management team. The project included SWPPP implementation and reporting, monthly scheduling updates and invoicing, street improvements, demolition and grading, retaining walls, 48-inch RCP storm drain pipe and associated structures, landscaping, street lighting, tree lighting, traffic signal modification, new traffic signal

installation, signing and striping, new electrical services from Southern California Edison and various phases of challenging traffic control development and implementation.

Project Manager and Resident Engineer - Wildwood Canyon Retention Basins, City of Yucaipa, CA: Managed the construction of three retention basins at a live creek at the bottom of the mountains in the City of Yucaipa. The project included clearing and grubbing of the creek area and export of 250,000 cubic yard of dirt. The project included massive grading of approximately 500,000 cubic yards to construct the basins. In addition; a spillway channel around the basins was constructed with soil cement banks and various uses of concrete and grouted rip rap. The project also included the construction of culvert box, 72-inch storm drain line, sewer line, water line and various street and parking lot improvements.

Construction Manager and Resident Engineer - Interstate 5 Freeway Ramp Improvements at Colorado Street, City of Glendale CA: Managed the realignment of I-5 Freeway off ramp at Colorado Street. Oversaw the consultant PS&E and administered the construction contract. Developed the "Engineer's Estimate" and negotiated contract change orders with the contractor. The project consisted of 1,800 lineal feet of concrete lane widening, relocating sewer and water lines, installations of storm drain lines and associated manholes and structures, installation of traffic signal and street lighting system. The project also included construction traffic handling and close coordination with Caltrans.

Contract and Construction Manager - Traffic Signal Modifications Downtown Glendale, City of Glendale, CA: Responsible for the development of the PS&E package and contract administration for traffic signal modifications and interconnect system in the Glendale downtown area along Brand Boulevard, Central Avenue and Glendale Avenue. Phase I included the modifications of twenty traffic signals and Phase II included modification of thirty-seven traffic signals. Total of 57 traffic signals within downtown Glendale area.

Design Engineer - Galleria at Tyler Mall Expansion, City of Riverside CA: Responsible for compliance of the project with the conditions of approval including intersection lane geometry for all intersections along Tyler Street, Magnolia Avenue and Van Buren Boulevard in the City of Riverside. Responsible for the development of PS&E package for traffic signals, traffic signal interconnect system, street lighting system, signing and striping plans and traffic control plans. Responsible for the design and coordination of traffic signals and street lighting systems on the 91 Freeway Ramps at Tyler Street and Van Buren Boulevard.



**CITY OF FULLERTON
DEPARTMENT OF PUBLIC WORKS**

REQUEST FOR QUALIFICATIONS

ON-CALL PROFESSIONAL ENGINEERING SERVICES

**City Of Fullerton
Public Works Department
Engineering Division
303 W. Commonwealth Avenue
Fullerton, CA 92832**

*Questions Due: Monday August 20th, 2018, noon
Qualifications Due: Monday August 27th, 2018, 2:00 p.m.*



CITY OF FULLERTON

Public Works Department – Engineering Division

INTRODUCTION

The City of Fullerton is interested in retaining professional services for On-Call Professional Engineering Services related to our Capital Improvement Project and Private Development programs. The work will be assigned on an as-needed basis for various projects in the city.

The City will award agreements to provide on-call services for a period of three (3) years. The agreements may be renewed at the City's discretion for a period of two (2) additional years subject to satisfactory performance during the initial three year term. The initial three year term is anticipated to commence in October 2018 and end in September 2021.

The City intends to select up to five (5) consultants for each respective service categories detailed below. The actual number of consultants selected will be based on number of responses and qualifications.

Questions regarding this Request for Qualifications (RFQ) shall be directed to David Grantham at DGrantham@cityoffullerton.com.

Deadline to submit qualifications (Proposal) is Monday August 27th at 2:00 p.m. Two (2) hard copies and one complete PDF copy (on CD or memory stick) shall be addressed to:

City of Fullerton
Public Works Department
303 W. Commonwealth Avenue
Fullerton, CA 92832
Attn: David Grantham

Qualification packages received after the deadline will not be accepted and will be returned unopened.

The City currently anticipates conducting the selection process in accordance with the following schedule. This schedule is subject to revision and the City reserves the right to modify the schedule as needed or necessary.

August 6 th , 2018:	RFQ released
August 20 th , 2018:	RFQ questions due
August 27 th , 2018:	Qualification due
September 2 nd , 2018:	Staff short list selection
September 18 th , 2018:	On-call firm recommendations to City Council for authorization

ON-CALL SERVICES

Selected firms will report to, and operate under, the direction of the City of Fullerton Public Works staff, to provide services and staffing for the following categories:

- Civil Engineering Design
- Water Engineering Design
- Geotechnical Engineering and Material Testing
- Survey and Mapping Design and Plan Check
- Private Development Plan Check
- Construction Management and Inspection

Consultants may submit qualifications for one or more of the services categories requested, however, separate proposals must be submitted for each category.

SCOPE OF WORK

Civil Engineering Design

Provide complete design services for CIP projects. Including, but not limited to:

- Plan preparation for street improvements, repair, rehabilitation or other related street improvements.
- Plan preparation for traffic signal installations or modifications.
- Plan preparation for storm drain and sewer improvements, upgrades, modifications, extensions, repair, or rehabilitation.
- Preparation of hydrology and hydraulic analysis and reports.
- Preparation of WQMP's, SWPPP's or related NDPES documents/reports.
- Preparation of project technical provisions.
- Preparation of detailed cost estimates.
- Perform mapping and prepare legal descriptions for right of way acquisitions, easements, vacations, etc.
- Provide construction survey staking.
- Provide construction assistance.
- Coordination with, and approvals from other permitting agencies and utility companies.

Water Engineering Design

Provide complete design services for water improvement projects. Including, but not limited to:

- Plan preparation for water system pipeline improvements and repairs.
- Plan preparation for multi-discipline improvements or repairs to tanks, pump stations, wells, etc.
- Preparation of project technical provisions.
- Preparation of detailed cost estimates.
- Preparation of studies and analysis of water system facilities such as tanks, pump stations, wells, etc.
- Provide pipeline assessment and pipeline integrity testing.
- Prepare Water Master Plan.
- Perform surge analysis and hydraulic modeling.

- Provide regulatory and environmental compliance support.
- Provide equipment condition assessment and testing.
- Provide plan check services on civil, mechanical, structural, electrical, and instrumentation and control (I&C) documents.
- Provide construction assistance.

Geotechnical Engineering and Material Testing

Provide complete design and construction services for City improvement projects. Including, but not limited to:

- Complete soils investigation and preparation of Geotechnical Engineering reports and studies such as pavement design, grading requirements, retaining wall parameters, slope stability analysis, etc.
- Laboratory work related to all aspects of Geotechnical Engineering.
- Provide construction inspection of items such as grading excavation, backfill, and aggregate and concrete placement during construction.
- Provide testing services such as field compaction and lab testing of soils, aggregates, asphalt and concrete.

Survey and Mapping

Provide complete land survey services for CIP projects and plan check services for private development improvements. Including, but not limited to:

- Design and Construction related services
 - Perform design topographic surveys.
 - Perform aerial topographic surveys.
 - Perform boundary surveys and boundary analysis.
 - Perform mapping and prepare legal descriptions for right of way acquisitions, easements, vacations, etc.
 - Prepare pre- and post-construction corner records.
 - Prepare Record of Surveys
 - Perform construction staking
- Private Development Plan Check related services
 - Provide plan check for tentative maps, final maps, easements, vacations, etc.
 - Prepare plan check comments in concise and understandable manner.
 - Interact with private and public personnel.

Private Development Plan Check

Provide complete plan check services for the private development projects. Including, but not limited to:

- Perform review of civil related improvement plans, grading, sewer, storm drain, erosion control, etc. plans.
- Perform review of traffic signal installation or modification plans.
- Perform review of studies and reports such as sewer, drainage, WQMP, etc.
- Have good working knowledge of commonly used software programs and Orange County Hydrology and Local Drainage Manuals.
- Prepare plan check comments in concise and understandable manner.
- Interact with private and public personnel.

Construction Management and Inspection

Provide complete construction management and inspection services for CIP and private land development projects, including park renovations, and facility construction/modifications/modernizations. Including, but not limited to:

- Provide construction inspection services for CIP projects such as streets, water, sewer, storm drain, and parks.
- Provide construction inspection services for Water projects such as tanks, pump stations, well construction, and trenchless rehabilitation.
- Provide deputy inspection services.
- Provide construction inspection services for private developments including grading, drainage, SWPPP/erosion control, paving, sewer, water, and franchise utilities.
- Provide public contract administration.
 - Including collection and review of certified payrolls.
- Coordinate and lead project construction meetings.
- Provide utility company coordination.
- Provide project construction documentation.

SUBMITTAL REQUIREMENTS

The Proposal package shall be organized and presented in a neat and logical format relevant to the services requested. Submittal shall be clear, accurate, concise, and comprehensive. There is no page limitation, however, excessive or irrelevant material will not be favorably received.

The Proposal should be in the order below and include the following:

- Cover
- Cover Letter
 - Clearly indicate the on-call service category.
 - Express why Consultant is interested in the RFQ.
 - Include contact information for the person responsible for the Proposal and who will be the point of contact for the City.
 - Include any unique attributes or distinguishing characteristics which would be of value to the City.
 - State if any addendums have been received and included in the Proposal.
 - Statement regarding acceptance of Agreement and insurance requirements.
 - Letter shall be signed by an officer of the firm who is authorized to bind the firm to the contract. Include a statement to this effect.
- Firm Qualifications and Experience
 - Describe firm's background and experience
 - Describe your firm's strengths
 - State how your firm produces deliverables free of errors and how you will address errors if they occur.
 - Include experience and technical competence of subconsultants
- Key Personnel and Experience
 - Experience and history performing directly for local agencies within the last five years.
 - Include subconsultants
- Organization Chart

- Similar Projects
 - Brief description of the project scope, personnel involved and their roles, plus agency and contact information of agency Project Manager.
 - Projects that the firm was the prime consultant and responsible for management of any subconsultants.
- References
 - Current contact information related to projects completed within the last five years.
- Fee Schedule
- Resumes

Note - All licensed professionals in "responsible charge" working on City projects (Engineer and/or surveyor) are required to disclose all disciplinary actions against them, including any future actions. Provide a copy of the actions with submittal of proposal. Please provide statement if there are no disciplinary actions.

FEE SCHEDULE

A fee schedule shall be included in the Proposal. The fee schedule shall include a comprehensive list of positions and labor rates for all services provided by the prime consultant and all subconsultants. Rates shall include all necessary resources including labor, equipment, materials, incidental report, transportation, etc. Any percentage markup of subconsultant invoices shall be specified.

The fee schedule shall remain fixed throughout the initial term of the Agreement, unless formally amended by the City Council. Adjustment of the fee schedule can be negotiated if the City renews the Agreement.

The City is subject to prevailing wage laws which apply to those professional services providers and their subconsultants for whom the Department of Industrial Relations has established a wage determination, including but not limited to, Field Soils Materials Testers, Operating Engineers, Surveyors, and Building/Construction and Specialty Inspectors.

Prevailing wage requirements apply when a Consultant and/or Consultant Team is awarded a contract for a specific project which is designated by the issuance of a City Purchase Order. Invoices will not be paid unless accompanied with copies of applicable certified payroll.

SELECTION/EVALUATION CRITERIA

The Proposals will be evaluated by City of Fullerton Public Works Department staff. The evaluation criteria will include:

- Presentation, completeness, clarity, organization, and conformance to the RFQ content.
- Project Manager's experience related to the City's requirements and needs.
- Qualifications and resumes of staff members and subconsultants
- Organizational chart
- Similarity of the firm's referenced projects completed within the last five years to City's expected projects.

- Availability and depth of staff and resources to deliver quality products on schedule, including work on short notice and under time constraints.
- References.
- Fee schedule.

During the evaluation period, the City may conduct negotiations with the most qualified consultants. However, consultants should note that award may be made without negotiations or discussions.

GENERAL CONDITIONS

By submitting a Proposal, the Consultant represent that they have thoroughly examined and become familiar with the requirements of this RFQ and is capable of performing quality work to achieve the objectives of the City.

Questions pertaining to this RFQ shall be submitted by email. Responses to questions timely submitted will be answered within two (2) working days by addendum posted on the City website. https://www.cityoffullerton.com/biz/bids_n_rfqs.asp The City is not responsible for any oral representations, clarifications, or changes made to this RFQ unless provided in written addenda form. Firms are responsible to check the City website for addendums.

The City reserves the right to withdraw the RFQ at any time without prior notice. The City makes no representations that any Agreement will be awarded to any Consultant responding to this RFQ. The City reserves the right to extend the deadline for Proposals, postpone reviewing the Proposals for its own convenience, to reject any and all Proposals without indicating any reasons for such rejection(s), and to negotiate with any qualified consultant. The City does not guarantee successful firms will be provided any projects.

The successful consultant(s) and sub-consultants are required to obtain and maintain a City of Fullerton business license. The license shall be maintained for the duration of the Agreement. A current business license is not a prerequisite for submittal of the qualifications.

The City is not liable for any costs incurred by the Proposers before entering into a formal agreement. Costs for developing the Proposal or any other such expenses incurred by the Proposer in responding to this RFQ and entirely the responsibility of the Proposer, and shall not be reimbursed by the City.

The City is not responsible for Proposals which are delinquent, lost, incorrectly marked, sent to the wrong address, or sent by mail or courier service and not signed for by the City.

AGREEMENT & INSURANCE

The City's standard Professional Services Agreement is included in Appendix A. The Consultant will be expected to enter into the Agreement without substantive changes. Any changes will require approval by the City Attorney.

The City's standard insurance requirements is included as part of the standard Professional Services Agreement included in Appendix A.

EXHIBIT B
CONSULTANT'S PROPOSAL



City of Fullerton – Public Works Department
Statement of Qualifications
On-Call Professional Engineering Services
Water Engineering Design





August 27, 2018

David Grantham
City of Fullerton
303 West Commonwealth Avenue
Fullerton, CA 92832

Subject: Statement of Qualifications
City of Fullerton On-Call Professional Engineering Services
Water Engineering Design

Dear Mr. Grantham:

JIG Consultants (JIG) is pleased to submit our Statement of Qualifications for On-Call Professional Engineering Services for the City of Fullerton (City). JIG offers an expert team of professionals with extensive experience in providing on-call engineering services for **Water Engineering Design**.

JIG understands that successful delivery of your capital improvement projects requires the work of a consultant with extensive design experience, as well as a team of proven, proactive leaders who have detailed knowledge of what it takes to complete these types of projects on-time and on-budget. JIG has the experience and resources to quickly and efficiently provide quality and value-added services to the City.

Included in this proposal is JIG's approach for this on-call engineering projects. The approach includes a write-up on efficient project execution and development of a work plan. Also included is JIG's approach on project management and quality management. We encourage the City to review the project abstracts for similar projects in Section 3 and contact any of the client references presented in Section 4 of this proposal.

We have included all pertinent information as required in the Request for Qualifications, as well as provided detailed resumes and hourly rate schedules. JIG takes no exception to the requirements of the City's Professional Services Agreement and insurance requirements.

As President and Project Manager, I will be responsible for oversight of all proposed work resulting from this endeavor. I will also serve as the primary point of contact between the City and JIG. The office address and contact information are shown below.

Please do not hesitate to contact me via telephone or email should you have any questions about this Statement of Qualifications.

No addendums have been received for the City's Request for Qualifications.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'J. Gutierrez', is written over a dark rectangular background.

ANTS

, PE, PMP, ENV SP
President / Project Manager

Email: jgutierrez@jigconsultants.com

Enc.

4887 East La Palma Ave, Suite 708
Anaheim, CA 92807

Office (714) 978.4407
Fax (714) 908.4654
www.jigconsultants.com

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- ▶ Organization Chart
- ▶ Staff Experience with Local Public Agencies

Section 3: Similar Projects

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Section 5: Engineering Services Fee Schedule

Section 6: Resumes

FIRM OVERVIEW AND EXPERIENCE

JIG Consultants (JIG) is a civil engineering firm providing consulting services for design of water and wastewater infrastructures to the public and private sectors. We are focused on delivering quality engineering services specializing in client management, team collaboration, and creative solutions. At JIG, we pride ourselves on having a “*client-centric*” culture. We concentrate on meeting and exceeding the needs and expectations of our clients as we believe client satisfaction should always be the top priority. We aim to build a one-on-one relationship with our clients through loyalty and dedication.

Throughout 28 years of his engineering career, our President has provided his clients unmatched attention, quality engineering designs, and creative solutions. He has developed a “*client-centric*” approach to engineering that has become the foundation of our company. JIG carries the same culture, work ethic, and dedication that is evident in all our projects.

JIG provides a management approach uncharacteristic of other engineering firms. Our project management approach is centered on the needs of the client. We create the most comprehensive approach tailored specially for each project. With the understanding that the client knows the most about their project, including known commodities and critical issues, we collaboratively create an approach that encompasses the principal needs of our clients, their concerns, and assessing the magnitude of these critical issues.

JIG specializes in water and wastewater infrastructures with public agencies in Orange, Los Angeles, San Bernardino, and Riverside Counties. JIG has earned the trust and loyalty of existing clients and have consistently served to promote integrity, honesty, and quality engineering services.

Existing clients in Orange County include the following agencies: Orange County Water District, Irvine Ranch Water District, Trabuco Canyon Water District, City of Garden Grove, City of Fullerton, and City of Laguna Beach.

Existing clients in San Bernardino County include the following agencies: East Valley Water District, Elsinore Valley Municipal Water District, Lake Arrowhead Community Services District, Monte Vista Water District, and Golden State Water Company.

PROJECT EXECUTION

JIG’s goal is to provide value-added services that yield innovative yet practical solutions to promote cost-effective and timely delivery, while protecting and enhancing the value of your infrastructure. Our Project Manager, Joseph Gutierrez, will coordinate with in-house and City staff to ensure technical viability, monitor schedules/budgets, and assure the entire project team integrates seamlessly to deliver the best possible product. Our staff has the proven ability to partner with municipal clients to assess priorities in order to keep your project on schedule and under budget.

