AGENDA
IRVINE RANCH WATER DISTRICT
ENGINEERING AND OPERATIONS COMMITTEE MEETING
TUESDAY, JANUARY 20, 2026

This meeting will be held in-person at the District's headquarters located at 15600 Sand Canyon Avenue, Irvine, California. The meeting will also be broadcasted via Webex for those wanting to observe the meeting virtually.

To observe this meeting virtually, please join online using the link and information below:

Via Web: https://irwd.webex.com/irwd/j.php?MTID=m67f401f70fd8332a7ee6b183fe231488
Meeting Number (Access Code): 2492 213 2953
Meeting password: h5eSQz25Cew

PLEASE NOTE: Webex observers of the meeting will be placed into the Webex lobby when the Board enters closed session. Participants who remain in the "lobby" will automatically be returned to the open session of the Board once the closed session has concluded. Observers joining the meeting while the Board is in closed session will receive a notice that the meeting has been locked. They will be able to observe the meeting once the closed session has concluded.

CALL TO ORDER 1:30 p.m.

ATTENDANCE Committee Chair: Doug Reinhart _____
Committee Member: John Withers _____

ALSO PRESENT

Paul Cook	___	Kevin Burton	___	Wendy Chambers	___
Neveen Adly	___	Paul Weghorst	___	Steve Choi	___
Jim Colston	___	Jason Manning	___	Jose Zepeda	___
Eric Akiyoshi	___	Belisario Rios	___	Jacob Moeder	___
Brian Waite	___	Lori Rigby	___	Scott Giatpaiboon	___
_____	___	_____	___	_____	___
_____	___	_____	___	_____	___
_____	___	_____	___	_____	___
_____	___	_____	___	_____	___
_____	___	_____	___	_____	___

PUBLIC COMMENT NOTICE

If you wish to address the Committee orally on any item, you may attend the meeting in person and submit a "speaker slip" to the Committee Chair. Forms are provided at the front of the Committee Room. Public comments are limited to three minutes per speaker on each subject. If you wish to submit written comments to the Committee, please submit your public comment in advance of the meeting by emailing comments@irwd.com before 12:00 p.m. on Tuesday, January 20, 2026, and your remarks will be added to the record at the meeting.

COMMUNICATIONS

1. Notes: Burton
2. Public Comments
3. Determine the need to discuss and/or take action on item(s) introduced that came to the attention of the District subsequent to the agenda being posted and determine which items may be approved without discussion.

ACTION

4. SAND CANYON DAM SEEPAGE IMPROVEMENTS BUDGET ADDITION – SANCHEZ / MOEDER / BURTON

   Recommendation: That the Board authorizes a budget addition of $720,000 for engineering design and construction of the Sand Canyon Dam Seepage Improvements, Project 13232.

5. SAN JOAQUIN HILLS ROAD RECYCLED WATER PIPELINE REPLACEMENT CONSULTANT SELECTION – BOTELLO / RIO / BURTON

   Recommendation: That the Board authorize the General Manager to execute a Professional Services Agreement with MKN in the amount of $349,552 for engineering design services for the San Joaquin Hills Road Recycled Water Pipeline Replacement, Project 13113.

6. COASTAL ZONES B & D AND COASTAL ZONE OC-63 TO ZONE 4 PUMP STATIONS BUDGET INCREASE, BUDGET ADDITION AND CONSULTANT SELECTION – ALVAREZ / WAITE / BURTON

   Recommendation: That the Board authorize a budget increase to the Fiscal Year 2025-26 Capital Budget for Project 11568 in the amount of $4,556,000, from $2,237,000 to $6,793,000; authorize the addition of Project 13506 to the Fiscal Year 2025-26 Capital Budget in the amount of $3,613,000; and authorize the General Manager to execute a Professional Services Agreement with Carollo Engineers, Inc. in the amount of $980,381 for engineering design services for the Coastal Zones B & D and Coastal Zone OC-63 to Zone 4 Pump Stations, Projects 11568 and 13506.

OTHER BUSINESS

7. Directors' Comments

8. Adjournment

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Availability of agenda materials: Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the above-named Committee in connection with a matter subject to discussion or consideration at an open meeting of the Committee are available for public inspection in the District's office, 15600 Sand Canyon Avenue, Irvine, California ("District Office"). If such writings are distributed to members of the Committee less than 72 hours prior to the meeting, they will be available from the District Secretary of the District Office at the same time as they are distributed to Committee Members, except that if such writings are distributed one hour prior to, or during, the meeting, they will be available electronically via the Webex meeting noted. Upon request, the District will provide for written agenda materials in appropriate alternative formats, and reasonable disability-related modification or accommodation to enable individuals with disabilities to participate in and provide comments at public meetings. Please submit a request, including your name, phone number and/or email address, and a description of the modification, accommodation, or alternative format requested at least two days before the meeting. Requests should be emailed to comments@irwd.com. Requests made by mail must be received at least two days before the meeting. Requests will be granted whenever possible and resolved in favor of accessibility.

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January 20, 2026
Prepared by: T. Sanchez / J. Moeder
Submitted by: K. Burton
Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

SAND CANYON DAM SEEPAGE IMPROVEMENTS BUDGET ADDITION

SUMMARY:

In February 2024, IRWD staff discovered seepage at the left abutment of the Sand Canyon Dam along the golf cart path. Staff and IRWD's dam surveillance consultant GEI Consultants, Inc. evaluated the seepage condition and reviewed the issue with the Division of Safety of Dams (DSOD). DSOD directed IRWD to implement measures to monitor and further control the seepage. GEI is designing improvements to further control and monitor the seepage at this location. Staff recommends that the Board authorize a budget addition of $720,000 for engineering design and construction of the Sand Canyon Dam Seepage Improvements.

BACKGROUND:

Sand Canyon Dam is a 59-foot-high earth embankment dam built in 1943 by the Irvine Company and acquired by IRWD in 1967. Shortly after construction of the dam, seepage at the left abutment was discovered and a subdrain system was installed to manage the seepage. In 1998, a sink hole developed along the left subdrain, after which the damaged subdrain pipe was repaired.

In February 2024, staff discovered seepage at the left abutment of the dam along the golf cart path that leads to Hole 10 of the Strawberry Farm Golf Club. Shortly after discovering the seepage, staff, GEI, and DSOD visited the site to examine the condition. A project location map is provided as Exhibit "A". DSOD directed IRWD to implement measures to manage and measure the observed seepage. IRWD video inspected the existing left subdrain pipe and identified heavy congestion of roots. Since the roots could be impacting the seepage in the area, IRWD crews attempted hydro jetting the pipe to clear it, which was unsuccessful.

In May 2025, IRWD awarded a $89,520 design contract to GEI to provide engineering design services for the Sand Canyon Dam Seepage Improvements. The improvements include a new perforated subdrain pipe and collection point for flow monitoring. GEI is scheduled to submit the final design in March and construction award is anticipated in May.

FISCAL IMPACTS:

The Sand Canyon Dam Seepage Improvements, Project 13232, is not included in the FY 2025-26 Capital Budget and staff is requesting a budget addition. A budget addition in the amount of $720,000 is required to fund the engineering design and construction as shown in the table below.

Project No.	Current Budget	Addition <Reduction>	Total Budget
13232	$0	$720,000	$720,000

ENVIRONMENTAL COMPLIANCE:

This project is subject to the California Environmental Quality Act (CEQA). In conformance with the California Code of Regulations Title 14, Chapter 3, Section 15004, the appropriate environmental document will be prepared when "meaningful information" becomes available.

RECOMMENDATION:

That the Board authorizes a budget addition of $720,000 for engineering design and construction of the Sand Canyon Dam Seepage Improvements, Project 13232.

LIST OF EXHIBITS:

Exhibit “A” – Project Location Map

Strawberry Farms Golf Club

Exhibit "A"

Sand Canyon Wash

Matthews Rd

Location of Existing
Weirbox and Proposed
Seepage Improvements

Sand Canyon Wash

Matthews Rd

Sand Canyon Reservoir

0 50 100 200 Feet

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January 20, 2026
Prepared by: B. Botello / B. Rios
Submitted by: K. Burton
Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITEE

SAN JOAQUIN HILLS ROAD RECYCLED WATER PIPELINE REPLACEMENT
CONSULTANT SELECTION

SUMMARY:

The San Joaquin Hills Road Recycled Water Pipeline Replacement project will replace approximately 4,900 feet of ductile iron pipe (DIP) used in the recycled water system in the Newport Ridge development in the city of Newport Beach. IRWD has experienced several corrosion-related leaks on the pipeline and has determined that the pipeline needs to be replaced. Staff solicited proposals from four consultants for the design of the pipeline replacement. Staff recommends that the Board authorize the General Manager to execute a Professional Services Agreement with MKN in the amount of $349,552 for engineering design services for the San Joaquin Hills Road Recycled Water Pipeline Replacement project.