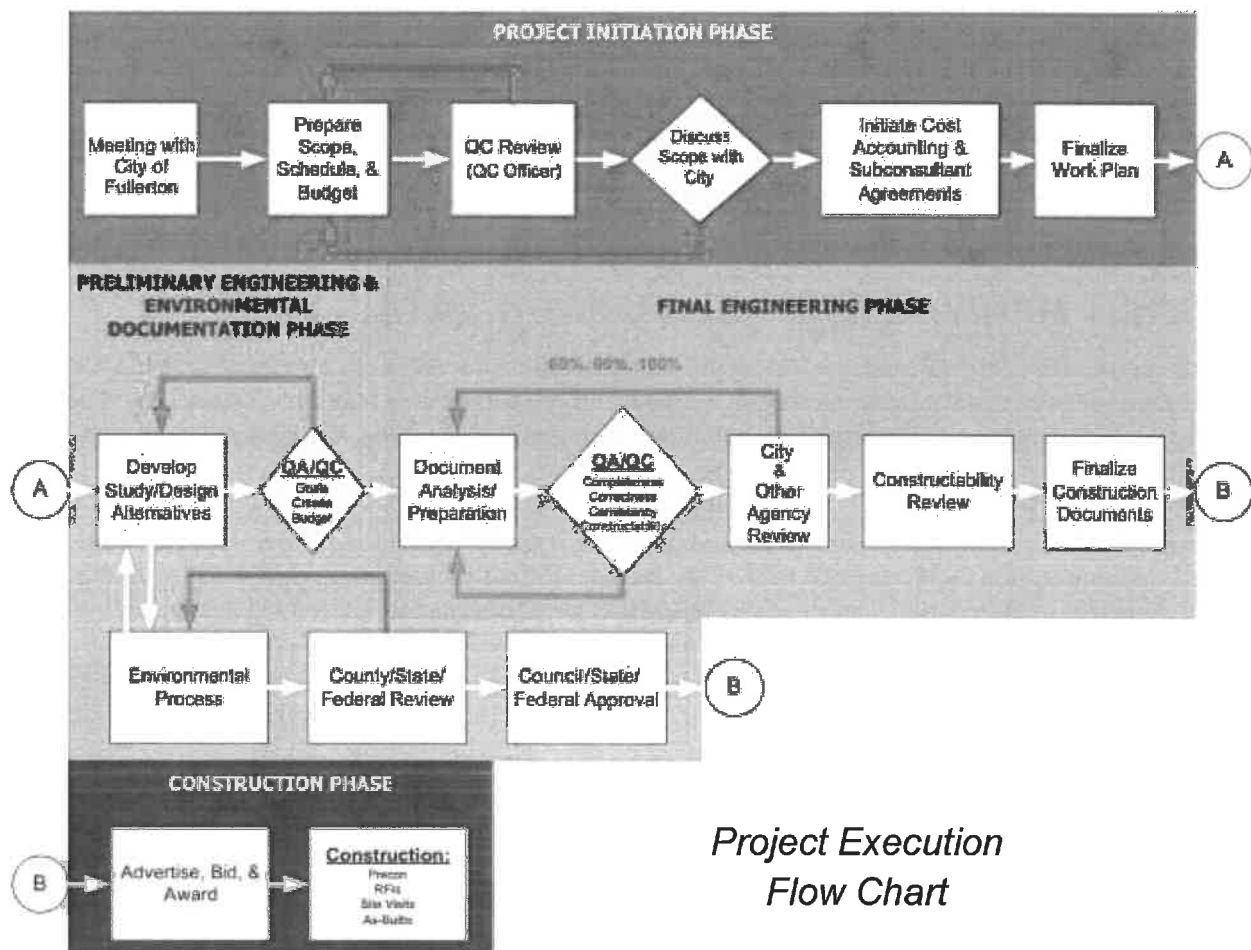
The Project Execution Flow Chart on page 2 is representative of a typical engineering design assignment. The four phases of a project are as follows:

Project Initiation: JIG and City staff will meet to discuss the project goals and objectives. The project specific scope of work will be identified, and a schedule and budget will be developed based on the project components. JIG will perform a field reconnaissance to inspect, photograph, and make field notes to document the existing site and surrounding environment. JIG will prepare a work plan to establish 1) the level of involvement of each team member, 2) the lines of communication between our project team and City staff, and 3) the anticipated project completion. During this phase, JIG will also initiate the subconsultant agreements.

Preliminary Engineering & Environmental Documentation: Preliminary Engineering includes the following scope of work items:

- ▶ Kick-off meeting to present project team, collect project information, and discuss project objectives.
- ▶ Collect and research available record drawings from the City.
- ▶ Coordinate with utility companies to obtain record drawings – keep a log of utility communication and relocation schedule.
- ▶ Field Surveying for development of a topographic base map.
- ▶ Identify design issues and develop preliminary alternatives or solutions.
- ▶ Perform hydraulic calculations for pipelines and pumping systems.
- ▶ Develop preliminary site layouts for civil designs.
- ▶ Prepare preliminary single line diagrams for electrical designs.
- ▶ Establish preliminary alignment for pipeline projects.
- ▶ Develop preliminary level Engineer's Opinion of Probable Construction Costs
- ▶ Prepare Preliminary Design Reports to summarize preliminary engineering efforts.

Also during this phase, our project team will work with the City to determine the requirements for CEQA documentation. If the work is deemed categorically exempt, JIG will work with the City to prepare the necessary paperwork to process with the State. If the work will require an Initial Study, a Mitigated Negative Declaration, or an Environmental Impact Report, JIG will coordinate with ESA (environmental sub-consultant) for preparation and filing of the required documents.



Final Engineering: Majority of the design is executed during this phase. JIG will continue our efforts from Preliminary Design to prepare contract documents which include construction plans, specifications, and bid forms. Established review milestones are anticipated at 60%, 90%, and 100% design.

Construction: This phase includes public bidding of the project, construction based on the contract documents, and preparation of the as-built drawings. JIG will assist the City with construction administration services including attending the pre-construction meeting, responding to Contractor Requests for Information, providing clarifications and intent of design, reviewing shop drawings, attending progress status meetings, and preparing as-built plans.

DEVELOPING A WORK PLAN

JIG prepared a Work Plan for potential project scopes that was included in the Request for Qualifications for Water Engineering Design. The Work Plan identifies how the project team will handle each scope item. In general, the Work Plan will be as follows:

- ▶ Each task will be assigned and completed by our project team members and/or subconsultant as noted by the check marks.
- ▶ The Project Manager will oversee the whole project, which is symbolized by the check marks across all task items. The dark check marks represent the team member that is responsible for the completion of the project task. For these projects, the Project Manager has full responsibility for all tasks.

As the City develops and releases Water Engineering Design projects with specific Scope of Work items, JIG will modify the Work Plan and assign work task hours per each team member. The Project Manager will use these figures to develop a project budget and a staffing plan. The Project Manager will confirm the hours assigned to each project team member are realistic and will consider current backlog and commitments. If a team member is unavailable, the Project Manager will present to the City an equally qualified professional as a temporary replacement. A resume will be submitted for City review as part of the Project Initiation Phase.

A sample Work Plan is presented on page 4 of this proposal.

PROJECT MANAGEMENT AND COMMUNICATION PLAN

Over the years, JIG's Project Manager has established a rigorous procedure for managing projects. These techniques have been developed, continuously refined, and has contributed to our project success. The keys to our project management system are communication, project planning, and project monitoring.

Client Communication

Our project team is committed to proactively keeping the City staff "in the loop" from day one of the project. Communication tools available to the City include: formal progress reports included with our monthly invoice; weekly e-mail status updates and action item lists; and an informal give and take approach lead by our Project Manager which extends to every member of the project team. At the project's onset, the chain of command and communication protocol will be agreed upon and can be as formal or informal as City staff desires.

Project Planning

Staffing is a key factor to successful project management and is an integral part of our project management program. We have assembled our best qualified team to match the project requirements. We will carefully review staffing availability, consider all projects in our backlog that could fall within the same schedule as your project tasks. We will confirm that every project team member listed in our organization chart will be available to dedicate the estimated man-hours (per task) within the project schedule.

WORK PLAN																
Scope of Work and Services		JIG Staff										Subconsultants				
		PM		QA/QC	SPE	SPE	PE (TC)	PE	CM	Staff Support		Arcon	Woolley	ESA	IDM	M&A
		JG	DP	DP	MP	DP	AR	NH	BS	MM	KN	SE	Survey	Env.	Models	Elect
Water Engineering Design																
A.	Construction Plans for Water System Pipeline Improvements	✓	✓	✓			✓	✓		✓	✓		✓			
B.	Construction Plans for Tanks, Pump Station, Wells, Etc.	✓	✓	✓	✓	✓			✓	✓		✓				✓
C.	Project Technical Provisions and Specifications	✓	✓	✓		✓		✓								✓
D.	Detailed Cost Estimates	✓	✓	✓		✓						✓				✓
E.	Studies and Analysis of Water Systems Facilities	✓	✓	✓	✓	✓			✓							✓
F.	Pipeline Assessment and Pipeline Integrity Testing	✓	✓	✓		✓			✓							
G.	Water Master Plan	✓	✓	✓											✓	
H.	Surge Analysis and Hydraulic Modeling	✓	✓	✓											✓	
I.	Regulatory and Environmental Compliance Support	✓												✓		
J.	Equipment Condition Assessment and Testing	✓	✓	✓	✓	✓										✓
K.	Plan Check Services on Civil, Mechanical, Structural, Electrical	✓			✓	✓	✓	✓				✓				✓
L.	Construction Assistance	✓				✓	✓	✓	✓		✓					✓

Weekly Resource Allocation Meetings

Every week our team will conduct a conference call to discuss current project assignments, as well as the projected staff resource requirements for future work. These conference calls will maintain accountability to ensure all staff resources are brought to bear not only to efficiently accomplish the tasks but also to meet the project schedules and deliverables in a timely manner.

Monitoring Staff, Progress, and Budget

The Project Manager will assess the project “percent complete” and “earned value” on a monthly basis. The “percent complete” will be estimated on a per task basis and will be done independently of budget reviews. The estimated percent complete will be compared to the planned percent complete to determine if the project is on schedule. If the project is not on schedule, staffing adjustment or other corrective measures will be implemented.

QUALITY MANAGEMENT PLAN

Being a small engineering firm, quality control procedures are tailored to the realities of a small consulting practice. Our Quality Management Plan is built around the following six guidelines.

Proactive Listening to Clients

The first step towards quality is to make a concerted effort to listen to people throughout your organization to gain a clear understanding of what is needed and/or wanted. This requires:

- a. Researching in advance standards that might be published on client websites or elsewhere to gain a thorough understanding of published expectations;
- b. Directly asking client organizations (including managers, engineers, operators and other stakeholders) what they need, want, and expect in the delivered product; and
- c. Documenting findings in meeting minutes or a similar vehicle to provide you with an opportunity to promptly correct or clarify misunderstandings.

Constant Learning

Every week, we set aside time to improve our skills and become better at our craft. This involves weekly reviews of changes to codes and standards and appropriate updates of standard templates used to produce engineering calculations designs, specifications, and cost opinions.

Experienced Design Team

No amount of “quality by inspection” will deliver quality if the team itself lacks the requisite experience. Our core project team has worked together on water and wastewater infrastructure design projects as well as a variety of other public utilities projects and combines over 150 years of experience in civil engineering.

Comprehensive In-House Specification Templates

To streamline production as well as to systematically document lessons learned in an accessible format, we maintain a library of over 500 standard specifications which have been “battle tested” against Contractors from previously completed projects. Most incorporate not only direct experience, but indirect lessons learned by reverse-engineering other regional and agency standards.

In-House Calculations and Design Checklist Templates

To facilitate engineering thoroughness, standard calculation procedures documented in AWWA manuals and other engineering references have been automated where possible. This will quickly quantify safety factors against many engineering failure modes and produce job-specific quality control checklists that can be used to monitor conformance of Contract Documents to your expectations.

Two-Engineer Rule

To promote a team approach to problem solving and avoid the danger of blind spots, our team abides by the two-engineer rule. This rule assures all delivered work is prepared by and reviewed by two experienced Professional Engineers, whose signatures will appear on the title sheet of the plans. Overall quality assurance by inspection is then undertaken by a third quality-review engineer, who is designated as the Quality Control Officer.

STAFF AVAILABILITY

JIG is committed to serving the City and our project team is capable of providing engineering services in an efficient and expeditious manner. The following is a listing of our team's availability as of the date of this proposal.

Project Team Members	Availability
Project Manager	50%
Senior Project Engineers	50%
Project Engineers	35%
Civil and CAD Designers	60%

JIG will demonstrate our commitment to the City by providing the resources to prepare and submit a proposal within 7 days of request. Upon receiving a Notice to Proceed, our team will mobilize and begin work on project tasks within 7 days.

Our Project Manager will be available for City staff 24 hours/day, 7 days/week. Upon receiving a call or a request, our Project Manager will be available to meet within 24 hours.

SUBCONSULTANTS

Arcon Structural Engineers, Inc. - Structural

Arcon is a structural engineering consulting firm founded as a California Corporation in June of 1998. The firm specializes in the structural design of new office, commercial, industrial and residential buildings, and support structures for the telecommunications and mining industries, as well as in the design of civil structures related to transportation and infrastructure construction and rehabilitation. The firm is experienced in providing these services for private sector projects led by civil engineering firms, architects, developers and constructors, and public sector projects under the jurisdiction of the California Department of Transportation and other local county and city agencies.

Recent public sector projects undertaken by Arcon include Rancho Mission Viejo Planning Area 1, Zone 1A PRS Domestic and Recycled Water Pump Stations, Canyon Hills Sewage Lift Station, Ladera Ranch Interim Phases 3 and 4 Lift Stations, Braddock Lift Station, Trabuco Lift Station, City of Midway Pump Station Rehabilitation, Tesoro Zone II Domestic Water Pump Station, Pico Lift Station, Talega Zone II Booster Pump Station, Ortega Lift Station, Horno Lift Station, Pico Lift Station, and Shaw Cove Sewage Pump Station Rehabilitation.

D. Woolley and Associates, Inc. – Land Survey

D. Woolley & Associates, Inc. is an established land surveying and mapping firm providing a wide range of services to a diverse clientele. Licensed in the State of California and Nevada, the firm has skilled staff and the latest equipment and methods to provide prompt and efficient services.

D. Woolley & Associates, Inc. is well versed in state laws, local ordinances and standards of practice. The firm often consulted as a specialist for work that ranges from property boundary, disputes, map checking, horizontal and vertical geodetic control, ALTA/ACSM Land Title Surveys and monument preservation.

Environmental Science Associates – Environmental Compliance

Environmental Science Associates (ESA) is a leading environmental consulting firm in California focused on environmental planning, permitting, and resource management. Founded in 1969, ESA is one of California's oldest environmental consulting firms, with 47 years of experience successfully supporting clients in planning, permitting, and implementing their projects. ESA's team of over 475 professionals is composed of scientists, planners, and engineers encompassing a wide diversity of specialties in the fields of biology, ecology, geology, hydrology, water quality, archaeology, architectural history, ethnology, air quality, noise, traffic management, city planning, and environmental sciences.

ESA's Water Practice Group focuses on providing full-service environmental planning, California Environmental Quality Act (CEQA)/National Environmental Policy Act (NEPA) compliance, permitting, and funding support for water resource management projects. In collaboration with ESA's team of resource specialists, the Water Practice Group successfully plans, permits, and implements projects that minimize impacts to the environment and advance strategic resource management and stewardship goals.

ID Modeling – Hydraulic Models / Surge Analysis

ID Modeling, Inc. (IDM) is uniquely positioned in the water industry with a compelling blend of hydraulic modeling, water engineering and technology expertise. Their team serves water utilities nationally, with 150 years of specific experience in water system modeling, operational performance, and planning, driven by the technical strengths of hydraulic models, modeling software, and depth of expertise in this area. IDM staff is experienced with specific applications of this unique skill-set to support capital planning, energy and operational efficiency, vulnerability and criticality, water quality, asset management, and water loss.

IDM provides services for municipal clients utilizing the latest advances in modeling software, network analysis algorithms, and related technology, proven modeling techniques and facility control configurations, complemented by core-competencies in GIS, Asset & Operational Management as database & mapping foundations, and referencing decades of combined years of Master Plan, utility operations, training, and technology experience.

Mullen & Associates, Inc. – Electrical / I&C

Since 1976, Mullen & Associates, Inc., has provided Consulting Electrical Engineering services to government agencies and architects. In-house electrical and control system engineers possess the technical knowledge and experience required to minimize energy consumption and installed cost while assuring the client of a reliable electrical system. Their engineering experience designing instructional and institutional buildings for architects, universities, cities, counties, and the Federal Government has prepared our firm for all technical challenges.

The firm is a member of the Association of Consulting Electrical Engineers (ACEE), the Illuminating Engineering Society (IES), and the Instrument Society of America (ISA) and the Electrical Generating Systems Association (EGSA).

Section 2 – Organization Chart and Staff Experience

ORGANIZATION CHART

JIG is comprised of highly-motivated, experienced, and qualified professionals in the water design engineering industry. Our team provides a depth of service with a broad range of expertise and resources which will be focused on the efficient completion of City projects.

Presented to the right is the Project Organization Chart depicting the City Project Manager, members of the in-house project team, and subconsultants.

STAFF EXPERIENCE

The following are brief descriptions of each JIG team member's qualifications including recent local public works projects completed in the last five years. Resumes are included in Section 6 of this proposal.

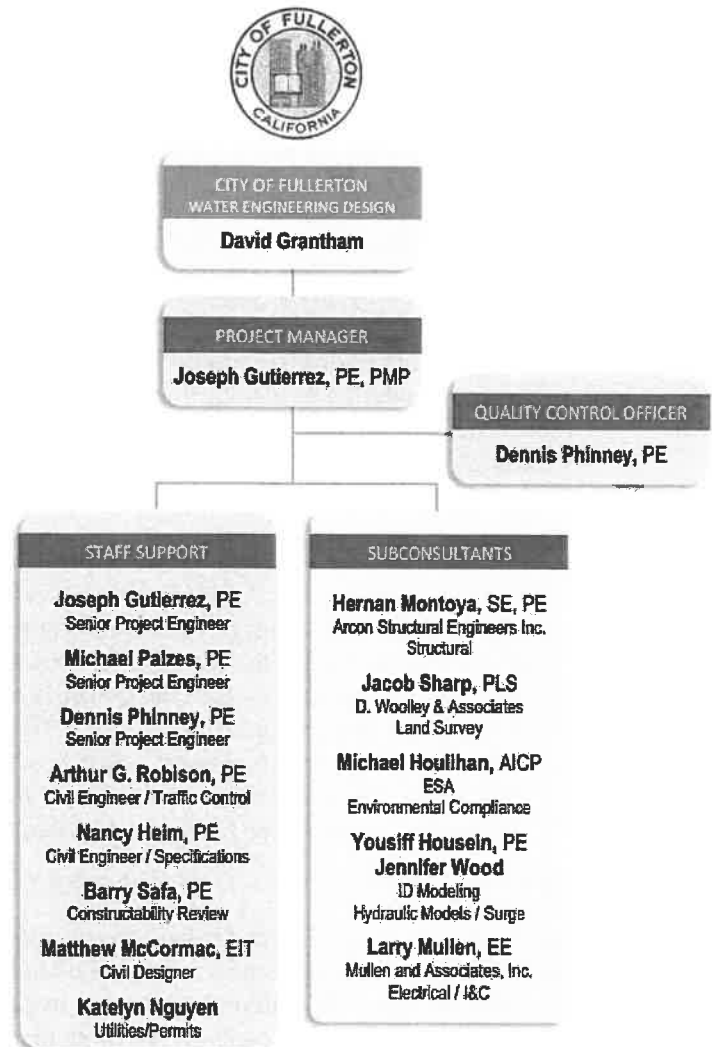
Joseph Gutierrez, PE, PMP – Project Manager / Senior Project Engineer

Mr. Gutierrez has more than 28 years of experience in planning, design and construction of water and wastewater facilities for various municipalities as well as the private sector. He has served as Project Manager and key Project Engineer for the design and construction of pipelines, pumping facilities, storage reservoirs, and sewer facilities in the Southern California region.