BACKGROUND:

The pipe segments to be replaced are 10- and 12-inch DIP in San Joaquin Hills Road and were constructed in the Newport Ridge community in 1990. A project location map is provided as Exhibit "A". IRWD has experienced several leaks on these segments of pipelines, and the breaks have been attributed primarily to corrosion of the DIP, which may have accelerated while the cathodic protection (CP) system was offline. An impressed current CP system was installed in 2009 for the pipeline and the parallel DIP domestic water main as part of a CP upgrade project for several pipelines in the Newport Coast Area. According to the *IRWD 2022 Annual Cathodic Protection Report,* the CP system for the recycled water pipeline was non-operational between 2018 to 2024 due to AC power issues. AC power was restored in 2024, at which point the CP system was then brought back online. The *2025 IRWD Cathodic Protection Monitoring Report* does not indicate major deficiencies with the CP system, but the system will be evaluated as part of the pipeline replacement. This project will increase the existing 10-inch DIP segment of pipe to 12-inch to allow for possible future expansion of recycled water use in the area and will also replace all existing services connected to the DIP main being replaced.

Consultant Selection Process:

On November 5, 2025, staff issued a Request for Proposal for engineering design services to four consultants: BKF Engineers, JIG Consultants, Lee+Ro, and MKN. On December 17, staff received proposals from all four consultants.

While all four proposals met the project objectives and presented qualified teams, MKN's scope understanding, approach, and experience presented greater overall value. MKN's proposal explained the importance of establishing early coordination with the City of Newport Beach (City) to confirm paving requirements, trenching backfill options, steel plate limitation, pavement fabric considerations, working hours, and traffic control requirements. MKN already

has bi-weekly meetings with the City's Engineering staff for a City project, which will be important for facilitating coordination with IRWD's project. MKN's proposal also offered input on pipe material selection based on operating pressures and the potential surge conditions associated with a failure of the upstream pressure reducing valve. Recently, MKN successfully completed the design and construction support for the Technology Drive Recycled Water Pipeline Replacement project.

Based on the overall value of MKN's proposal and staff's recent experience with MKN on other capital projects, staff recommends awarding a Professional Services Agreement to MKN in the amount of $349,552. The consultant selection matrix is provided as Exhibit "B", and MKN's proposal is provided as Exhibit "C".

FISCAL IMPACTS:

The San Joaquin Hills Road Recycled Water Pipeline Replacement, Project 13113, is included in the Fiscal Year 2025-26 Capital Budget. The existing budget is sufficient to fund the project's design phase.

ENVIRONMENTAL COMPLIANCE:

The project is exempt from California Environmental Quality Act as authorized under the California Code of Regulations, Title 14, Division 6, Chapter 3, Section 15301 (Class 1 "Existing Facilities") and Section 15302 (Class 2 "Replacement or Reconstruction"). Class 1 exempts the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of existing or former use, such as existing facilities of publicly owned utilities used to provide public utility services. Class 2 exempts the replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced, such as the replacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity.

RECOMMENDATION:

That the Board authorize the General Manager to execute a Professional Services Agreement with MKN in the amount of $349,552 for engineering design services for the San Joaquin Hills Road Recycled Water Pipeline Replacement, Project 13113.

LIST OF EXHIBITS:

Exhibit "A" – Project Location Map
Exhibit "B" – Consultant Selection Matrix
Exhibit "C" – MKN Proposal and Fee

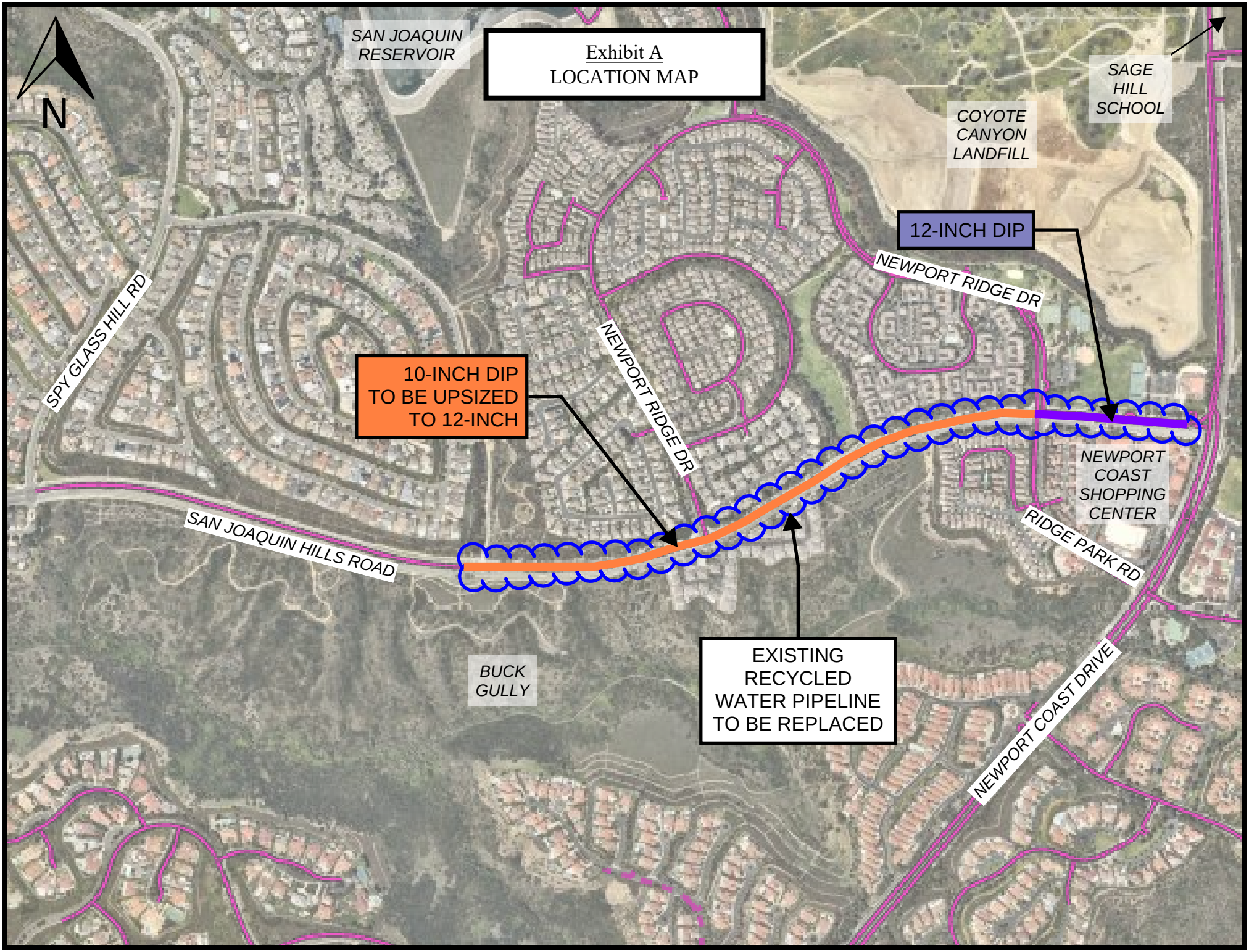
Exhibit A
LOCATION MAP
N
SAN JOAQUIN RESERVOIR
COYOTE CANYON LANDFILL
SAGE HILL SCHOOL
12-INCH DIP
NEWPORT RIDGE DR
SPY GLASS HILL RD
10-INCH DIP TO BE UPSIZED TO 12-INCH
NEWPORT RIDGE DR
NEWPORT COAST SHOPPING CENTER
SAN JOAQUIN HILLS ROAD
RIDGE PARK RD
BUCK GULLY
EXISTING RECYCLED WATER PIPELINE TO BE REPLACED
NEWPORT COAST DRIVE

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Exhibit "B"

CONSULTANT SELECTION MATRIX

San Joaquin RW Pipeline Replacement										
Item	Description	Weights	BKF Engineers		JIG Consultants		LEE+RO		MKN	
A	TECHNICAL APPROACH									
1	Project Understanding and Approach	25%	1		3		4		2	
2	Related Project Experience	15%	3		2		4		1	
3	Scope of Work	25%	3		2		4		1	
3	Project Team	35%	4		2		3		1	
	Weighted Score		2.85		1.95		3.05		1.10	
	Ranking of Consultants		3		2		4		1	
B	SCOPE OF WORK									
TASK	DESCRIPTION		Task Hours	Fee	Task Hours	Fee	Task Hours	Fee	Task Hours	Fee
1	**Project Management**		109	**$25,947**	136	**$27,592**	240	**$59,975**	96	**$24,258**
2	**Final Design**		915	**$390,840**	840	**$319,068**	1107	**$405,642**	742	**$325,294**
	TOTAL ENGINEERING SERVICES FEE WITHOUT OPTIONAL SERVICES		1,024	**$416,787**	976	**$346,660**	1,347	**$465,617**	838	**$349,552**
-	**Optional Services**		-	-	-	-	-	-	-	-
	Evaluate Transient Conditions for PRV Failure Case		-	-	-	-	6	$22,342	-	-
	TOTAL ENGINEERING SERVICES FEE INCLUDING OPTIONAL SERVICES		1,024	**$416,787**	976	**$346,660**	1,353	**$487,959**	838	**$349,552**
C	OTHER									
	Technical Drawings									
	Total Sheets		28	dwgs	16	dwgs	33	dwgs	28	dwgs
	Engineering Services Fee per Design Drawings		$14,885		$21,666		$14,787		$12,484	
	Personnel									
	Role		**Years of Experience**		**Years of Experience**		**Years of Experience**		**Years of Experience**	
	Project Manager		Nancy Baker	30	Joseph Gutierrez	35	Michael Guirguis	24	Parasto Azami	13
	Project Engineer		Adam Brown	18	Matthew McCormac	8	Adam Betsworth	20	Judy Beik	6
	QA/QC		Sravan Paladugu	21	Harvey Gobas	50	David Grossman	42	Kevin Saleh	30
	Design Engineer		Mykaiah Clermont	6	Kimiko Stafford	-	Ki Chung	35	Cindy Sevilla Esparza	5
	Design Engineer		Daniel David	5	Vincent Valparaiso	-				
	Sub Consultants									
	Traffic Control		Traffic Control Engineering		T2 Utilities Engineers		Traffic Control Engineering		-	
	Cathodic Protection		Corrpro		Universal Corrosion Services		RF Yeager Engineering		RF Yeager Engineering	
	Potholing		T2 Utilities Engineers		T2 Utilities Engineers		Underground Solutions		Boudreau Pipeline Corporation	
	Survey		-		KDM Meridian		The Prizm Group		Calvada Surveying	
	Geotech		Ninyo & Moore		Terracon Consultants, Inc.		Associated Soils Engineering		AESCO	
	Insurance									
	General Liability		Yes		Yes		Yes		Yes	
	Automobile		Yes		Yes		Yes		Yes	
	Workers' Compensation		Yes		Yes		Yes		Yes	