Mr. Gutierrez is a fully certified Project Management Professional (PMP), knowledgeable in every facet of business and project management per the Project Management Body of Knowledge, advocated by the Project Management Institute (PMI).

Recent Public Works Projects:

City of Fullerton – Design Review of Laguna Booster Pump Station Replacement
Golden State Water Company – Ardath Avenue Area Main Replacement
Irvine Ranch Water District – MWRP Irvine Interceptor Sewer Manhole Access Project
Irvine Ranch Water District – MWRP Domestic Water Pipeline Extension to Air Gap Structure
Irvine Ranch Water District – Lake Forest Recycled Water Services at Bake Parkway and Toledo
Lake Arrowhead CSD – On Call Engineering / Staff Augment for Inspection
Long Beach Water Department – GWTP Chemical Tanks Replacement Phase IV
Monte Vista Water District – Pipeline Avenue Pipeline Relocation for Bridge Reconstruction
Orange County Water District – Talbert Barrier Pipeline Upgrade
Three Valleys Municipal Water District – Pomona Well 20 Pipeline Alignment Study
Trabuco Canyon Water District – Dove Canyon and Robinson Ranch Recycled Water Pump Station
Trabuco Canyon Water District – Evaluation of Canyon Creek Pump Station



Michael Palzes, PE – Senior Project Engineer

Mr. Palzes has over 32 years of experience in the field of civil and mechanical engineering, specializing in sewage lift stations, water booster pump stations, and pipeline projects. His experiences include rehabilitation of new pumping facilities and replacement of aging water infrastructures. He has been responsible for the coordination and quality oversight of all related disciplines, including electrical/instrumentation, structural/architectural, as well as providing mechanical/civil plans and quality control reviews.

Recent Public Works Projects:

Santa Margarita Water District – Esencia Lift Station
Santa Margarita Water District – SC-6 Flow Control Facility
Three Valleys Municipal Water District – Pomona Pipeline Alignment Study

Dennis Phinney, PE – Quality Control Officer / Senior Project Engineer

Mr. Phinney's 38 years of experience includes design of 75 pump or lift stations, 20 well facilities, 12 steel or concrete reservoirs, over 100 miles of pipelines, and 30 water or wastewater treatment facilities in California and Arizona. He has prepared water and wastewater master plans for service areas with an aggregate population exceeding 1 million people, has performed post-earthquake structural evaluations or retrofit designs on over 300 structures. He led the task force writing three sections of the *2015 Greenbook Standard Specifications for Public Works Construction*, and authored 12 annual editions of an engineering reference book, the *Code Finder for Building and Construction*.

Recent Public Works Projects:

City of Anaheim – La Palma Reservoir and Booster Pump Station
City of Fullerton – Design Review of Laguna Booster Pump Station
Irvine Ranch Water District – MWRP Irvine Interceptor Sewer Manhole Access Project
Lake Arrowhead CSD – Bernina Tanks Recoating Project
Long Beach Water Department – GWTP Chemical Tank Replacement Phase IV
Long Beach Water Department – Standard Specifications and Drawings Update
Trabuco Canyon Water District – Dove Canyon and Robinson Ranch Recycled Water Pump Station
Trabuco Canyon Water District – Evaluation of Canyon Creek Pump Station

Arthur G. Robison, PE – Civil Engineer / Traffic Control

Mr. Robison's qualifications include the planning and design of roadway rehabilitation, water pipeline facilities, and traffic delineation and traffic control plans. These projects have included traffic signal installation and modification plans, traffic striping plans for roads and bike trails, construction staging plans, traffic control plans and detour route plans. Many of these projects have required Caltrans' permit processing and multiple agency coordination.

Recent Public Works Projects:

City of Downey – Nash Avenue Waterline Replacement
Golden State Water Company – 80th Street Area Main Replacement
Golden State Water Company – Wrightwood/Highway 2 Water Main Replacement
Long Beach Water Department – Long Beach Blvd. Cast Iron Main Replacement
South Coast Water District – Pacific Coast Highway Recycled Water Upsizing

Nancy Heim, PE – Civil Engineer / Specifications

Ms. Heim has over 20 years of experience in several areas of civil and environmental engineering including water reuse projects and assessments, field studies, and evaluation of water and wastewater related programs and procedures. She has extensive experience in technical writing and has authored and co-authored several technical manuals relating to water and wastewater issues.

Ms. Heim has worked on a wide variety of design and planning projects. She is experienced in permitting, preparation of Water Quality Management Plans (WQMP), Water Pollution Control Plans (WPCP), and Storm Water Pollution Prevention Plans (SWPPP), and Water Supply Assessments (WSA). Her experience includes utility research, plan and specification preparation for domestic and recycled water pipelines, reservoir coating and improvements, and cathodic protection stations, shop drawing reviews, water master plan reviews, assistance with construction phase services, and water modeling support. Her experience includes work with numerous cities and water districts as well as projects requiring close coordination with agencies such as Caltrans, railroads, US Army Corps of Engineers, and Department of Fish and Wildlife.

Ms. Heim's qualifications also include experience in the field of education including curriculum development and teaching courses in water supply and wastewater treatment.

Recent Public Works Projects:

City of Anaheim – La Palma Reservoir and Booster Pump Station
Golden State Water Company – Wrightwood/Highway 2 Water Main Replacement
Lee Lake Water District – Temescal Canyon Recycled Water Pipeline
Long Beach Water Department – Alley Main Conversion at Magnolia and Eucalyptus

Barry Safa, PE – Constructability Review

Mr. Safa is a registered civil engineer and a licensed contractor with more than 45 years of experience in resident engineering, construction inspection, construction engineering, and project management on a variety of construction projects including wastewater, water, and storm drainage facilities. These have included aeration basins, clarifiers, sludge drying beds, water storage tanks, pipelines, pump stations, large reinforced concrete dwelling units, industrial plants, and other public works projects for public agencies and private firms. His experience includes contract administration, CPM scheduling, claim dispute resolution, partnering, construction inspection, and material sampling and testing.

Recent Public Works Projects:

City of Garden Grove – Rehabilitation of West Garden Grove Booster Pumping Facility
City of Garden Grove – Redevelopment of Well No. 22
City of Irvine – Staff Augment CIP Project Manager

Matthew McCormac, EIT – Civil Designer

Mr. McCormac is an aspiring Engineer-in-Training with several years of experience in design of water and wastewater infrastructures. He serves as a Civil Designer and oversees the work of CAD Designers in the preparation of construction plans. He will report directly to the Project Engineer for design progress reports and conformance to engineering standards.

Recent Public Works Projects:

Golden State Water Company – 80th Street Area Main Replacement
Golden State Water Company – Dalton Plant Area Main Replacement
Golden State Water Company – Commercial Avenue Area Main Replacement
Golden State Water Company – Merino Avenue Area Main Replacement
Irvine Ranch Water District – MWRP Domestic Water Pipeline Extension to Air Gap Structure
Irvine Ranch Water District – Lake Forest Recycled Water Services at Bake Parkway and Toledo
Monte Vista Water District – Pipeline Avenue Pipeline Relocation for Bridge Reconstruction
Three Valleys Municipal Water District – Pomona Well 20 Pipeline Alignment Study
Trabuco Canyon Water District – Dove Canyon and Robinson Ranch Recycled Water Pump Station

Katelyn Nguyen – Utilities / Permits

Ms. Nguyen primarily functions as a specialty support staff for design of water and wastewater infrastructures. Her main area of expertise is with utility research, permit acquisitions, and public relations. She is responsible for communicating with public agencies for utility record drawings, receiving and organizing correspondence and maps, and follow-up services. She is very knowledgeable on permit acquisitions with emphasis on cities, fire departments, special districts and Caltrans.

Ms. Nguyen also serves as an expert with public relations. She conducted records audits and statistical research to develop comprehensive strategies. She has worked in different capacities for private companies and public agencies, all dealing with and presenting to the public. Her role in the engineering profession is providing support for community meetings, public awareness, and consent agreements. Prior to her role in engineering, she worked in academia for international students developing marketing publications and communications in various modalities, financial review, and faculty services.

Recent Public Works Projects:

Golden State Water Company – Ardath Avenue Area Main Replacement
Golden State Water Company – 80th Street Area Main Replacement
Golden State Water Company – Dalton Plant Area Main Replacement
Golden State Water Company – Commercial Avenue Area Main Replacement
Golden State Water Company – Merino Avenue Area Main Replacement
Irvine Ranch Water District – Lake Forest Recycled Water Services at Bake Parkway and Toledo
Monte Vista Water District – Pipeline Avenue Pipeline Relocation for Bridge Reconstruction
Orange County Water District – Talbert Barrier Pipeline Upgrade
Three Valleys Municipal Water District – Pomona Well 20 Pipeline Alignment Study

Hernan Montoya, SE, PE – Arcon Structural Engineers - Structural

Mr. Montoya has over 40 years of experience as a structural engineer designing civil and public works projects, and a wide variety of commercial, residential, industrial buildings, including hotels, restaurants, apartment complexes, senior housing, warehouses, office complexes, schools, mining plant equipment supports and structures, bridges, etc. He has worked in a wide variety of structural projects in charge of engineering, quality assurance, coordination with clients, other consultants and building officials, and field support. Professional experience also includes repair and retrofitting of existing building and bridge structures.

Recent Public Works Projects:

Santa Margarita Water District – Esencia Lift Station
Santa Margarita Water District – SC-6 Flow Control Facility

Jacob Sharp, PLS – D. Woolley and Associates, Inc. – Land Survey

Mr. Sharp has more than 18 years of experience specializing in boundary analysis, ALTA surveys, survey research, legal descriptions, topographic mapping, and Records of Survey in Los Angeles and Orange counties. His expertise in surveying ranges from cost estimates and field surveying to preparation of deliverables. He is also familiar with control surveys for boundary and design survey projects.

Mr. Sharp manages field survey crews through scheduling and survey calculations, as well as office support. Recently, he provided ALTA surveys for the Port of Long Beach in conjunction with the purchase of the World Trade Center properties. Mr. Sharp's software skills include Civil 3D, MicroStation/InRoads, and StarNet, as well as Microsoft Office and Revit BIM software.

Recent Public Works Projects:

Garden Grove Sanitary District – Project 92 Sewer Replacement Project
Garden Grove Sanitary District – Project 93 Sewer Replacement Project
Golden State Water Company – Ardath Avenue Area Main Replacement
Golden State Water Company – Dalton Plant Area Main Replacement

Michael Houlihan, AICP – ESA – Environmental Compliance

Mr. Houlihan is a highly experienced environmental services team leader who is able to stimulate teamwork, camaraderie, and productivity. With over 30 years of industry experience in directing, managing, and preparing environmental documentation within Southern California, he has lead numerous project teams through the successful completion of environmental processes; many being high-profile projects. These projects included water/wastewater infrastructure, planned communities, community land use planning, residential/commercial developments, parks/schools, transportation/circulation improvements, and energy facilities. His expertise is in providing high quality documents by resolving issues as they arise and through proactive and responsive communication.

Youssif Houssein, PE – ID Modeling – Hydraulic Models / Surge

Mr. Hussein has specialized experience in water resources and environmental engineering, primarily in hydraulic modeling for water distribution systems, wastewater, and storm water collection sewer system, and hydrology. He has specialized expertise in the development and application of hydraulic models, including the use of peripheral information systems (customer billing, GIS, and databases) to support hydraulic model development and master planning projects.

Jennifer Wood – ID Modeling – Hydraulic Models / Surge

Ms. Wood has been a Civil engineer for 8+ years with experience in hydraulic modeling and utility operations. She has managed and led a team of 16 employees in jobs relating to GIS, water quality, telemetry, utility operations, utility line location, utility valve and fire hydrant asset management, and utility water line projects. Ms. Wood has extensive experience using InfoWater, H2OMap Water, ESRI ArcGIS.

Larry Mullen, EE – Mullen and Associates – Electrical / I&C

Mr. Mullen is a registered Electrical Engineer in seven states and has over 30 years of experience in electrical and control system engineering. Project have included institutional, governmental and public buildings. Specialized efforts include medium voltage distribution, stand-by generation, digital communications, CCTV and fire protection.

Recent Public Works Projects:

City of Fullerton – Design Review of Laguna Booster Pump Station Replacement

Irvine Ranch Water District – MWRP Irvine Interceptor Sewer Manhole Access Project

Santa Margarita Water District – Esencia Lift Station

Santa Margarita Water District – SC-6 Flow Control Facility

Trabuco Canyon Water District – Dove Canyon and Robinson Ranch Recycled Water Pump Station

Section 3 – Similar Projects

On-Call Engineering / Staff Augment for Inspection

Lake Arrowhead Community Services District

CLIENT REFERENCE

Lake Arrowhead Community Services District
Aida Hercules-Dodaro, PE, PMP
District Engineer
27307 State Highway 189
Blue Jay, CA 92317
(909) 744-7096

TEAM INVOLVEMENT

Joseph Gutierrez, PE
Project Manager

Dennis Phinney, PE
Project Engineer

Matthew McCormac, EIT
Civil Designer

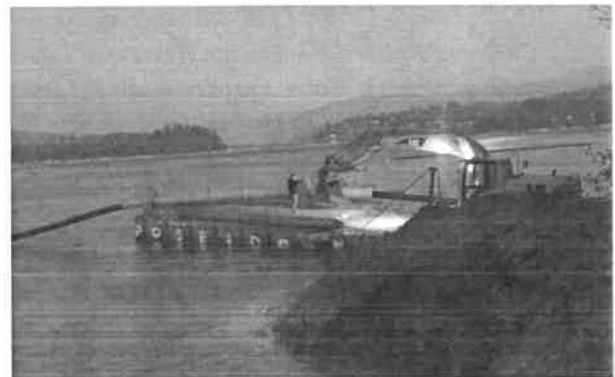
JIG was contracted by Lake Arrowhead Community Services District for two contracts to supplement their in-house staff. The first contract is for **On-Call Engineering Services**. JIG staff was called on to perform small task orders for engineering work as needed to complete current in-house projects. These task orders are as listed below.

- ▶ Engineering support and calculations for the Palisades Sewer Rehabilitation Project.
- ▶ Engineering support and calculations for Highway 189 Sewer Rehabilitation Project
- ▶ Engineering calculations for dead and live load over existing concrete sewer pipe
- ▶ Fireflow calculations for Field Operations and Administration Building
- ▶ Preparation of RFP for Updates to Lake Arrowhead CSD's Urban Water Management Plan and Watershed Sanitary Survey
- ▶ Preparation of RFP for Spyglass Reservoir Slope Reconstruction and Stabilization Feasibility Study
- ▶ Preparation of RFP for Design of Field Operations Headquarters
- ▶ Preparation of specifications and bid documents for Recoating of the Bernina Potable Water Tanks
- ▶ Preparation of figures and bid documents for Amador Tank Site Repaving Project
- ▶ Preparation of figures and bid documents for Banff Tank Site Repaving Project
- ▶ Preparation of figures and bid documents for Potomac Tank Site Repaving Project
- ▶ Preparation of figures and specifications for Grass Valley Treatment Plant Laboratory Offices

The second contract is for **Staff Augment for Inspection Work**. JIG assigned a professional civil engineer as a full-time Resident Engineer for the North Bay Pump Station Project. JIG provided full-time construction inspection to observe construction progress, monitored conformance with the construction plans and specifications, provided assistance with design deviations, and acted as the District representative on site.

Project construction included the following items:

- ▶ Demolition of existing facilities including pump station, vaults, pumps, valves, and electrical equipment
- ▶ Construction of on-shore pump station structure with stone veneer, access hatch with vertical turbine pumps and motors, piping, valves, and surge tank.
- ▶ Construction of electrical building extension including conduits, wiring, manual transfer switch, switchgear, VFD's and instrumentation.
- ▶ Construction of in-lake pump station including submersible pumps, check and isolation valves, and electrical conduits.



Alignment Study for Pipeline to Well 20

Three Valleys Municipal Water District / City of Pomona

CLIENT

Three Valleys Municipal
Water District
Ben Peralta, PE
1021 E Miramar Avenue
(909) 621-5568 x109

TEAM INVOLVEMENT

Joseph Gutierrez, PE
Project Manager

Matthew McCormac, EIT
Civil Designer

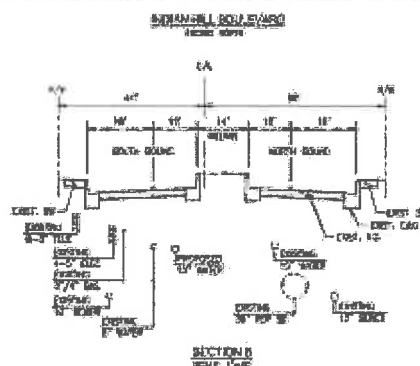
Katelyn Nguyen
Utilities / Public Relations

To increase sales of treated water to the City of Pomona, Three Valleys Municipal Water District contracted with JIG to perform an alignment study for a new pipeline in the City of Claremont, from the existing metered connection south of the Mills Avenue and Baseline Road to Pomona's Well 20/Reservoir No. 9 site. From Pomona's perspective, District water can be used to supplement City water supply by blending with high-nitrate groundwater from Well 20. Well 20 discharges to Reservoir No. 9 but is currently inactive

due to nitrate levels more than the maximum contaminant level (MCL) established by the EPA under the authority of the Safe Drinking Water Act.

JIG completed the following tasks for the alignment study:

- ▶ Researched existing utilities in private property and public right-of-way.
- ▶ Coordinated with outside stakeholders including the City of Claremont, Rancho Santa Ana Botanical Gardens, Claremont University Consortium, and Claremont Unified School District
- ▶ Completed hydraulic calculations to size the proposed pipeline based on flows required to blend with high nitrate City water
- ▶ Developed three alternative alignments to a level sufficient for evaluation of feasibility, traffic disturbance, constructability, and preliminary costs.
- ▶ Prepared preliminary design for improvements inside the Reservoir No. 9 site including improvements to Well 20 discharge piping.
- ▶ Prepared a Technical Memorandum to summarize the alignment study.



Ardath Area Water Main Replacement Project

Golden State Water Company

CLIENT

Golden State Water Company
Conde Ventura
Project Engineer II
19750 S. Vermont Ave, Suite 115
Torrance, CA 90502
(310) 436-6950 Ext. 107

TEAM INVOLVEMENT

Joseph Gutierrez, PE
Project Manager

Matthew McCormac, EIT
Civil Designer

Katelyn Nguyen
Utilities/Permits

Jacob Sharp, PLS
Land Survey

This project was a fast-track design-build contract for Golden State Water Company for 7,500 lineal feet of water main replacement in the City of Gardena. The work included replacing existing 4-inch through 12-inch cast iron mains with 8-inch and 12-inch C-900 PVC water main on Manhattan Beach Boulevard, Redondo Beach Boulevard, and miscellaneous residential areas. The project also included replacing fire hydrants, reconstruction and reconnection of existing service laterals, constructing blow-off assemblies,

and air-release valve assemblies.

The main project challenge was the schedule of completion mandated by the City of Gardena which required a 3 1/2-month design and construction period. JIG partnered with Doreck Construction, with both parties committing to the fast-track schedule.

JIG dedicated the manpower and resources to complete the design in one month while concurrently obtaining approval from Los Angeles County Fire Department, Metropolitan Water District, and the City of Gardena. JIG also prepared waiver exemptions and exhibits to Department of Health Services for water to sewer separations.

Management and engineering duties included utility research, preparation of base map using street improvement plans and utility record drawings, and meeting with outside agencies for approvals and permits.



Plant 3A Effluent Transmission Main Alignment Study

Moulton Niguel Water District

CLIENT

Moulton Niguel Water District
Rod Woods, PE
Project Manager
26161 Gordon Road
Laguna Hills, CA 92653
(949) 425-3547

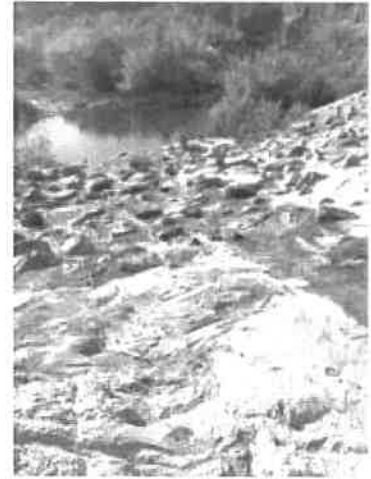
TEAM INVOLVEMENT

Joseph Gutierrez, PE
Project Manager

Dennis Phinney, PE
Project Engineer

Nancy Heim, PE
Civil Engineer

The Plant 3A Effluent Transmission Main (ETM) was originally constructed in 1978 as a pressure main to supply water from wells located in San Juan Capistrano to Lake Mission Viejo. Moulton Niguel Water District (MNWD) purchased the ETM and converted the pipeline from a pressure force main to a gravity pipeline to discharge Plant 3A treated effluent to the Chiquita Land Outfall. In its current condition, the Plant 3A ETM is subject to partial replacement or relocation because of age, future infrastructure improvements (i.e., railway, creek, street), maintenance issues, and environmental concerns.



The project team 1) performed a reach by reach evaluation of the ETM, 2) identified necessary pipeline replacement or relocation areas, 3) identified slope and creek bed improvements, 4) prepared a hydraulic model of the ETM to locate pressure condition segments, and 5) completed a risk evaluation to justify the magnitude and order of capital improvement projects.



The project required extensive research with multiple cities and agencies including the City of Mission Viejo, City of Laguna Niguel, City of San Juan Capistrano, Orange County Transportation Agency, and the Orange County Flood Control District. Available record drawings were compiled and used to develop the backbone of the hydraulic model and to calculate creek hydraulics for 100-year base flood elevations.

Available geotechnical information was collected and reviewed to determine the corrosivity of existing underground conditions. Additional geotechnical investigations were also completed to evaluate the stability of an existing slope near the alignment of the ETM.

In areas where the ETM was recommended for relocation, four alternative alignments were presented and evaluated. The most feasible alternative, which relocated the pipeline away from Metrolink railroad right-of-way and Oso Creek, was recommended.



Beacon Hill Pump Station Pump and Engine Replacement

Moulton Niguel Water District

CLIENT

Moulton Niguel Water District
Rod Woods, PE
Project Manager
26161 Gordon Road
Laguna Hills, CA 92653
(949) 425-3547

TEAM INVOLVEMENT

Joseph Gutierrez, PE
Project Manager

Dennis Phinney, PE
Project Engineer

Nancy Heim, PE
Civil Engineer

Moulton Niguel Water District owns and operates the Beacon Hill Pump Station which is one of two pump stations serving domestic water to the 750 Pressure Zone. The second pump station is the Rancho Reservoir Pump Station located in the northerly area of the zone. The 750 Pressure Zone is a closed system taking supply from the Zone 650 reservoirs.

The Rancho Reservoir booster pumps have the capability to maintain service during a power outage via power supplied by an onsite standby diesel generator. For Beacon Hill Pump Station, the existing high-flow pump is powered by a single source, an LPG fueled engine without backup power. The lack of a secondary power source was a concern for the District. The



project objectives were as follows:

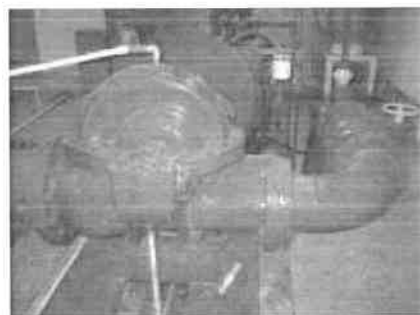
- ▶ Replace the existing aging LPG engine drive with a new engine capable of being fueled by two power sources; and
- ▶ Replace pumping capacity in-kind or increase if possible at a minimal expenditure.

For preliminary design, six different alternatives were considered for three potential improvement sites. The six different alternatives were as follows:

- ▶ New pump with LPG engine to match current setup;
- ▶ New pump with dual-fuel (natural gas/LPG) engine;
- ▶ New pump with diesel engine;
- ▶ New pump, VFD driven motor and standby LPG generator;
- ▶ New pump, VFD driven motor and standby dual-fuel generator;
- ▶ New pump, VFD driven motor and standby diesel generator.

The three potential improvement sites were as follows: 1) Beacon Hill Pump Station, 2) Golden Lantern Recycled Water Pump Station, and 3) Rancho Reservoir.

A Preliminary Design Technical Memorandum was prepared summarizing the evaluation of alternatives complete with advantages and disadvantages as well as preliminary estimates. Ultimately, the District opted with the new pump with diesel engine at the Beacon Hill Pump Station site.



Construction plans were prepared which included selection of the replacement pump coupled to a Tier 4 diesel generator. Building improvements included installation of large intake and exhaust louvers for the new generator. Site improvements included a diesel fuel tank within a concrete containment area. The project required permit acquisition from Orange County Fire Authority for the fuel tank and South Coast Air Quality Management District for the diesel engine.

Rehabilitation of West Garden Grove Booster Pumping Facility

City of Garden Grove

CLIENT REFERENCE

City of Garden Grove
Samuel Kim, PE
Water Manager/Engineer
13802 Newhope Street
Garden Grove, CA 92840
(714) 741-5534

TEAM INVOLVEMENT

Joseph Gutierrez, PE
Project Manager

Dennis Phinney, PE
Project Engineer

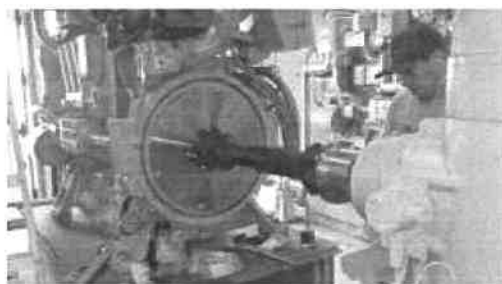
Nancy Heim, PE
Civil Engineer

Barry Safa, PE
Construction Manager

This project began with a preliminary investigation of the existing West Garden Grove Booster Pumping Facility. The preliminary investigation included a four-day condition assessment of the existing equipment; hydraulic testing of the three booster pumps and one well pump; well production and efficiency testing; vibration testing of the pump and engine equipment; efficiency testing of natural gas engines; and coordination with AQMD for revisions to existing air quality permit. A Preliminary Design Report was prepared which recommended redevelopment of the production well; replacement of all four engines with comparably sized natural gas engines with LPG fuel for back-up; replacement of the three booster pumps with newer comparably sized pump assemblies; replacement of the well pump; and minor revisions to the building enclosure.



Upon approval of the Preliminary Design Report, two separate contract documents were prepared to carry out the report recommendations. The first was for the redevelopment of Well No. 22, which included disassembly of the natural gas engine, drive shaft, and right-angle gear drive; removal and reconditioning of the well pump, replacing the pump column, light swabbing of the stainless-steel well casing; water quality testing; chlorination; and reinstallation of the pump, engine and appurtenances.



The second contract document was for the Rehabilitation of the West Garden Grove Booster Pumping Facility. The project included replacing four engines, three booster pumps, and right-angle gear drives. Additional items added into the contract documents included replacing the liquid propane tank and

vaporizers; removal of the oil and water separator; rehabilitation of the drainage system; replacing the engine cooling water piping system; replacing fuel lines; new exhaust fans; and constructing structurally reinforced openings in the roof system for future removal of the booster pumps.



Dove Canyon and Robinson Ranch Recycled Water Pump Station

Trabuco Canyon Water District

CLIENT REFERENCE

Trabuco Canyon Water District
Lorrie Lausten, PE
Project Manager
32003 Dove Canyon Drive
Trabuco Canyon, CA 92679
(949) 858-3025

TEAM INVOLVEMENT

Joseph Gutierrez, PE
Project Manager

Dennis Phinney, PE
Project Engineer

Matthew McCormac, EIT
Civil Designer

Larry Mullen, EE
Electrical

This project will provide the District an engineering design study Technical Memorandum for replacing two existing irrigation pump stations which served Trabuco Canyon Water District recycled water customers. The report provided recommendations for improvements, site alternatives with analysis, hydraulic calculations, and operating conditions. The report also provided a recommendation for future recycled water system expansion including tank size and location.

The Technical Memorandum will be used as a guideline for final design. The Technical Memorandum will include the following:

- ▶ Hydraulic analysis of recycled water pumping system complete with profile;
- ▶ Development of alternatives for replacement of the two pumping systems;
- ▶ Facility layout of the different alternatives;
- ▶ Cost estimates of the different alternatives;
- ▶ Comparison of alternatives with a recommendation;
- ▶ Design and construction schedule based on the recommended alternative; and
- ▶ Summary of pump station operations.



Trabuco Canyon Water District owns and operates the Robinson Ranch Wastewater Treatment Plant (RRWTP). RRWTP provides treated effluent used as reclaimed water for two general areas; Dove Canyon and Robinson Ranch. Both areas are closed systems and treated as separate recycled water zones.

The various components of the District's reclaimed water system were constructed as separate improvements to serve various developments in different time periods. The Robinson

Ranch Irrigation Pump Station was constructed as an add-on to the Dove Canyon Irrigation Pump Station. As such, the pumping systems are not efficient in its operations with uncommon pump size

Plant 137 and Live Oak Road Water Main Replacement

East Valley Water District

CLIENT REFERENCE

East Valley Water District
Eliseo Ochoa, PE
Project Manager
31111 Greenspot Road
Highland, CA 92346
(909) 806-4092

TEAM INVOLVEMENT

Joseph Gutierrez, PE
Project Manager

Dennis Phinney, PE
Project Engineer

Nancy Heim, PE
Civil Engineer

Jacob Sharp, PLS
Land Survey

Provided engineering services to extend and upsize the Mountain Zone water line on Live Oak Road. The improvements allowed transfer of domestic water services from the Little Sycamore Zone (five homes) into the Mountain Zone, and new services for a future development north of Arroyo Vista Drive. Construction was completed in three phases.



Phase A | Construction of 2,024 lineal feet of 8-inch and 12-inch pipe from the Mountain Zone point of connection at Live Oak Road, continuing along Terrace Drive, Orangewood Road, up to the Arroyo Vista Drive cul-de-sac. Services for the five residences in the Little Sycamore Zone were transferred into the new Mountain Zone extension. Service meters to the five residences were retrofitted with pressure regulators. Pipe trenching was especially difficult as it required breaking of boulders found in the excavation. The total quantity of boulders jack-hammered, removed from the trench, stockpiled, and disposed was approximately 110 tons.



Phase B | Miscellaneous piping and appurtenances in Plant 137 were retrofitted. Equipment not connected to the system which include piping, tanks and valves were removed. Any salvageable equipment was reused at other plants. Existing above ground piping and valves that showed signs of corrosion were replaced.

Phase C | Two 12-inch pipelines were constructed to replace the existing 6-inch and 8-inch steel pipelines in the private driveway. Concrete pavement on the private driveway was demolished and reconstructed where disturbed for the pipeline construction.

Construction management services were provided to coordinate with review of shop drawings, responses to requests for information, ensure conformance to contract documents, and administer pressure and bacteriological testing of the facilities. The Construction Manager assisted the District with Contractor change order and field order requests.

Alignment Study for Poseidon Desalination Distribution Pipelines

Orange County Water District

CLIENT REFERENCE

Orange County Water District
Sandy Scott-Roberts, PE
Principal Engineer
18700 Ward Street
Fountain Valley, CA 92708
(714) 378-3292

TEAM INVOLVEMENT

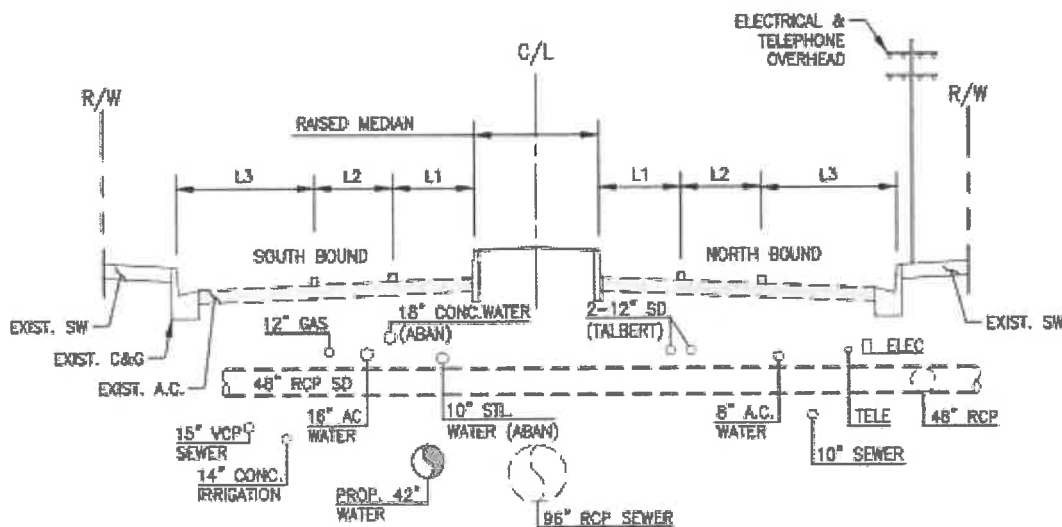
Joseph Gutierrez, PE
Project Manager

Katelyn Nguyen
Utilities

Michael Houlihan, AICP
Environmental Compliance

JIG assisted OCWD's Principal Engineer with alignment studies for several of Poseidon's large diameter desalination distribution pipelines. Our involvement included development of unit prices for tunneling, jacking and boring, large diameter pipeline construction, and pump station construction. The team prepared conceptual alignments and cross sections of the desalination distribution pipelines considering street widths and known existing utilities from the future Poseidon Plant to potential customers (adjacent cities). The completed alignments were as follows:

- ▶ 42-inch steel pipeline from Poseidon Plant to OCWD Plant (25,700 LF) – Newland Avenue / Hamilton Street / Brookhurst Street / Garfield Avenue
- ▶ 36-inch steel pipeline from Brookhurst to OC44 Connection (17,400 LF) – Adams Avenue / Placentia Avenue / Costa Mesa Country Club Golf Course / Harbor Boulevard / Fair Drive
- ▶ 48-inch steel pipeline from Hamilton Street to West Orange County Board Feeder (18,300 LF) – Magnolia Street / Atlanta Avenue / Newland Avenue



*Brookhurst Street Cross Section
Atlanta to Indianapolis
(Looking North)*

Jerry Lane, Della Lane and Loara Street Water Main Replacement City of Garden Grove

CLIENT REFERENCE

City of Garden Grove
Samuel Kim, PE
Water Manager/Engineer
13802 Newhope Street
Garden Grove, CA 92840
(714) 741-5534

TEAM INVOLVEMENT

Joseph Gutierrez, PE
Project Manager

Jacob Sharp, PLS
Land Survey

Prepared construction documents for replacement of 4,000 lineal feet of 12-inch and 8-inch waterlines in four areas of the City of Garden Grove. The project components included topographic mapping of the four areas, potholing and plotting of underground utilities, abandonment of fire flow deficient waterlines, construction of new waterlines with replacement fire hydrants and service laterals, and pavement resurfacing.



The four subject areas included Jerry Lane / Elmwood Street (near Agnes Ware Stanley Elementary School); Della Lane / Chapman Avenue (near Mark Twain School); and Avolencia Place / Euclid Avenue.

Street and Sewer Improvements for Richman Avenue City of Fullerton

CLIENT REFERENCE

City of Fullerton
Lorrie Lausten, PE
(Currently with Trabuco Canyon)
303 West Commonwealth Avenue
Fullerton, CA 92832
(949) 858-0277

TEAM INVOLVEMENT

Joseph Gutierrez, PE
Project Manager

The City of Fullerton required assistance with street and sewer improvements on Richman Avenue, Amerige Avenue, Drake Avenue, Wilshire Avenue, Whiting Avenue and Ford Avenue. At the project onset, the project team performed a field assessment of pavement conditions and geotechnical investigations to develop a scope of work for the project. Construction plans and specifications were prepared for the subject street and sewer improvements. The street improvements included removal of existing pavement section to subgrade, construction of new pavement section as recommended by the Geotechnical



Engineer, replacing concrete cross gutters, and replacing concrete access ramps. The sewer improvements included removal and replacement of existing 6-inch and 8-inch sewers and deteriorated manholes in the same alignment and trench.

Project design included preparation of traffic control plans for the street and sewer improvements at the Richman Avenue and Commonwealth Street intersection. The project team provided assistance to the Construction Manager for miscellaneous bidding and construction services including responding to RFIs, reviewing shop drawings, assisting in contractor disputes and visiting the site during construction.