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DECEMBER 17, 2025 AT 4:00PM

PROPOSAL FOR

Engineering Design Services for the San Joaquin Hills Road Recycled Water Pipeline Replacement Project (PR 13113)

IRVINE RANCH WATER DISTRICT
BRIAN BOTELLO | PROJECT MANAGER
15600 SAND CANYON AVENUE, IRVINE, CA 92618

mkn
AN ARDURRA COMPANY

MKN | 16310 BAKE PARKWAY | IRVINE, CA 92618 | T 949.836.5807

December 17, 2025

Brian Botello
Project Manager
Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92618

Subject: Proposal for Engineering Design Services for the San Joaquin Hills Road Recycled Water Pipeline Replacement Project (PR 13113)

Dear Mr. Botello:

MKN & Associates, LLP (MKN), an Ardurra Group, Inc. (Ardurra) company, is pleased to submit this proposal in response to the Irvine Ranch Water District's (IRWD) Request for Proposal (RFP) for Engineering Design Services for the San Joaquin Hills Road Recycled Water Pipeline Replacement Project (PR 13113). We appreciate the opportunity to offer our expertise for this critical infrastructure project.

We understand that this project involves the replacement of approximately 4,900 linear feet of ductile iron pipe (DIP) distribution mains within the recycled water (RW) system in the Newport Ridge development of the City of Newport Beach (City).

What distinguishes MKN is our connections with both IRWD and the City, built through years of collaboration and successful project delivery. Our Irvine-based team has a profound understanding of both agencies' operational practices, infrastructure standards, and the unique characteristics of the local environment.

AN ARDURRA COMPANY

FIRM NAME
MKN & Associates, LLP, an Ardurra Group, Inc. company

ADDRESS
16310 Bake Parkway
Irvine, CA 92618

POINT OF CONTACT
Parasto Azami, PE
Project Manager
pazami@mknassociates.us
949.836.5807

For this project, MKN is pleased to propose the same trusted team—Parasto Azami, Safa Kamangar, and Kevin Saleh—supplemented by additional design staff who are also locally based in Irvine. This continuity ensures a seamless transition into project startup, while the added support enhances our capacity to meet accelerated schedules and deliver high-quality work. Our established familiarity with IRWD's infrastructure and design requirements enables us to identify potential risks, streamline coordination with stakeholder agencies, and tailor our technical approach to align with the project's specific needs and long-term operational goals.

MKN has successfully delivered numerous infrastructure improvements across Orange County, including complex recycled water pipeline replacements and distribution system upgrades for IRWD and others. Our proven track record reflects our commitment to technical excellence, clear communication, adherence to schedules, and delivering cost-effective, constructible solutions. We bring not only experience, but also a strong partnership mindset and a dedication to supporting your agency with reliable, responsive service from design through construction.

Please contact me at **949.836.5807** or **pazami@mknassociates.us** for any questions or further discussion regarding this proposal. MKN appreciates the opportunity to partner with IRWD on this critical effort. The firm's focus will be on delivering technical excellence, timely execution, and cost-effective results in alignment with IRWD's project objectives and standards.