Section 4 – Project References

CLIENT REFERENCES

JIG has developed strong relationships with many clients in the Southern California region. We encourage the City to reach out to the following individuals to discuss our qualifications and projects completed within the last five years.

CLIENT REFERENCES			
AGENCY / PROJECT	CONTACT	PHONE	EMAIL
City of Garden Grove	Samuel Kim, PE	(714) 741-5534	samk@ci.garden-grove.ca.us
Golden State Water Company	Conde Ventura	(310) 436-6950 x107	conde.ventura@gswater.com
City of Fullerton	Tiffany Foo, PE	(714) 738-6321	tfoo@cityoffullerton.com
Irvine Ranch Water District	Malcolm Cortez, PE	(949) 453-5854	cortez@irwd.com
Lake Arrowhead CSD	Aida Hercules-Dodaro, PE	(909) 336-7155	ahercules@lakearrowheadcsd.com
Long Beach Water Department	Eduardo Lomeli	(562) 570-2340	eduardo.lomeli@lbwater.org
Monte Vista Water District	Van Jew, PE	(909) 267-2113	vjew@mvwd.org
Orange County Water District	Sandy Scott-Roberts, PE	(714) 378-3292	sscott@ocwd.com
Trabuco Canyon Water District	Lorrie Lausten, PE	(949) 858-0277 x130	llausten@tcwd.ca.gov

Section 5 – Engineering Services Fee Schedule

HOURLY RATES

October 31, 2021

The following hourly rates will be used for this proposal and will remain effective until ~~December 31, 2018.~~

JIG Consultants

Administrative Assistant	\$ 50 / hr.
Permits and Utilities	\$ 75 / hr.
CAD Designer	\$ 95 / hr.
Civil Designer	\$ 100 / hr.
Civil Engineer	\$ 125 / hr.
Project Engineer	\$ 135 / hr.
Constructability Review	\$ 135 / hr.
Senior Project Engineer	\$ 160 / hr.
Quality Control Officer	\$ 160 / hr.
Principal / Project Manager	\$ 160 / hr.

Reimbursables:

1. Standard computer and technology costs are incorporated into these hourly rates as well as direct labor, overhead, fringe benefits and fee.
2. Mileage at \$0.545 per mile (or current IRS allowable rate) and parking expenses incurred by the project team are charged at cost.
3. Prints, plots, messenger service, subsistence, air travel, and other direct expenses will be charged at cost plus 10%.
4. Services of outside consultants will be charged at cost plus 10% (not included in rates shown below).

Subconsultants

Arcon Structural Engineers	Structural Engineer	\$ 150 / hr.
	Principal Structural Engineer	\$ 175 / hr.
D. Woolley & Associates, Inc.	2-Man Survey Crew w/ Equip.	\$ 281 / hr.
	Professional Land Surveyor	\$ 195 / hr.
Environmental Science Assoc.	Senior Associate	\$ 140 - \$ 160 / hr.
	Managing Associate	\$ 165 - \$ 195 / hr.
	Director	\$ 200 - \$230 / hr.
ID Modeling	Project Engineer	\$ 145 / hr.
	Senior Project Manager	\$ 195 / hr.
Mullen and Associates, Inc.	Principal Electrical Engineer	\$ 140 / hr.

RESUMES

JIG's engineering design team has the experience and qualifications on assignments typical to those anticipated for the City's On-Call Engineering for Water Engineering Design. Brief resumes for each person, including subconsultants, shown on the organization chart are included starting on page 26 of the proposal.

Joseph Gutierrez, PE, PMP, ENV SP

Project Manager / Senior Project Engineer

REGISTRATION

CA/Professional
Engineer/Civil/#55604

AZ/Professional
Engineer/Civil/#37808

EDUCATION

1991/BS/Civil
Engineering/University of
California, Irvine

CERTIFICATIONS

2013/Institute for Sustainable
Infrastructure/Envision
Sustainability Professional

Project Management
Institute/Project Management
Professional/#318148

PROFESSIONAL AFFILIATIONS

Project Management Institute

American Society of Civil
Engineers

Orange County Water Association

Mr. Gutierrez possesses over 28 years of experience in planning, design and construction of water and wastewater facilities for various municipalities as well as the private sector. He has served as Senior Project Manager and key Project Engineer for the design and construction of pipelines, pumping facilities, storage reservoirs, and sewer facilities in the Southern California region.

He has performed construction observation, construction management, and resident engineering duties on large water and wastewater projects with construction costs up to \$180 million. He is a fully certified Project Management Professional (PMP), knowledgeable in every facet of business and project management per the Project Management Body of Knowledge, advocated by the Project Management Institute (PMI).

Experience

Pipelines

Design of 80th Street Area Main Replacement, Golden State Water Company, County of Los Angeles, CA: Project Manager for preparation of the construction plans for 7,000 lineal feet of water main replacement in the County of Los Angeles. The work included replacing existing 4-inch through 12-inch cast iron mains with 8-inch and 12-inch C-900 PVC water main on several residential streets and arterial streets such as Firestone Boulevard. The project also included replacing fire hydrants, reconstruction and reconnection of existing service laterals, transferring services from alleys to the frontage streets, constructing fire hydrant assemblies, and air-release valve assemblies.

Design of Commercial Avenue Area Main Replacement, Golden State Water Company, Calipatria, CA: Project Manager for preparation of the construction plans for 650 lineal feet of water main replacement in the City of Calipatria. The work included replacing existing 4-inch mains with 8-inch C-900 PVC water main on Brown Avenue, alley south of Freeman Street, and on Commercial Avenue.

Ardath Area Water Main Replacement Project, Gardena, CA: Project Manager for preparation of the construction plans for a fast-track design-build contract for Golden State Water Company. This project was for construction of 7,500 lineal feet of water main replacement in the City of Gardena. The work included replacing existing 4-inch through 12-inch cast iron mains with 8-inch and 12-inch C-900 PVC water main on Manhattan Beach Boulevard, Redondo Beach Boulevard, and miscellaneous residential areas. The project also included replacing fire hydrants, reconstruction and reconnection of existing service laterals, constructing blow-off assemblies, and air-release valve assemblies.

Plant 3 Effluent Transmission Main Study, Moulton Niguel Water District, Mission Viejo, CA: Project Manager responsible for preparing a planning study for replacement of the Plant 3 Effluent Transmission Main. The planning study included a reach by reach evaluation of the ETM and recommended necessary pipeline replacement or relocation areas and slope and creek bed improvements. In preparing the planning study, a hydraulic model was developed to locate pressure condition

segments in the pipeline. A risk evaluation was also completed to justify the magnitude and order of capital improvement projects.

Plant 137 and Live Oak Road Water Replacement, East Valley Water District, Highland, CA: Project Manager for design of 3,200 lineal feet of 12-inch ductile iron pipe in a residential neighborhood to deliver Plant 137 potable water to Mountain Zone customers as well as future residential development. The new pipeline extended the pressure system boundary and converted five homes from the Little Sycamore Zone to the Mountain Zone system.

Jerry Lane, Della Lane, and Loara Street Water Main Replacement, City of Garden Grove, CA: Project Manager for the preparation of contract documents for replacement of 4,000 LF of waterlines in four areas of the City. Tasks included topographic mapping, potholing and plotting of underground utilities, abandonment of fire flow deficient waterlines, construction of new waterlines with replacement fire hydrants and service laterals, and pavement resurfacing.

Area 1 Water Main Replacement, City of Manhattan Beach, CA: Project Manager for preparation of construction plans and specifications for replacement of 7,000 lineal feet of undersized water lines in the high pressure zone area of the City. Project design included replacement and abandonment of existing water lines, connections to existing water meters, replacement of fire hydrant assemblies, installation of pressure reducing valves where low pressure zone customers were converted to high pressure.

Sepulveda Boulevard and 2nd Street Water Main Replacement, City of Manhattan Beach, CA: Project Manager responsible for design of a 12-inch waterline on Sepulveda Boulevard. The project constructed 2,600 lineal feet of 12-inch waterline between Manhattan Beach Boulevard and Second Street with system cross connections at three street intersections. The project included preparation of a base map with underground utilities, abandonment of existing waterlines and services, and construction of new waterlines, fire hydrants, and service laterals. Sepulveda Boulevard is under the jurisdiction of Caltrans therefore all work within the highway required a Caltrans encroachment permit.

Water Main Replacement Projects, City of Pomona, CA: Project Manager for the preparation of construction plans and specifications for replacement of existing water mains of various sizes in various areas of the City. Project design consists of replacement and abandonment of existing water lines, connection to existing water meters, replacement of fire hydrant assemblies, connections to existing water system at several street intersections, new waterline crossing over the Thomson Creek Channel, and pavement repair/upgrade. The various projects include:

District 1 and 6 Water Main Replacement – 5,500 LF of waterline on Gordon Street and Bonita Avenue.

District 4 Phase II Water Main Replacement - 10,500 LF of 4- and 6-inch water main with 8-inch ductile iron pipe on several residential areas.

District 1 and 2 Water Main Replacement - 7,500 LF of existing 6-inch water main with 8-inch ductile iron pipe on White Avenue.

District 2 Water Main Replacement - 16,000 LF of existing water mains of various sizes with 8-inch ductile iron pipe on 2nd, 3rd, and 4th Street in the City of Pomona (Downtown Area).

Reservoirs and Booster Stations

Dove Canyon and Robinson Ranch Recycled Water Pump Station – Phase 1, Trabuco Canyon Water District, Trabuco Canyon, CA: Project Manager for preparation of a Preliminary Design Technical Memorandum for replacing two existing irrigation pump stations which served Trabuco Canyon Water District recycled water customers. The report provided recommendations for improvements, site alternatives with analysis, hydraulic calculations, and operating conditions. The report also provided a recommendation for future recycled water system expansion including tank size and location.

Facilities Master Plan of the La Palma Reservoir and Pump Station Complex, City of Anaheim, CA: The City of Anaheim has operated this water storage and pumping facility since 1953. The reservoirs are at risk of damage from seismic activity and the City desires a phased master plan for replacement or retrofit. The facilities master plan evaluated the cost and non-cost factors of different strategies of retrofit to the complex. The potential retrofits include upgrading the reservoir with a new liner and a new aluminum roof. Another retrofit included rehabilitation of the existing booster pump station.

Beacon Hill Pump Station Pump and Engine Replacement, Moulton Niguel Water District, Laguna Niguel, CA: Project Manager for preparation of Preliminary Design Report for the Beacon Hill Pump and Engine Replacement Project. The report evaluated various alternatives, 18 in total, studying different fuel sources (natural gas, LPG, and diesel), electrifying the engine, and relocating the fire pump and engine to two other District sites. A hydraulic model was developed to determine the feasibility of relocating the fire pump at the two sites.

Generator Replacement at Five Reservoir Sites, Moulton Niguel Water District, CA: Project Manager for preparation of a Preliminary Design Technical Memorandum for installation of 14kW generators with LPG tanks at four reservoir sites and a 25-kW generator with LPG tank at the Bridlewood Flow Control Facility. Project scope included sizing and siting of the generators, LPG tanks, and automatic transfer switches.

Plant 40 Pump Station Improvements, East Valley Water District, Highland, CA: Project Manager for design and preparation of contract documents for Plant 40 Booster Station. Plant 40 improvements included four 1,000 GPM vertical turbine pumps to maximize getaway capacity from the Intermediate Zone to the Upper Zone. Pump station equipment included motor operated check valves, a surge anticipator valve, a magnetic flow meter, and miscellaneous electrical and instrumentation improvements.

Rehabilitation of West Garden Grove Well 22/Booster Pumping Facility, City of Garden Grove, CA: Project Manager for preparation of the Preliminary Design Report. Preliminary investigations included condition assessment of the existing facility, hydraulic testing of three booster pumps and one well pump, testing of natural gas engines, coordination with AQMD for revisions to existing permit, and conversion of one natural gas engine to electric motor.

Michael Palzes, PE

Senior Project Engineer

REGISTRATION

CA/Professional
Engineer/Civil#42752

EDUCATION

1983/BS/Civil
Engineering/Cleveland State
University

Mr. Palzes has over 32 years of experience in the field of civil engineering, specializing in sewage lift station, water booster pump stations, and pipeline projects. His experiences include rehabilitation of pumping facilities as well as replacement of aging water pipeline infrastructures. He has been responsible for the preliminary and final design on many pipeline projects including design of pressure reducing stations and flow control facilities. He has provided oversight of all related disciplines and subconsultants, including topographic survey, geotechnical investigation, and utility potholing. He has also served as Quality Control officer for many civil engineering projects and reports.

Experience

Sewer Lift Stations

Esencia (Planning Area 2) Lift Station Improvements, Santa Margarita Water District, Rancho Santa Margarita, CA: Provided design for 650 gpm submersible pumps, a storage well, a valve vault, an emergency intertie/meter vault, an odor scrubber system, ozone/oxygen force main injection system, an emergency generator, storm detention and storage facilities. Responsibilities included the preparation of hydraulic analysis and operation with two operating conditions (interim and ultimate flows), selection of pumps, preparation of the preliminary design report, design of mechanical plans and specifications, and construction engineering assistance.

Parcel 5 Lift Station, Santa Margarita Water District, Rancho Santa Margarita, CA: Project included two submersible pumps in a precast wet well, valve and meter vault with a force main bypass connection, onsite odor control system, an emergency generator and MCC/Control System/RTU housed in NEMA 4X cabinets.

Plano Lift Station Upgrades & Improvements, Santa Margarita Water District, Rancho Santa Margarita, CA: Project provided 5,800 gpm of pumping capacity with upgrades and improvements including the replacement of MCC and control system, additional pump, piping and valve system, a 150,000 gallon storage well, relocation of 1,000-gallon diesel fuel storage tank and intertie connection with two pumps for a wet well bypass pumping system from the storage well. Project Manager responsible for preparation of the preliminary design report, mechanical/civil design plans and specifications, quality control and construction engineering assistance.

Horno Lift Station, Force Main, Sewer, Recycled Water Pipeline and Access Road, Santa Margarita Water District, Ladera Ranch, CA: New facility included four sets of pumps with two units operated in series to provide 406-foot lift and 3800 gpm capacity for the Ladera Ranch Development. Project Manager responsible for the preliminary design report, hydraulic analysis, pump selection, facility layout, odor generation study, civil and mechanical design plans, specifications and construction engineering assistance. Project also included a wet well, a storage well, a 750 kW generator housed in building with a five-ton bridge crane, chemical injection system, a surge tank, an intertie valve

vault flow meter, 1,400-lf of 16-inch force main, 24-inch sewer, 12-inch recycled water main, 8-inch domestic water main and access road.

Pico Sewage Lift Station Construction Costs, Santa Margarita Water District, San Clemente, CA: New facilities included two dry well pumps with 1,100 gpm capacity and 300-foot lift, a wet well, a storage well, a 400 kW generator, building enclosure, a surge tank, and chemical injection system. Served as Project Manager responsible for preliminary design and facility layout, mechanical and civil design plans and specifications, quality control and construction engineering assistance.

Talega Lift Station Improvements, Santa Margarita Water District, Rancho Santa Margarita, CA: New facilities included a dry well, two sets of 1,650 gpm pumps operated in series with 400-foot lift, a 600 kW generator, an above ground 1,000-gallon diesel fuel tank, a surge tank, building enclosure, a storage well, a flow meter, an intertie vault for connection to two force mains and chemical injection system. Project Manager responsible for preliminary layout and study for improvements, pump selection, system hydraulics, site grading and access, mechanical/civil design plans, grading plans, quality control and construction engineering assistance.

Canyon Hills Lift Station, Elsinore Valley Municipal Water District, Lake Elsinore, CA: Project included two submersible pumps in a wet well, a storage well, a valve and meter vault, an emergency generator housed in building, VFD / MCC / instrumentation and control system, bathroom, air compressor and blower for air injection into force main and wet well, sodium hypochlorite chemical room for storage and injection pumps.

Braddock Lift Station Upgrades and Improvements, City of Culver City, CA: The project rehabilitated a 1,550 gpm sewage pump station located in a residential tract. Served as Project Manager responsible for mechanical design and construction. Responsibilities included the preparation of the preliminary design report, final mechanical design plans, specifications, quality control, onsite construction. Requirements included configuration and design of a new wet well with new submersible pumps, shoring/dewatering, and demolition of existing improvements while maintaining pump operation during the rehabilitation of facility.

Shaw's Cove Lift Station Upgrades and Improvements, City of Laguna Beach, CA: APWA's 2009 Project of the Year. Served as Project Manager responsible for preparation of mechanical/civil plans, preliminary design report, detailed construction phasing plan to maintain pumping operation during rehabilitation of the facility. Provided construction engineering assistance. Project improvements required replacement of dry well pumps, piping, valves, flow meter, new emergency generator, new MCC and controls, new wet well, conversion of old wet well into storage well, and a brand new building.

Booster Stations

Bonita Park Booster Pump Station, City of La Habra, CA: Project included five 250-hp vertical turbine pumps housed in aboveground building that match the park theme. Project included a 600 kW emergency generator and fuel storage system, a water treatment and analyzer system, a flow control facility, new water well and 0.50 MG concrete buried tank forebay.

Westlake Village YMCA Fire Pump System, City of Westlake Village, CA: Engine driven fire pump housed in building to provide fire flow for the YMCA building and improvements, Fire pump was a horizontal split case pump rated for 2500 gpm at 68 psi. Project included a diesel fuel storage system, controls, silencer and sprinkler system for the fire pump building.

Chumash Water Pump Station, City of Simi Valley, CA: City of Simi Valley water system upgrades and rehabilitation for the Marr Ranch Development, 1355 Zone Chumash Water Pump Station. Services included preliminary and final design with construction engineering assistance. Project rehabilitated an existing outdoor pump station equipped w/ three vertical turbine pumps, control valves, piping, flow meter, an emergency generator, pressure relief and reducing system, control system and MCC housed in a block building.

Dalton Well No. 2, Golden State Water Company: 350-hp vertical turbine pump housed in a building on tracks, piping, valves, chemical injection system, static mixer, flow meter and pressure vessel for contact time.

Tesoro Water Booster Pump Station, Santa Margarita Water District, Rancho Santa Margarita, CA: Four 250-hp vertical turbine pumps housed in a building with a 600 kW emergency generator, two surge tanks, throttling ball valve, controls, MCC, pump control valve, and miscellaneous site improvements.

Talega Water Booster Pump Station, Santa Margarita Water District, Rancho Santa Margarita, CA: Four 125-hp vertical turbine pumps controlled by variable speed drives for dual operating systems pumped to either a closed system or Zone II reservoir. The pumps were housed in an above building with piping, valves, a 300 kW emergency generator, a diesel storage system, a pneumatic tank for surge protection and closed system operation, flow meter and site improvements.

Casa Del Sol Pump Station Rehabilitation, Santa Margarita Water District Rancho Santa Margarita, CA: Rehabilitation of a water pump station with new horizontal pumps and motors, valves, piping and meter. Additional modifications to site included new paving, bypass valve system, and replacement of existing venturi meter.