Sincerely,

Parasto

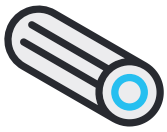
Parasto Azami, PE
Project Manager

MKN's Client-Centric Origins

MKN & Associates, LLP (MKN) is a consulting engineering firm originally founded in 2012. Since then, we've grown to more than 85 professional engineers, planners, construction managers/inspectors, and support staff across eight offices throughout California. In November 2025, MKN proudly joined Ardurra Group, Inc. (Ardurra), a nationally recognized firm providing engineering services since 1929. This allows MKN to maintain our core principles and continue delivering the same high level of quality and responsiveness our clients expect, while expanding our capabilities and resources to better serve public agencies' evolving needs. Now with more than 2,000 employees nationwide, including 250 in California, we bring deep expertise in complex engineering and design services. Ardurra is ranked #75 on Engineering News-Record's (ENR) Top 500 Design Firms list, and consistently among the top 20 firms in ENR's Water Sourcebook rankings for water and wastewater services.

The project will be managed out of MKN's Irvine office, less than 4 miles from IRWD's office.

Water Is Our Focus



400+ Miles of Pipeline

Local Water-Focused Team

Proven IRWD Experience

At MKN, water is our sole focus. From planning to design and rehabilitation, we handle every aspect of water, wastewater, and recycled water infrastructure. Our principals have decades of experience in management and leadership roles for some of the highest-ranked engineering firms in the world, and we are excited to bring our expertise to IRWD.

Our team has extensively reviewed the RFP, and we are confident that we are the right team for this project. MKN offers a wide range of water, wastewater, and water reuse expertise, including **Pump Station, Pipeline, Wells, Treatment, Infrastructure, Program Management, Planning and Hydraulic Modeling, and Construction Management.**

MKN Is Committed to IRWD

MKN is local to Orange County and committed to a long-term relationship with the District.

Since opening our Irvine office in 2019, we have grown to more than 20 staff located just miles from IRWD's headquarters. Today, we provide engineering services to 15 water and wastewater public agencies in Orange County. This growth, both in Orange County and across California, reflects our client-focused approach, commitment to quality, and industry-leading responsiveness. MKN has long been dedicated to meeting California's infrastructure needs. From its inception, the firm has delivered innovative and sustainable engineering solutions tailored to the region's unique challenges. Our extensive experience in water, wastewater, and recycled water projects underscores our ability to deliver high-quality services that evolve with the demands of local communities.

MKN has successfully delivered three pipeline projects for IRWD in the past 3 years: (1) Serrano Creek Pipeline (pictured), (2) Park Plaza Pipeline, and (3) Technology and Ada Pipeline. All three projects have been delivered on budget and on schedule.

MKN | 16310 BAKE PARKWAY | IRVINE, CA 92618 | T 949.836.5807

Additional Office Locations:
San Jose, Oakdale, Sacramento

BY THE NUMBERS

250+
Staff Members in

14
California Offices

150+
Municipal Clients

MKN has delivered engineering services to more than 150 municipal clients across California

FRESNO
BAKERSFIELD
SAN LUIS OBISPO
SANTA CLARITA
VENTURA
LOS ANGELES
NEWPORT BEACH
TEMECULA
IRVINE
OCEANSIDE
SAN DIEGO

Orange County Clients

- Yorba Linda Water District
- City of Anaheim
- East Orange County Water District
- Orange County Water District
- City of Fountain Valley
- City of Huntington Beach
- Irvine Ranch Water District
- Mesa Water District
- Trabuco Canyon Water District
- City of Newport Beach
- Emerald Bay Services District
- Laguna Beach County Water District
- South Coast Water District
- South Orange County Wastewater Authority
- City of San Clemente

MKN | 16310 BAKE PARKWAY | IRVINE, CA 92618 | T 949.836.5807

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3 PROJECT EXPERIENCE

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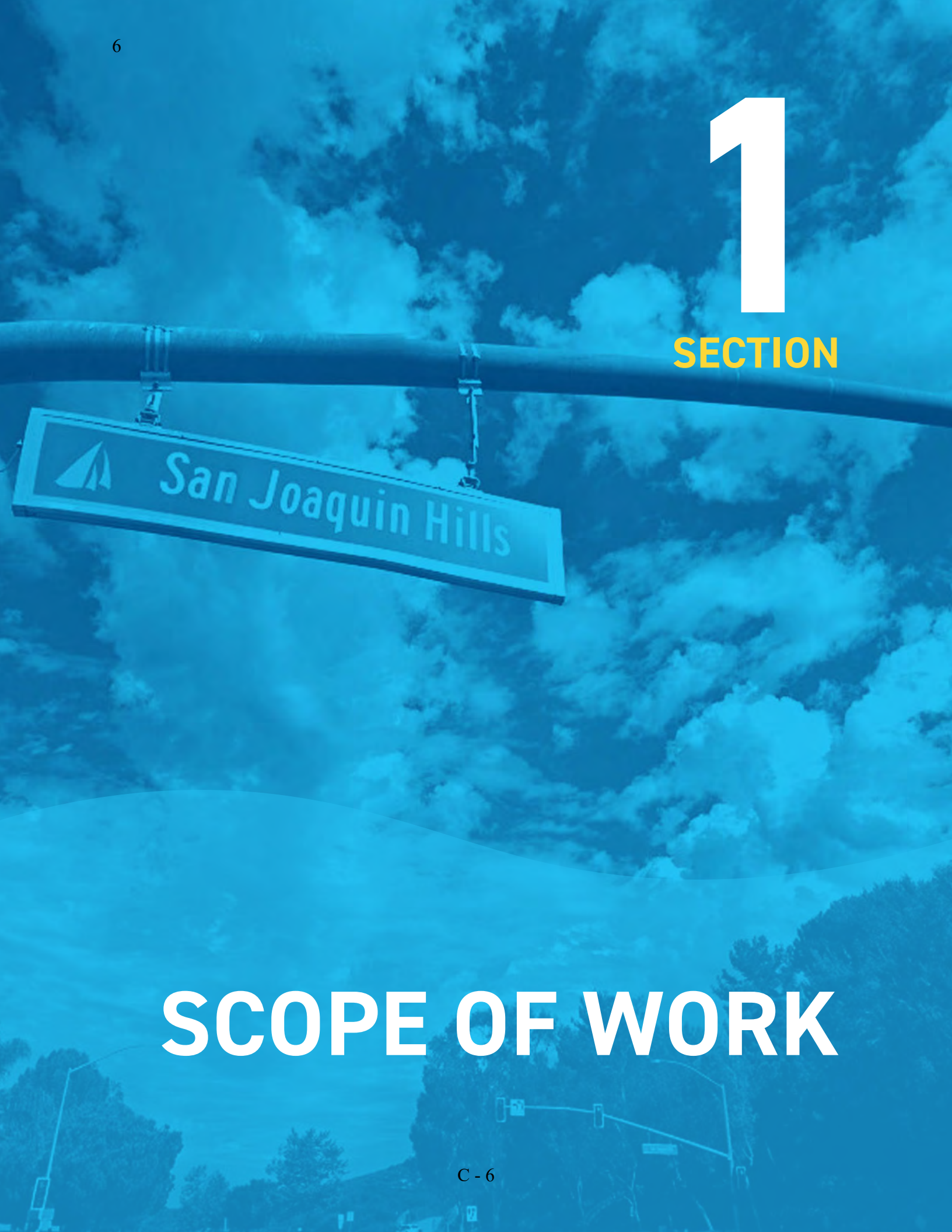
7 INSURANCE

APPENDIX

A RESUMES



1 SECTION

SCOPE OF WORK

1 SCOPE OF WORK

Project Approach

MKN has assembled a knowledgeable, locally based team with extensive experience delivering IRWD pipeline replacement projects. Our team has reviewed IRWD's RFP, record drawings, cathodic protection reports, and relevant exhibit documents to develop a targeted project approach. We understand the complexity of maintaining service to the Newport Ridge community, coordinating with the City of Newport Beach (City), and incorporating IRWD's design and constructability lessons learned from the Woodbridge RW Pipeline Replacement Program. These lessons were also successfully incorporated in the recently completed Technology Drive and Ada Pipeline Project design.

To effectively deliver the design of the San Joaquin Hills Road Recycled Water Pipeline Replacement Project, MKN will focus on constructability, traffic safety, corrosion mitigation, and stakeholder coordination.

MKN will evaluate system operating pressures, including potential surge conditions associated with failure of the upstream PRV, to determine the most appropriate replacement pipeline material (PVC or DIP). Selection of the preferred material will consider pressure ratings, lifecycle cost, long-term maintenance requirements, and corrosion protection needs, including compatibility with the existing cathodic protection (CP) system.

MKN assumes that the District will provide the necessary system information required for this evaluation, including system operating data, PRV settings, system pressure records, and existing CP documentation.

Table 1 presents a side-by-side comparison of PVC (AWWA C900) and Ductile Iron Pipe (AWWA C151) across key performance categories relevant to the project.