Lakeside Pump Station Rehabilitation 800 Hp Engine and Pump, Santa Margarita Water District, Rancho Santa Margarita, CA: Project included the rehabilitation of 800-hp engine driven pump system. The engine required a major overhaul by the original manufacturer and was overhauled at the Waukesha Service Center. Project required removal and replacement of engine gravity block for mounting the engine unit within existing building, removal & replacement of the muffler silencer and catalyst converter, automatic oil supply system, engine heat exchanger and piping, new right angle gear.

AMP Booster Pump Station MCC & Control System Replacement, Santa Margarita Water District, Rancho Santa Margarita, CA: Provided preliminary and final design engineering to replace the existing MCC and control system with latest industry upgrades for a 9-pump booster station. The facility had a flow capacity of 60.75 cfs that utilized 2000-hp pumps/motors and an emergency generator rated at 900 kW.

Dennis Phinney, PE, ENV SP

Quality Control Officer / Senior Project Engineer

REGISTRATION

CA/Professional
Engineer/Civil/#30778

CA/Professional
Engineer/Mechanical/#21533

AZ/Professional
Engineer/Civil/#15704

EDUCATION

1975/BS/Civil
Engineering/Rensselaer
Polytechnic Institute

1976/MS/Civil
Engineering/Rensselaer
Polytechnic Institute

1983/MS/Business
Administration/Pepperdine
University

CERTIFICATIONS

2013/Institute for Sustainable
Infrastructure/Envision
Sustainability Professional

PROFESSIONAL AFFILIATIONS

American Water Works
Association

Member of Greenbrook Committee

Mr. Phinney's 38 years of experience includes design of 75 pump or lift stations, 20 well facilities, 12 steel or concrete reservoirs, over 100 miles of pipelines, and 30 water or wastewater treatment facilities in California and Arizona. He has prepared water and wastewater master plans for service areas with an aggregate population exceeding 1 million people, has performed post-earthquake structural evaluations or retrofit designs on over 300 structures. He led the task force writing three sections of the *2015 Greenbook Standard Specifications for Public Works Construction*, and authored 12 annual editions of an engineering reference book, the *Code Finder for Building and Construction*.

Experience

Pipelines

Philadelphia Street Recycled Water Pipeline Study, Inland Empire Utilities Agency, Ontario, CA: Project Engineer for preparation of study of alternate alignments, hydraulics and life-cycle costs for 30-inch recycled water main in Ontario, California. Study included evaluation of alternate materials and hangers for in-plant bridge crossing suspending 24 or 30-inch PVC or steel pipe.

Planning Area 6, Zones 6 & D Reservoirs, Irvine Ranch Water District, Irvine, CA: Prepared preliminary design report, plans, and specifications for 2.5 MG domestic water and 0.66 MG recycled water partially buried pre-stressed concrete tanks, 1,200 l.f. 16-inch domestic water and 1,200 l.f. of 20-inch recycled water transmission mains, control valve stations, reservoir management system, access road grading, site grading and remedial earthwork, site piping, and drains. Project included a Reservoir Management System with chlorine and ammonia injection, mixing and chlorine residual analyzers.

Bake Parkway Recycled Water Pipeline, Irvine Ranch Water District, Irvine, CA: Prepared preliminary design report and plans and specifications for approximately 3,400 linear feet of 12-inch diameter PVC pipe, 730 linear feet of 10-inch steel pipe in Caltrans bridge, 5,000 linear feet of 24-inch steel pipe, connections, pressure reducing station, and permitting with Caltrans and two cities.

Planning Area 6 Zone 4 & Zone C Reservoirs, Zone 4/6 BPS & Zone C/D BPS, Irvine Ranch Water District, Irvine, CA: Prepared preliminary design report, plans, and specifications for 3.5 MG domestic water and 2.2 MG recycled water partially buried pre-stressed concrete tanks, domestic water and recycled water pump stations with (4) 125-hp and (1) 50-hp VFD pumps each, reservoir management system, grading and site improvements, access road, 1,000 LF of 20-inch domestic water pipeline, 1,000 LF of 24-inch recycled water pipeline, 1,000 LF of 24-inch storm drain, site piping, drains, and vaults.

Reservoirs and Booster Stations

La Palma Reservoir and Pump Station, City of Anaheim, CA: Project Engineer for preparation of feasibility study, preliminary design report, plans and specifications for reconstruction of 4 MG Hypalon-lined and

aluminum roof La Palma Reservoir, new La Palma Pump Station including two 250-hp and two 125-hp pumps, standby power, remodeled restroom and chemical analyzer building, slip-lining of existing 12" cast iron pipe with new 10" HDPE pipe, inspection of and extensive pervious pavement and WQMP storm water capture facilities onsite.

Rosecrans Booster Station, City of Buena Park, CA: Project Engineer for preparation of plans and specifications for new booster station serving upper zones of Buena Park Water System including five pumps, (25 hp, two 50-hp and two 150-hp), standby power, onsite 0.8% sodium hypochlorite generation facilities, and rehabilitation of on-site 30" concrete cylinder pipe.

Linda Vista Reservoir and Pump Station, City of Anaheim, CA: Project Engineer for preparation of preliminary design report, plans and specifications for construction of 4.0 MG precast concrete reservoir, drainage facilities connecting to storm drains beneath Orange County Water District recharge basins (Anaheim Lake), improvements to on-site chlorination facilities, retrofit of structures to bring up to current seismic codes and relocation of an existing 11-pump pump station to pump from new reservoir to Zones 400 and 555. Plans included extensive grading and drainage plans including onsite retention to offset paving of unpaved area, trapezoidal vegetated swales to comply with SWPPP water quality management objectives and design of piping in groundwater recharge basin to withstand 275k scraper wheel loads.

Parkview Pump Station, City of Anaheim, CA: Project Engineer for preparation of preliminary design report, plans and specifications for construction of new domestic water pump station with two 200-hp vertical turbine pumps with 5,000-gpm pumping capacity, masonry block building, mechanical piping, electrical, SCADA, site improvements, propane fuel system including 3000-gallon pressure tank and retaining wall.

Berry Street Pump Station Drive Failure Investigation, City of Brea, Brea, CA: Reviewed technical information and failure data and prepared presentation on possible reasons for failure of right-angle drives at Berry Street Pump Station.

Warren Road Pump Station Design, Eastern Municipal Water District, Perris, CA: Project Engineer for upgrade of existing booster station to 1,600 hp with design discharge of 7,000 gpm per pump.

Wildomar Pump Station, Elsinore Valley Municipal Water District, Wildomar, CA: Project Engineer for preparation of plans and specifications for new pump station including 3 150-hp vertical turbine pumps under canopy, on-site sodium hypochlorite generation facilities and a masonry control and chlorination building,

Conversion of Natural Gas Engine Drive Pumps to Electric Motor Driven Pumps – Westhaven Booster Pump Station, City of Garden Grove, CA: Project Engineer for preparation of preliminary design report, plans and specifications for conversion of natural-gas-engine-driven pump station with one 250-hp well pump and three 150-hp, 3200-gpm booster pumps to electric motors including new electrical/backup generator masonry block building, two new flow meters, concrete repair and reconditioning in damaged valve vaults, and mechanical, architectural, electrical, and SCADA upgrades.

Arthur G. Robison, PE

Civil Engineer / Traffic Control

REGISTRATION

CA/Professional
Engineer/Civil#78222

EDUCATION

2006/BS/Civil
Engineering/California State
University, Long Beach (Cum
Laude)

PROFESSIONAL AFFILIATIONS

American Water Works
Association

Mr. Robison's qualifications include the planning and design of roadway rehabilitation, water pipeline facilities, and traffic delineation and traffic control plans. These projects have included traffic signal installation and modification plans, traffic striping plans for roads and bike trails, construction staging plans, traffic control plans and detour route plans. Many of these projects have required Caltrans' permit processing and multiple agency coordination.

Experience

Design of 80th Street Area Main Replacement, Golden State Water Company, County of Los Angeles, CA: Prepared traffic control plans for Firestone Boulevard and other arterial streets associated with the project. The project constructed 7,000 lineal feet of water main replacement in the County of Los Angeles. The work included replacing existing 4-inch through 12-inch cast iron mains with 8-inch and 12-inch C-900 PVC water main on several residential streets and arterial streets such as Firestone Boulevard. The project also included replacing fire hydrants, reconstruction and reconnection of existing service laterals, transferring services from alleys to the frontage streets, constructing fire hydrant assemblies, and air-release valve assemblies.

Nash Avenue Waterline Replacement, Downey, CA: Project responsibilities included design of a new 8-inch ductile iron domestic waterline to replace a deteriorated 4-inch cast iron line in Nash Avenue. Other project responsibilities included the review and approval of shop drawings.

Pacific Coast Highway Recycled Waterline Upsizing, Laguna Beach CA: Project responsibilities included the design of a new 16-inch HDPE recycled waterline to replace a deterioration and undersized 10-inch line in Pacific Coast Highway and a new underground bypass vault for an adjacent pump station. Other responsibilities included the review of Traffic Control Plans and obtaining a Caltrans Encroachment Permit.

Harbor South Bay Project, Dominguez Lateral, Phases 1A and 1B, West Basin Municipal Water District, Carson, CA: Project responsibilities included the design of traffic control plans for 1,100 LF of 12-inch, 7,300 LF of 8-inch, 4,100 LF of 6-inch recycled water pipelines. As the Traffic Control Engineer, responsibilities included overseeing the creation of traffic control plans and detour plans that conformed to the California MUTCD for Streets and Highways and municipality standards and assisting the design team in processing the plans through three separate jurisdictions for construction permitting.

Circle Way Storm Drain and Site Improvement, Laguna Beach CA: This project design included upsizing a dated storm drain system from 18-inch to 60-inch RCP, a new beach outlet structure, new beach access stairway, and realigning the existing 8-inch sewer and associated service laterals to accommodate the larger storm drain. A new Continuous Deflection Separation (CDS) Unit was designed and installed as a part of this project. Other responsibilities included Traffic Control Plans, Coastal Commission permitting, and construction assistance.

Hawthorne Boulevard Rehabilitation, Torrance, CA: Project responsibilities included the rehabilitation of Hawthorne Boulevard, a principal north-south arterial for the south bay region. This project provided for pavement rehabilitation, curb/gutter/sidewalk repairs and upgrades to curb ramps for ADA compliance. It also replaced all faded signs, illuminated street name signs and upgrade some associated traffic signal equipment. Traffic control plans, including detours, were also a part of this project.

Pacific Coast Highway Traffic Congestion Relief Project, Dana Point: Project responsibilities included the widening of Pacific Coast Highway (PCH) from the San Juan Creek Bridge to Crystal Lantern. The widening turned a four-lane facility to a six-lane facility. The project consisted of preparing environmental documentation; widening the roadway to six lanes; coordinating with Caltrans and obtaining an encroachment permit; designing off-site improvements, including a pedestrian bridge over PCH and improvements to the maintenance yard for Doheny Park State Beach; design elements included retaining walls, reconstructing all non-compliant ADA road features, decorative perimeter walls, joins to private properties, drainage structures and preparing a Storm Water Management Plan. Traffic control plans, including detours, and full roadway closures were also a part of this project.

Valley Boulevard Improvements, City of Alhambra, CA: Project responsibilities included preparing road rehabilitation plans and specifications, reconstructing all non-compliant ADA road features, designing raised medians and turn pockets, coordinating with Caltrans and obtaining an encroachment, design of a new striping concept, creation of signing and striping plans, creation of traffic control plans and preparing sidewalk reconstruction plans for City forces.

High West Side Pipeline Replacement Project, City of San Juan Capistrano, CA: Project responsibilities included the design of traffic control plans for a recycled water line running along Junipero Sierra underneath Interstate 5. As the Traffic Control Engineer, responsibilities included overseeing the creation of traffic control plans and detour plans that conformed to the California MUTCD for Streets and Highways and municipality standards and assisting in processing the plans through Caltrans District 12 for an encroachment permit.

Nancy Heim, PE

Civil Engineer / Specifications

REGISTRATION

CA/Professional
Engineer/Civil/#29252

EDUCATION

MS/Environmental Engineering,
University of Southern California

BS/Civil Engineering/University of
Southern California

Water Distribution System
Operation and Maintenance
Course, CSU Sacramento, May
2008

Ms. Heim has over 20 years of experience in several areas of civil and environmental engineering including water reuse projects and assessments, field studies, and evaluation of water and wastewater related programs and procedures. She has extensive experience in technical writing and has authored and co-authored several technical manuals relating to water and wastewater issues.

Ms. Heim has worked on a wide variety of design and planning projects. She is experienced in permitting, preparation of Water Quality Management Plans (WQMP), Water Pollution Control Plans (WPCP), and Storm Water Pollution Prevention Plans (SWPPP), and Water Supply Assessments (WSA). Her experience includes utility research, plan and specification preparation for domestic and recycled water pipelines, reservoir coating and improvements, and cathodic protection stations, shop drawing reviews, water master plan reviews, assistance with construction phase services, and water modeling support. Her experience includes work with numerous cities and water districts as well as projects requiring close coordination with agencies such as Caltrans, railroads, US Army Corps of Engineers, and Department of Fish and Wildlife.

Ms. Heim's qualifications also include experience in the field of education including curriculum development and teaching courses in water supply and wastewater treatment.

Experience

Responsibilities in the various projects listed below are varied, ranging from being Project Engineer, to more specialized involvement such as permitting, plans and specification preparation, and/or construction phase services.

Partial Listing of Water Pipeline Projects

On-Call Water Main Replacement for Cartagena & Boyar Street, Long Beach Water Department, Long Beach CA

Alley Conversion: Magnolia & Eucalyptus, Long Beach Water Department, Long Beach CA

Alley Conversion: Lewis/Lemon, Long Beach Water Department, Long Beach CA

Liberty Court, Long Beach Water Department, Long Beach CA

Empire Landing Waterline Replacement, Long Beach Water Department, Long Beach CA

Relocation of Recycled Water Main Adjacent to I-5, Central Basin Municipal Water District, Carson CA

Corona Del Mar Pipeline, City of Newport Beach, CA

Gardena Water Main, Golden State Water Company, Gardena CA

Bristol Street Water Main, City of Santa Ana, CA

Pacific Coast Highway Bottleneck, South Coast Water District, Laguna Beach CA

Temescal Canyon Road Non-Potable Water Pipeline, Lee Lake Water District, Corona CA

Large Potable Water Valve Replacement, Long Beach Water Department, Long Beach CA

Greenfield Recycled Water Pipelines, Moulton Niguel Water District, Laguna Niguel CA

Moulton Ranch III Recycled Water Pipeline, Moulton Niguel Water District, Laguna Niguel CA

Zone C Recycled Water Relocation at Sports Park Development, Irvine Ranch Water District, Irvine CA

Plant 137 and Live Oak Road Water Replacement, East Valley Water District, Highland CA

Partial Listing of Reservoir and Pump Station Projects

La Palma Reservoir and Pump Station Complex, City of Anaheim, CA:

Linda Visa Reservoir and Pump Station, City of Anaheim, CA

Reservoir Mixing Improvements Project, City of Anaheim, CA

Esencia Recycled Water Pump Station, Santa Margarita Water District, Rancho Santa Margarita CA

Andres Reservoir Improvements, East Orange County Water District, Orange CA

4A Potable Water Reservoir Coating and Improvement Project, South Coast Water District, Dana Point CA

Reclaimed Water #2 Reservoir and 5A Potable Water Reservoir Coating and Improvement Projects, South Coast Water District, Dana Point CA

Dana Point Reservoir Coating and Improvements, South Coast Water District, Dana Point CA

5B Reservoir Coating and Improvements, South Coast Water District, Dana Point CA

Planning Area 6, Zones 6 & D Reservoirs, Irvine Ranch Water District, Irvine CA

Planning Area 6, Zones 4 & C Reservoirs, Zone 4/6 BPS, And Zones C/D BPS, Irvine Ranch Water District, Irvine CA

Installation of Reservoir Management Systems (RMS) at 9 Domestic Water Reservoirs, Irvine Ranch Water District, Irvine CA

Plant 40 and Plant 134 Pump Station Improvements, East Valley Water District, Highland CA

West Pump Station Upgrades, City of Santa Ana, CA

Walnut Pump Station, City of Santa Ana, CA

Parkview Pump Station, City of Anaheim, CA

Conversion of Natural Gas Engine Drive Pumps to Electric Motor Driven Pumps – Westhaven Booster Pump Station, City of Garden Grove, CA

Barry Safa, PE

Constructability Review

REGISTRATION

1983/Professional
Engineer/Civil/CA #37137

EDUCATION

1982/Construction
Management/University of
California, Los Angeles

1976/MS/Management/State
University of New York, Albany

1965/BS/Civil Engineering –
Short Courses in Water and
Wastewater Engineering
/University of California Davis;
University of Toledo; and other
Institutions

AFFILIATIONS

American Water Works
Association (Committee Chair)

American society of Civil
Engineers

International Water Supply
Association

Mr. Safa is a registered civil engineer and a licensed contractor with 45 years of experience in resident engineering, construction inspection, construction engineering, and project management on a variety of construction projects including wastewater, water, and storm drainage facilities. These have included aeration basins, clarifiers, sludge drying beds, water storage tanks, pipelines, pump stations, large reinforced concrete dwelling units, industrial plants, and other public works projects for public agencies and private firms. His experience includes contract administration, CPM scheduling, claim dispute resolution, partnering, construction inspection, and material sampling and testing.

Experience

Construction Administration Consultant, Los Angeles Community College District, Los Angeles, CA: As an independent consultant to other firms and Engineer-of-Record provided construction administration services on a \$30 million utility infrastructure improvement project on East Los Angeles College, provided oversight during the construction phase of the project. Additionally, provided utility coordination and support services on other projects on the college with an estimated construction cost of about \$400 million. The construction of the utility project is substantially complete and the facilities are currently in beneficial use.

Construction Management and Inspection Services for Little Morongo Road, and Two-Bunch Palms Trail Trunk Sewer System, Mission Springs Water District, Desert Hot Springs, CA: Project Manager and Resident Engineer for about 26,000 linear feet of trunk sewer system. The project consisted of installation of VCP pipe up to a diameter of 36 inches with depths of up to 26 feet in busy City streets and County major arterial roads. The work required coordination with various utilities and public agencies. It also required resolution of issues in the pipe alignment to deal with many utility conflicts. Corrective actions had to be taken on a number of occasions to prevent costly change order potentials due to underground conditions.

Design and Construction Management Services for Sewer Rehabilitation Project, City of Palos Verdes Estates, CA: Project Manager for design engineering and construction inspection services for rehabilitation of approximately 8,000 linear feet of sewer pipeline in the City's sewer system. This was the first phase of the sewer rehabilitation work in the City, with additional phases being added at a later date. The work included trenchless lining as well as removal and replacement of sewer pipelines, part of which was located within easements on private property.

Sanitary Sewer Rehabilitation Project (Phase 2), City of Palos Verdes Estates, CA: Project Manager for the design of approximately 28,000 linear feet of sewer pipelines of various sizes in the City of Palos Verdes Estates. This was Phase 2 of a project started a year before using trenchless technology and removal and replacement methods, where

appropriate. A number of the sewer segments are located within easements on private property, requiring special consideration in the design process to mitigate potential change orders during construction.

Construction Management Services for Storm Drain Rehabilitation Project, City of Rancho Palos Verdes, CA: Project Manager for construction management services on corrugated metal storm drain pipes of various sizes from 24 inch diameter to 60 inch diameter. These pipes were lined using CIPP technology, except for one segment. This particular segment crossed a major arterial street (South Western Avenue), and had been in service for several decades and had been seriously damaged. Tunneling technology had to be applied for this segment.

Concrete Sewer Rehabilitation Program, South Gate, CA: As Project Manager for engineering services, provided engineering services for a three-year prioritized program for rehabilitation of the City's sewer system. This phase of the sewer rehabilitation was funded by a South Gate Water Authority \$30 million bond issue and will encompass the repair, replacement, and rehabilitation of approximately 320,000 linear feet of concrete sewer pipe. Several of the sewer segments needed to be totally replaced with a larger diameter pipe.

City of Pomona Construction Management, Inspection Services, and Geotechnical Testing for Various Sewer Main Construction Projects, CA: Project Manager for on-site construction management and inspection services for approximately 10,000 LF of 12- and 15-inch sewer pipe with an approximate project cost of \$2 million, in busy City streets in commercial and residential areas. Work included installation of tunnels under two railroad crossings.

Coachella Valley Water District (CVWD) Sewer and Water Inspection, Coachella, CA: Project Manager for inspection services on a 1 MG steel water reservoir, water distribution pipelines, and sanitary sewer lines. Inspection is conducted based on the Standard Specification for Public Works (Green Book), American Waterworks Association (AWWA) reservoir standards, CVWD standards, and the plans and specifications.

Deer Creek Wastewater Treatment Plant, El Dorado Irrigation District, El Dorado County, CA: Resident Engineer for on-site professional construction management services and inspection for the expansion of plant capacity from 2.5 MGD to 3.6 MGD. The project included construction and renovation of sewage treatment plant facilities including a grit washer, secondary clarifier, gravity sludge thickeners, sludge storage facility improvement, sludge dewatering belt press installation, installation of lime sludge stabilization equipment, metal building, 1-million-gallon steel storage tank, related pumps and equipment, instrumentation and controls, pavement and other site work, and electrical power installations. The total project cost was approximately \$8 million, including owner-furnished equipment.

Matthew McCormac, EIT

Civil Designer

EDUCATION

2017/BS/Civil
Engineering/University of
California Los Angeles

REGISTRATION

2017/Fundamentals of Engineering
(EIT)

Mr. McCormac is an aspiring Engineer-in-Training with several years of experience in design of water and wastewater infrastructures. He serves as a Civil Designer and oversees the work of CAD Designers in the preparation of construction plans. He will report directly to the Project Engineer for design progress reports and conformance to engineering standards.

Experience

Design of 80th Street Area Main Replacement, Golden State Water Company, County of Los Angeles, CA: Provided CAD support services for preparation of the construction plans for 7,000 lineal feet of water main replacement in the County of Los Angeles. The work included replacing existing 4-inch through 12-inch cast iron mains with 8-inch and 12-inch C-900 PVC water main on several residential streets and arterial streets such as Firestone Boulevard. The project also included replacing fire hydrants, reconstruction and reconnection of existing service laterals, transferring services from alleys to the frontage streets, constructing fire hydrant assemblies, and air-release valve assemblies.

Design of Commercial Avenue Area Main Replacement, Golden State Water Company, Calipatria, CA: Provided CAD support services for preparation of the construction plans for 650 lineal feet of water main replacement in the City of Calipatria. The work included replacing existing 4-inch mains with 8-inch C-900 PVC water main on Brown Avenue, alley south of Freeman Street, and on Commercial Avenue.

Ardath Area Water Main Replacement, Golden State Water Company, Gardena, CA: Provided CAD support services for preparation of the construction plans. This project was a fast-track design-build contract for Golden State Water Company for 7,500 lineal feet of water main replacement in the City of Gardena. The work included replacing existing 4-inch through 12-inch cast iron mains with 8-inch and 12-inch C-900 PVC water main on Manhattan Beach Boulevard, Redondo Beach Boulevard, and miscellaneous residential areas. The project also included replacing fire hydrants, reconstruction and reconnection of existing service laterals, constructing blow-off assemblies, and air-release valve assemblies.

Dove Canyon and Robinson Ranch Recycled Water Pump Station – Phase 1, Trabuco Canyon Water District, Trabuco Canyon, CA: Assisted in the preparation of a Preliminary Design Technical Memorandum for replacing two existing irrigation pump stations which served Trabuco Canyon Water District recycled water customers. The report provided recommendations for improvements, site alternatives with analysis, hydraulic calculations, and operating conditions.

Project 92 and 93 Sewer Replacement, Garden Grove Sanitary District, Garden Grove, CA: Provided CAD support for two sewer replacement projects for the Garden Grove Sanitary District.

- ▶ Project 92 replaced 1,478 lineal feet of 8-inch VCP sewer with 12-inch VCP sewer. The proposed sewer replacement began at the intersection of Donegal Drive and Madison Circle, and

continued through the residential streets to Bushard Street. From Bushard Street, the alignment proceeded south to the Bolsa Avenue intersection.

- ▶ Project 93 replaced 620 lineal feet of 12-inch VCP sewer with 15-inch VCP sewer. The proposed sewer replacement started at the intersection of Anita Place and Westminster Avenue, and continued west along north side of Westminster Avenue, up to the Euclid Street.

CM and Inspection Services for South Long Beach Sewer Improvement Project, Long Beach Water Department, CA: Prepared the As-Built drawings for the South Long Beach Sewer Improvement Project. The project includes removal and replacement of 200 lf of 8-inch sewer, CIPP lining of 17,200 lf of 8-inch through 12-inch sewers, spot repairs, manhole rehabilitation, and miscellaneous improvements including top-hats, chemical grouting, etc.

Subdrain at Syphon Reservoir Southerly Property Line, Irvine Ranch Water District, Irvine, CA (2017): Provided CAD support services for preparation of the construction plans. This project constructed a temporary 6-inch perforated sub-drain to prevent groundwater from percolation into an adjacent baseball field. The subdrain was constructed near the southerly property line and discharged into an existing storm drain junction structure.

Fire Line for 850 Long Beach Boulevard, IS Fire Pro, Long Beach, CA: Provided CAD support services for preparation of the construction plans. This project was for a new 4-inch fire line and riser of an existing building. The project required hot-tapping an existing 12-inch water main and constructing an above ground backflow prevention assembly adjacent to the existing building.

Grading Plan for 944 South Nutwood Avenue, Living Stream Ministry, Anaheim, CA: Provided CAD support services for preparation of the construction plans. This project was for precise grading of new parking lot for the Living Stream Ministry church. The new parking lot served as an extension of the existing parking facility.

GWTP Chemical Tank Replacement Project Phase IV, Long Beach Water Department, Long Beach, CA: Provided CAD support services for preparation of the construction plans. Phase IV was replacement of one hydrofluorosilicic acid tank and two aluminum sulfate tanks. The existing tanks were polyethylene tanks and the replacement tanks were fiberglass reinforced plastic tanks.

Katelyn Nguyen

Utilities / Permits

EDUCATION

2002/BS/Child
Development/California State
University, Long Beach

Ms. Nguyen primarily functions as a specialty support staff for design of water and wastewater infrastructures. Her main area of expertise is with utility research, permit acquisitions, and public relations. She is responsible for communicating with public agencies for utility record drawings, receiving and organizing correspondence and maps, and follow-up services. She is very knowledgeable on permit acquisitions with emphasis on cities, fire departments, special districts and Caltrans.

Ms. Nguyen also serves as an expert with public relations. She conducted records audits and statistical research to develop comprehensive strategies. She has worked in different capacities for private companies and public agencies, all dealing with and presenting to the public. Her role in the engineering profession is providing support for community meetings, public awareness, and consent agreements. Prior to her role in engineering, she worked in academia for international students developing marketing publications and communications in various modalities, financial review, and faculty services.

Experience

Design of 80th Street Area Main Replacement, Golden State Water Company, County of Los Angeles, CA: Provided support services for utility research and permitting. Responsibilities included coordination with utility companies, sending out record drawing requests, receiving and organizing correspondence and maps, and follow up for missing information. Worked with County of Los Angeles staff for acquisition of available record drawings. The work included replacing existing 4-inch through 12-inch cast iron mains with 8-inch and 12-inch C-900 PVC water main on several residential streets and arterial streets such as Firestone Boulevard.

Design of Commercial Avenue Area Main Replacement, Golden State Water Company, Calipatria, CA: Provided support services for utility research and permitting. Responsibilities included coordination with utility companies, sending out record drawing requests, receiving and organizing correspondence and maps, and follow up for missing information. Worked with the City of Calipatria staff for acquisition of available record drawings. The work included replacing existing 4-inch mains with 8-inch C-900 PVC water main on Brown Avenue, alley south of Freeman Street, and on Commercial Avenue.

Ardath Area Water Main Replacement, Golden State Water Company, Gardena, CA: Provided support services for utility research and permitting. Responsibilities included coordination with utility companies, sending out record drawing requests, receiving and organizing correspondence and maps, and follow up for missing information. Met with City of Gardena public works staff for preparation of submittal package and acquisition of encroachment permits. Met with Los Angeles County Fire Marshall for approval of fire hydrant locations. Coordinated with Metropolitan Water District for approval of proposed construction adjacent to and parallel to their existing 45-inch transmission main.

District 2 Water Main Replacement, City of Pomona, CA: Provided support services for the relocation of existing water meters from the back alleys to the frontage area on 30 properties in the City of Pomona. Communicated with and met with residences to administer the proposed work in private property including preparation of Consent of Entry Agreements, educating the owners on the proposed work, acquiring signatures, scheduling the work, and answering questions via telephone or other forms of communication.

Project 92 and 93 Sewer Replacement, Garden Grove Sanitary District, Garden Grove, CA: Performed utility research and permitting services for two sewer replacement projects for the Garden Grove Sanitary District.

- ▶ Project 92 replaced 1,478 lineal feet of 8-inch VCP sewer with 12-inch VCP sewer. The proposed sewer replacement began at the intersection of Donegal Drive and Madison Circle, and continued through the residential streets to Bushard Street. From Bushard Street, the alignment proceeded south to the Bolsa Avenue intersection.
- ▶ Project 93 replaced 620 lineal feet of 12-inch VCP sewer with 15-inch VCP sewer. The proposed sewer replacement started at the intersection of Anita Place and Westminster Avenue, and continued west along north side of Westminster Avenue, up to the Euclid Street.

CM and Inspection Services for Third and Forest Sewer Pipeline, City of Laguna Beach, CA: Provided support services to the Construction Manager for public relations and communication for this high-profile project for the City of Laguna Beach. Located near city hall and the downtown area, construction required extensive public relations and communication to minimize disturbance to the public, downtown businesses, employees, and school district. Assisted Construction Manager in preparation for face-to-face meetings with businesses and residents; presentation to City Council; coordination with police and fire departments; PTA meetings with Laguna Beach Unified School District; consent of entry agreements with three private residences; posting half-page advertisements in local paper; and development of project website and hotline.

Hernan Montoya, SE, PE

Arcon Structural Engineers, Inc. – Structural

REGISTRATION

CA/Professional
Engineer/Structural/#S002819

CA/Professional
Engineer/Civil/#36919

EDUCATION

1983/MS/Civil
Engineering/California State
University, Long Beach

1977/BS/Civil
Engineering/Universidad Del
Valle, Cali, Columbia

Mr. Montoya has over 39 years of experience as a structural engineer designing civil and public works projects, and a wide variety of commercial, residential, industrial buildings, including hotels, restaurants, apartment complexes, senior housing, warehouses, office complexes, schools, mining plant equipment supports and structures, bridges, etc. He has worked in a wide variety of structural projects in charge of engineering, quality assurance, coordination with clients, other consultants and building officials, and field support. Professional experience also includes repair and retrofitting of existing building and bridge structures.

Experience

Planning Area 1, Zone 1A, Pressure Reducing Stations for Domestic and Recycled Water, Santa Margarita Water District, San Juan Capistrano, CA: Structural Engineer for the structural and architectural design of three above ground concrete block and masonry buildings in accordance with Rancho Mission Viejo Design Guidelines for Ancillary Buildings.

Shaw Cove Lift Station Rehabilitation and Facility Upgrades, Santa Margarita Water District, Laguna, CA: Structural Engineer for the structural design of the underground dry well and wet well expansion, and above grade reconstruction of this existing facility.

Talega Zone II Domestic Water Pump Station, Santa Margarita Water District, San Clemente, CA: Structural Engineer for the structural design of a 2,250 square foot above ground concrete block and steel framed roof pumping station building.

Pico Lift Station, Santa Margarita Water District, San Clemente, CA: Structural Engineer for the structural design of a concrete block and steel framed roof pump station building and miscellaneous facilities consisting of above ground generator and control rooms, and underground pump room, wet well and emergency storage well.

Canyon Hills Sewage Lift Station, Elsinore Valley Municipal Water District, Lake Elsinore, CA: Structural Engineer for the structural and architectural design of an above ground concrete block and masonry building for the lift station.

Valley Drive Sewer Lift Station, City of Brisbane, CA: Structural Engineer for the structural design of an above ground concrete block and steel framed motor control center building and underground facility.

Tesoro Water Pump Station, Santa Margarita Water District, Las Flores, CA: Structural Engineer for the structural design of a 2,800 square foot above ground concrete block and steel framed roof pumping station building.

Horno Lift Station, Santa Margarita Water District, Ladera Ranch, CA: Structural Engineer for the structural design of an above ground concrete block and steel framed roof pumping station building and underground facility consisting of above ground generator and control rooms, and underground pump room, wet well and two emergency storage wells.

Avenue I Undercrossing, Lancaster, CA: Project Manager/Project Engineer for the structural design of this cast-in-place, prestressed concrete box girder freeway off-ramp to be constructed over Avenue I. The Project included tie-back and pile supported retaining walls for the widening of Avenue I under the existing freeway under crossing and the new off-ramp.

Nason Street Bridge/ Channel "F", Moreno Valley, CA: Project Manager/Project Engineer for this developer built vehicle bridge over a new concrete lined channel constructed for the Aquabella Development, to be owned and maintained by the City of Moreno Valley.

"C" Street Bridge/ Channel "F", Moreno Valley, CA: Project Manager/Project Engineer for this developer built private vehicle bridge over a new concrete lined channel for the Aquabella Development in the City of Moreno Valley.

California Oaks Road UC Widening, City of Murrieta, CA: Served as QA/QC engineer for the widening of this is cast-in-place, prestressed concrete box girder freeway overpass over California Oaks Road.

Ramona Expressway OC Widening, City of Perris, CA: Served as independent check engineer for the widening of this is cast-in-place, prestressed concrete box girder widening along each side of Ramona Expressway over Route 215.

Euclid Street Bridge Widening/ Carbon Creek Channel, City of Anaheim, CA: Project Manager/Project Engineer for this single span precast concrete plank bridge over an OCEMA channel.

Cavalry Chapel of Costa Mesa Bridge, City of Costa Mesa, CA: Project Manager/Project Engineer for this Orange County privately own vehicle bridge over the O.C.E.M.A. own Greenville/Banning Channel.

Santiago Creek Bike Trail, Hewes St. Segment, City of Orange, CA: Served as prime consultant for the channel overcrossing and service road bridge of the bike trail segment along Hewes St.

Santiago Creek Bike Trail North, Chapman Ave, UC, City of Orange, CA: Served as structural consultant for the structural design of the tie-back walls along the north segment of the bike trail.

Benning Road Transfer Station Modifications, Washington, DC: Served as structural consultant for the expansion of 10,000 Sq. Ft. cast-in-place concrete tipping floor and metal roof over it, design of the above grade packer truck drive-over ramp and the structural rehabilitation of the existing tipping floor entry and egress access bridges.

Fort Totten Refuse Transfer Station Modifications, Washington, DC: Served as structural consultant for the expansion of this 14,500 Sq. Ft. cast-in-place concrete tipping floor and metal roof over it, design of the above grade packer truck drive-over ramp (on fill) and service underpasses.

Frederick County Refuse Transfer Station, Frederick County, MD: Served as structural consultant for the design of this 46,125 Sq. Ft. pre-manufactured metal building and cast-in-place concrete tipping floor, with an underground packer truck drive-over, and employee facilities building.

Jacob Sharp, PLS

D. Woolley and Associates, Inc. – Land Survey

REGISTRATION

CA/Professional Land
Surveyor/#8947

EDUCATION

2008/Coursework/Land Surveying
and Project Management/Rancho
Santiago Canyon College

2002/Coursework/AutoCAD and
Journalism/Saddleback College

PROFESSIONAL AFFILIATIONS

California Land Surveyors
Association, Orange County
Chapter

Mr. Sharp has more than 18 years of experience specializing in boundary analysis, ALTA surveys, survey research, legal descriptions, topographic mapping, and Records of Survey in Los Angeles and Orange counties. His expertise in surveying ranges from cost estimates and field surveying to preparation of deliverables. He is also familiar with control surveys for boundary and design survey projects.

Mr. Sharp manages field survey crews through scheduling and survey calculations, as well as office support. Recently, he provided ALTA surveys for the Port of Long Beach in conjunction with the purchase of the World Trade Center properties. Mr. Sharp's software skills include Civil 3D, MicroStation/InRoads, and StarNet, as well as Microsoft Office and Revit BIM software.

Experience

Project 92 and 93 Sewer Replacement, Garden Grove Sanitary District, Garden Grove, CA: Surveyor for two sewer replacement projects for the Garden Grove Sanitary District.

- ▶ Project 92 replaced 1,478 lineal feet of 8-inch VCP sewer with 12-inch VCP sewer. The proposed sewer replacement began at the intersection of Donegal Drive and Madison Circle, and continued through the residential streets to Bushard Avenue. From Bushard Avenue, the alignment proceeded south to the Bolsa Avenue intersection.
- ▶ Project 93 replaced 620 lineal feet of 12-inch VCP sewer with 15-inch VCP sewer. The proposed sewer replacement started at the intersection of Anita Place and Westminster Avenue, and continued west along north side of Westminster Avenue, up to the Euclid Street.

Anaheim Boulevard/Ball Road Intersection Widening, City of Anaheim, CA: Office Surveyor for widening of Anaheim Boulevard and Ball Road intersection, providing civil engineering, survey, traffic, landscape and irrigation, and environmental services. Anaheim Boulevard will be widened along the east curb, north and south legs of the intersection, to provide for additional through and left turn lanes, bike lanes, and raised medians.

Cove Area Sewer Replacement Project, Cathedral City, CA: Office Surveyor for converting 1,500 residential and commercial properties from septic system to gravity sewer system. Project included design and construction support services for 15 miles of new 8-inch and 10-inch gravity sewer mains, 1,500 new sewer lateral connections, abandonment of existing septic systems, community coordination, coordination with concurrent road improvements, storm drain installations and water main replacements.

15th Street and Cherry Avenue Sewer Replacement, Long Beach Water Department, Long Beach, CA: Office Surveyor for preparation of construction plans and specifications for upsizing 600 LF of 8-inch sewer in 15th Street from Cherry Avenue to Dawson Avenue. The project

included removing the 8-inch sewer and replacing with 12-inch sewer with replacement manholes and reconnecting existing sewer laterals. Construction plans included relocation of a manhole and a sewer segment on Dawson Avenue to keep the alignment away from an existing 66-inch RCP storm drain owned by Los Angeles County Flood Control District.

Esencia (Planning Area 2) Lift Station, Santa Margarita Water District, Rancho Santa Margarita, CA: Office Surveyor for Rancho Mission Viejo Esencia (Planning Area 2) Lift Station. The Esencia Lift Station included submersible pumps in a wet well, control and isolation valve vault, flow metering, emergency storage structure, and emergency generator. The lift station design incorporated interim and ultimate conditions. Interim conditions included PA-2 and PA-3 sewage flows. Ultimate conditions only accounted for PA-2 flows.

Soto Street at Interstate 10, City of Los Angeles, CA: Office Surveyor responsible for quality control and oversight for project documentation and construction drawings to implement the widening of the I-10 westbound off-ramp at Soto Street in Los Angeles. The purpose of the project is to add a right-turn lane and to modify the intersection with Soto Street. The project required the redesign of the existing off-ramp to accommodate a concrete approach slab, new drainage facilities, and new signal equipment.

LAX International Baggage Terminal Improvements, Los Angeles World Airports, Los Angeles, CA: As Survey Technician, assisted in survey control and 3D laser scanning for various refinery documentation projects nationwide, as well as Los Angeles International Airport baggage terminal improvement project.

Airport Layout Plan, City of Long Beach, CA: Project Manager and Chief of Parties for Record of Survey of the Long Beach Airport, Daugherty Field boundary survey. Tasks included survey record and title research, survey planning, record calculations for monument recovery, custom survey point numbering scheme, survey crew instruction and scheduling, survey document management, conducting meetings at the City of Long Beach, boundary resolution and Record of Survey drafting.

Topographic and Geodetic Surveys for Local Street Improvements, City of Long Beach, CA: Served as Project Manager and Chief of Parties for topographic and geodetic survey of various public streets in the City of Long Beach. Tasks included survey planning, custom survey point numbering scheme, survey crew instruction and scheduling, survey document management, conducting meetings at the City of Long Beach, boundary resolution, Record of Survey drafting, QA/QC for all topographic surveys, alignment documents, centerline ties and survey report documents. Also reviewed and approved all timesheets and invoices prior to submittal.

Michael Houlihan, AICP

Environmental Science Associates – Environmental Compliance

EDUCATION

1985/BS/City and Regional
Planning/California Polytechnic
University, San Luis Obispo

AFFILIATIONS

American Institute of Certified
Planners

American Planning Association

Association of Environmental
Professionals

Mr. Houlihan is a highly experienced environmental services team leader who is able to stimulate teamwork, camaraderie, and productivity. With over 30 years of industry experience in directing, managing, and preparing environmental documentation within Southern California, he has lead numerous project teams through the successful completion of environmental processes; many being high-profile projects. These projects included water/wastewater infrastructure, planned communities, community land use planning, residential/commercial developments, parks/schools, transportation/circulation improvements, and energy facilities. His expertise is in providing high quality documents by resolving issues as they arise and through proactive and responsive communication.

Experience

City of Huntington Beach, Sewer Lift Station “D” and Pipeline Project MND, Huntington Beach, CA: Project Manager for the preparation of a MND for the installation of a replacement sewer lift station “D” and the extension of 4,600 linear feet of sewer line along Warner Avenue. The project required a grading permit from the City as well as a coastal development permit from the California Coastal Commission. The primary issues associated with the project included biological resources, air quality, noise, hazardous materials, and hydrology/water quality.

Los Alisos Water District, Zone C Non-Potable Water Pump Station and Pipeline MND, Lake Forest, CA: Project Manager for the preparation of an MND, biological and paleontological mitigation monitoring, conceptual mitigation plan, and federal and state regulatory permits and agreement for the Los Alisos Water District's Zone C Reservoir and Pipeline Project located in Southern Orange County, in an area known as part of the Whiting Ranch Regional Park in the City of Lake Forest. The project included the placement of a 16” reclaimed water pipeline from LAWD’s existing Reclaimed Zone B East Reservoir to Portola Parkway and the installation of a larger pump station at the location of the existing irrigation pump station.

City of Anaheim, Linda Vista Reservoir and Pump Station Replacement Project Technical Studies, Anaheim, CA: Project Manager for the preparation of technical reports for the Linda Vista Reservoir and Pump Station Replacement Project located at Tustin Avenue, north of Miraloma Avenue in the City of Anaheim. The proposed project includes the construction of an approximately 38-foot high, 4 million gallon reservoir and pump station, and demolish the existing 4 million gallon reservoir and pump station located on the site. The technical studies included an air quality report, a climate change analysis, an aesthetic evaluation, and noise study.

Youssif Hussein, PE

ID Modeling – Hydraulic Models / Surge

REGISTRATION

CA/Professional Engineer/Civil

EDUCATION

1983/MS/Civil
Engineering/University of Texas,
Arlington

1982/BS/Civil
Engineering/University of Texas,
Arlington

Mr. Hussein has specialized experience in water resources and environmental engineering, primarily in hydraulic modeling for water distribution systems, wastewater, and storm water collection sewer system, and hydrology. He has specialized expertise in the development and application of hydraulic models, including the use of peripheral information systems (customer billing, GIS, and databases) to support hydraulic model development and master planning projects.

Experience

Hermosa Beach, Redondo Beach, Palos Verdes, Bear Gulch District, San Mateo, San Carlos, Selma, King City, Rancho Dominguez, Hydraulic Model Development Projects, California Water Service Company, San Jose, CA: Mr. Hussein served as a task leader to develop water distribution system hydraulic network models. As part of the analysis, Mr. Hussein developed the model networks from GIS, allocated customer demands to the models using customer billing information, and calibrated the models using hydrant tests performed by Cal Water. He verified the models, comparing operations with historical system operating data. Performed hydraulic analysis for different demand conditions and identified improvements for these systems. Developed and prioritized capital improvements to meet distribution system needs through buildout conditions.

Water Master Plan Updates, Calleguas, CA: Calleguas Municipal Water District is a wholesale provider, serving 22 agencies in Ventura County. Mr. Hussein participated in the preparation of the District's master plan update and performed a hydraulic analysis to evaluate the adequacy of the water facilities to meet current and projected demands.

Hydraulic Evaluation for Conveyance Facilities, Calleguas, CA: Mr. Hussein performed hydraulic evaluation in support of the Calleguas Municipal Water District's proposed four-million-gallon Grimes Canyon Reservoir and the proposed Aquifer Storage and Recovery project pipeline and pump station conveyance facilities.

System Reliability and Rehabilitation Study, Goleta, CA: Mr. Hussein evaluated potential emergency, failure, and drought scenarios that could affect the Goleta Water District's water distribution system, and identified the level of service based on the comparison of the available supply to the total demands. He performed a hydraulic analysis to identify facility improvement requirements and their associated costs.

Water Distribution Model, Benicia, CA: Mr. Hussein updated the City of Benicia, California's, existing water distribution model to include recent projects and configuration and performed hydraulic analysis with extended period simulation using H2ONET model to evaluate potential reservoir sites to replace an existing old reservoir. He evaluated several alternatives and assessed their impact on the existing system, identified advantages and disadvantages of each alternative, and recommended the best alternative to optimize system operation.

Modeling for Water Master Plan, Benicia, CA: Mr. Hussein conducted modeling tasks for the water master plan for the City of Benicia. Mr. Hussein collected pipe data, digitized water mains, land use subareas, and zoning data, and wrote a computer program to update and maintain a comprehensive database of the entire city water system. He also assisted in developing water demand projections, allocating demands to model nodes for existing and future land use conditions, and performed hydraulic analysis of the water system for existing and future conditions using the Kentucky Model.

Modeling for the Claremont Tunnel Outage Study, CA: Mr. Hussein performed modeling runs to evaluate operation of the East Bay Municipal Utility District's West of Hills system with the Claremont Tunnel out of service. The tunnel is a key facility that links Orinda WTP with the West of Hills service area. The analysis evaluated re-operation of the system to maintain customer service in the West of Hills area with the tunnel out of service.

Ayers Reservoir Hydraulic Model Review, Concord, CA: Mr. Hussein reviewed the Contra Costa Water District's hydraulic model to confirm that the Ayers Reservoir is appropriately sized based on the Master Plan Criteria. He evaluated identified site locations for hydraulic differences and potential sites that could provide more hydraulic benefits to the water system.

Model Review for the Elderwood Pump Station Rehabilitation, Concord, CA: Mr. Hussein updated and reviewed the Contra Costa Water District's H2ONET model to reflect facility improvements since the completion of the Master Plan. He performed model runs for critical operational scenarios including fire flow analysis and extend period simulation.

Hydraulic Model Review for the Bailey and Pine Hollow Pumping Facilities, Concord, CA: Mr. Hussein reviewed the Contra Costa Water District's hydraulic model to check the basic data for Zones 31 and 41. He performed hydraulic analysis to evaluate the capacity of the Bailey and Pine Hollow pumping facilities to meet existing and future demands using extended period simulation for maximum day conditions. He plotted and compared pump curves to system curves using model results for different demand conditions.

Hydraulic Analysis for the San Ramon Valley Water Services Facilities Master Plan, CA: Mr. Hussein was project engineer for the San Ramon Valley Water Service facilities master plan for East Bay Municipal Utility District. His work included performing hydraulic analysis using CDM Smith's Water System Planner and KYPIPE and EPANET to evaluate the system graphically, running alternative scenarios and producing graphical reports and thematic maps of model results.

Hydraulic Modeling for Water Distribution System Master Plan, Rio Linda/Elverta, CA: Mr. Hussein developed a hydraulic model to evaluate the existing Rio Linda/Elverta Community Water District water system under different demand conditions. He used GIS to develop junctions demand from land use coverages and aerial photography. Mr. Hussein performed hydraulic analysis for several demand scenarios and identified existing system deficiencies and future capacity requirements.

Jennifer Wood

ID Modeling – Hydraulic Models / Surge

EDUCATION

2006/BS/Civil
Engineering/University of
Tennessee at Martin

Ms. Wood has been a Civil engineer for 8+ years with experience in hydraulic modeling and utility operations. She has managed and led a team of 16 employees in jobs relating to GIS, water quality, telemetry, utility operations, utility line location, utility valve and fire hydrant asset management, and utility water line projects. Ms. Wood has extensive experience using InfoWater, H2OMap Water, ESRI ArcGIS.

Experience

City of Santa Ana Water System Master Plan, CA: Served as Project Engineer for preparation of the Master Plan. The City of Santa Ana water system is relatively flat, with limited gravity storage, creating a highly sensitive hydraulic condition conducive to conflicts with pump stations, which leads to inefficient pump operation, which includes excessive wear and energy costs. Supply is a blend of groundwater with imported water from Metropolitan Water District of Southern California. IDM is applying the potable water system model to support the City's Water Master Plan to identify CIP utilizing traditional hydraulic model and engineering methods, in addition to deploying a Decision Support Tool (DST) to analyze condition and performance deficiencies from across multiple systems, including work order management, hydraulics, street paving, and more, to automate the identification and prioritization of pipeline replacement projects. As part of this ongoing project, population projection data from the City was compiled and evaluated in order to develop near-term and buildout demands for the Master Plan.

City of Pomona Bonelli Park Hydraulic Model Consulting Services, CA: Served as Project Engineer. The City of Pomona (City) requested IDM to perform hydraulic modeling services for an extension of the City's recycled water system. The analysis was completed using the agency's existing H2OMap model. IDM updated the recycled water model to include an extension to the north as well as future improvements from the 2009 Recycled Water Master Plan. The project included a storage evaluation and analyses on the existing and expanded systems.

City of Victorville Water System Model Update for Use in Sedaru Software, CA: Served as Project Manager/Project Engineer. This ongoing project consists of IDM building and calibrating the potable water system model 1:1 with the City's geodatabase for use in the Sedaru software. The system consists of 8 pressure zones, 37,000 customer meters, and approximately 900 miles of pipeline. The project will include IDM creating the model, performing model connectivity checks, allocating water demands, creating model scenario queries and query sets, and calibrating the model under both steady state and 48-hour extended period simulation conditions.

Nevada Irrigation District Lake Wildwood and North Auburn Hydraulic Evaluation, CA: The Nevada Irrigation District (District) requested an evaluation of the District's system to identify operational deficiencies that could negatively impact system performance and the quality of service delivered to the District's customers and to create operationally-driven capital improvement projects (CIPs). This ongoing project will

include utilizing the District's existing hydraulic models to evaluate the Lake Wildwood and North Auburn systems under peak hour, maximum day demands plus fire flows to determine undersized pipelines or pumps that may be impacting tank fill/drain cycles, supply conveyance, and pressures.

Goleta Water District SB Corp Well Blending & Hydraulic Constriction Analysis, CA: Served as Project Engineer. IDM created model scenarios to test the addition of a proposed groundwater well and the impact of that well on water quality. The analysis consisted of a source trace analysis using the existing well and analyzing the change in the blending ratio at the District's water quality sampling sites. In addition, the model was used to determine if any constrictions within the piping network would occur with the addition of the new well. The analysis was completed using the District's InfoWater model.

Goleta Water District Well Blending Analysis, Booster Pump Station Sizing, and Recommended Pipeline Upgrades, CA: Served as Project Engineer. IDM created model scenarios to test proposed facility improvements to supply the system completely from groundwater supplies as the availability of surface water supplies is limited due to the current drought in California. The analysis is being completed using the agency's InfoWater model. The project consists of conducting a trace analysis on the existing system groundwater wells, simulating proposed pump station improvements, and simulating proposed groundwater recharge operations. The trace analysis used the existing facilities and the Districts water quality sampling locations to determine the percent of water from each source at each sample location. The proposed pump station improvements assume that the water treatment plant is completely offline and the entire system is service from the groundwater wells. To serve the system from groundwater supplies, multiple booster stations must be upsized to serve the upper zones which are normally served by water treatment plant. The final scenarios consist of utilizing low demand conditions and the water treatment plant to recharge ground water supplies using previously identified injection wells.

Consolidated Utility District Model Construction and Calibration, TN: Consolidated Utility District of Rutherford County (CUD) serves Rutherford County, TN outside the 3 municipality areas and receives all potable water from its WTP. The system consists of 17 pressure zones and 54,000 customer meters. The goals of this project were to construct a hydraulic model from CUD's existing GIS data and calibrate the model using hydrant testing data and available SCADA data.

Consolidated Utility District Morton Ln. Facility Improvement Determination, TN: Served as Project Manager/Project Engineer. Consolidated Utility District (CUD) requested IDM to perform hydraulic analyses to determine what pipeline improvements were necessary to accommodate additional demand from a proposed development and meet the fire flow requirement within CUD's existing system. Analysis was completed using the agency's InfoWater model. During the course of the project IDM updated the model, assigned water-use demands, and created existing and proposed design scenarios to test the added demand under maximum day conditions. In addition, a fire flow scenario was completed.

Larry Mullen, EE

Mullen & Associates, Inc. – Electrical / I&C

REGISTRATION

CA/Professional Electrical Engineer/#E8279

Registered in Arizona, Nevada, Utah, Florida, Indiana and Colorado

CA/Control System Engineer

EDUCATION

1966/BS/Electrical Engineering/California Polytechnic University

PROFESSIONAL AFFILIATIONS

Association of Consulting Electrical Engineers

Illuminating Engineering Society

Instrument Society of America

Electrical Generating Systems Association

Orange County Water Association

Mr. Mullen is a registered Electrical Engineer in seven states and has over 30 years of experience in electrical and control system engineering. Project have included institutional, governmental and public buildings. Specialized efforts include medium voltage distribution, stand-by generation, digital communications, CCTV and fire protection.

Experience

Sun Valley Park Watershed Project: Designed a telemetry system and water quality monitoring system. The project included the design of a stand-alone PC based SCADA system, generation of P&ID diagram of process, inflow and outflow sensing, east and west collector valve control, heavy metal sensing, and post treatment.

El Monte Operable Unit: Electrical, control and monitoring design for groundwater extraction and treatment of contaminated water.

Tejon Ranch Sewage Treatment Plant: Electrical, control and monitoring design.

Chino Basin Regional Plant #1: Electrical, control and monitoring design for sludge heating improvements, chlorinator modifications, and tertiary filters.

City of Laguna Beach: Sewer Lift System Telemetry using digital telemetry over multidrop telephone lines via RTU at each site to a central personal computer with data logging and alarm generation.

Parcel 5 Sewage Lift Station, Santa Margarita Water District, Rancho Santa Margarita, CA: Two (2) 11 hp pump with solid state starter operation. PLC controlled process with SCADA and 60 kw diesel generator.

Green Beach Lift Station, Camp Pendleton, CA: Two (2) 5 hp pump with solid state starter operation. PLC controlled process.

Midway City Sewage Lift Stations, Midway City Sanitary District, CA: Four (4) new sewer lift stations to replace existing. PLC controlled process with SCADA.

Plano Sewage Lift Station, Santa Margarita Water District, Rancho Santa Margarita, CA: Four (4) 200 hp pumps with solid state starter operation. PLC controlled process with SCADA.

Braddock Lift Station, City of Culver City, CA: Three (3) 45 hp pumps with VFD operation. PLC controlled process with SCADA and 150 kw diesel generator.

Shaws Cove Sewage Lift Station, City of Laguna Beach, CA: Two (2) 15 hp pumps with solid state starter operation. PLC controlled process with SCADA. City of Laguna Beach. Designed: 2007

Felipe Sewage Lift Station, Santa Margarita Water District, Rancho Santa Margarita, CA: Two (2) 40 hp pumps with solid state starter operation. PLC controlled process with SCADA and 125 kw diesel generator.