Table 1: Pipe Material Comparison

Pipe Material	Pressure Capacity	Surge Resistance	Corrosion Resistance	Weight & Installation Cost	Lifecycle Maintenance	Service Life	Typical Municipal Use
PVC (AWWA C900)	Rated 305 psi	Less resistant to rapid pressure spikes	Excellent resistance	Lightweight; easier to install	Very low maintenance	50+ years	Widely used in distribution systems
Ductile Iron (AWWA C151)	exceeds 350–500+ psi	Excellent tolerance	Requires corrosion protection	Heavier; higher installation cost	Moderate maintenance cost	75–100+ years with appropriate corrosion protection	Mostly used for PRVs and high-pressure zones

Green: Attributes generally favorable or advantageous for that category
Red: Limitations or less-preferred characteristics that may require additional consideration during design

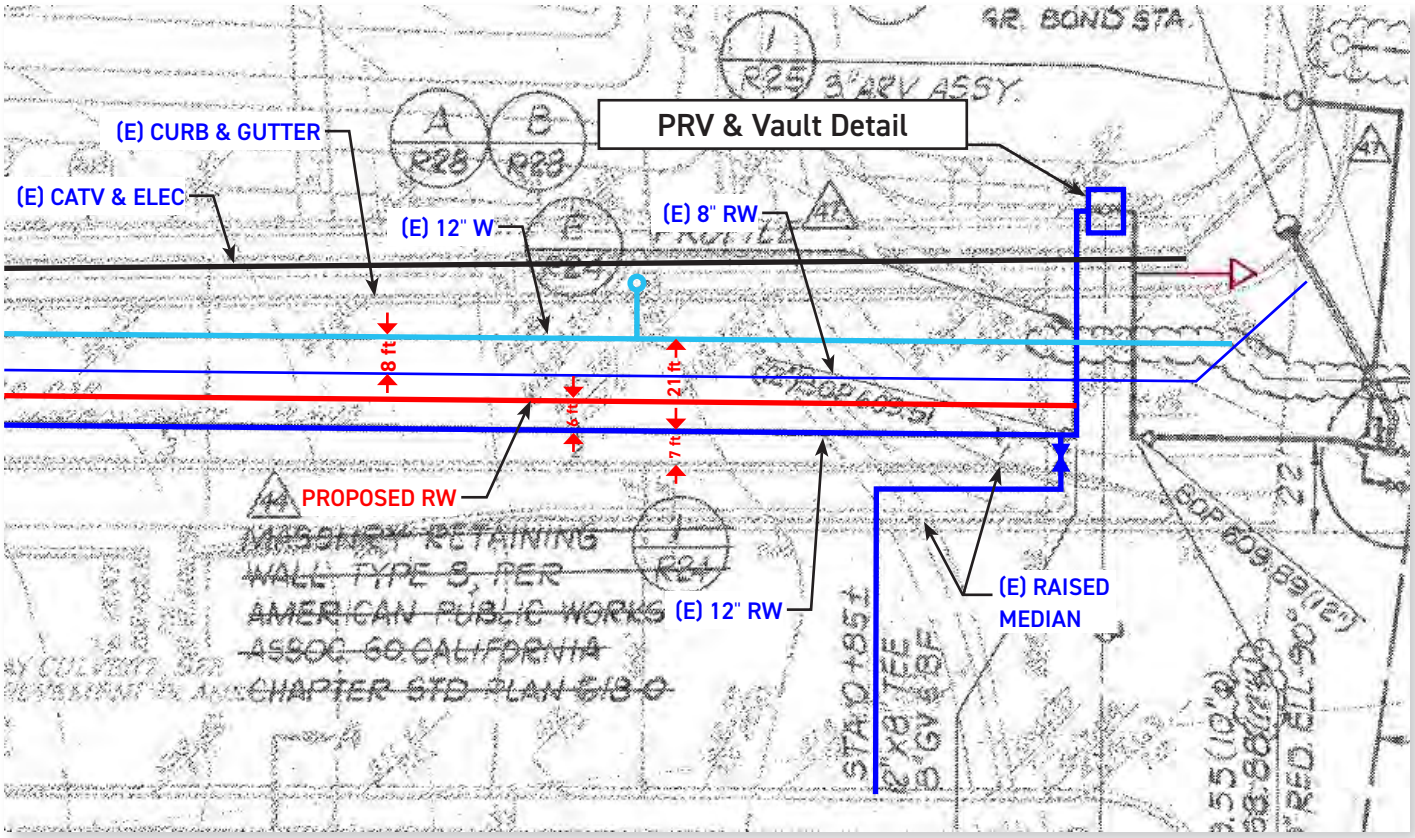
8

Additionally, MKN has reviewed the project background and existing record drawings and evaluated the key issues and proposed approaches/mitigations, which are summarized in **Table 2,** and proposes a potential alignment, which is included in **Figure 1**.

Table 2: Project Key Issues and Mitigations

Challenge	Approach
Multiple leaks and cathodic protection system history	Evaluate existing ICCP system, assess anode and rectifier capacity, and recommend modifications if needed.
Pavement fabric (Petromat) potential	Confirm presence through geotech borings, potholing, and City coordination; clearly define removal/disposal scope in specifications.
Maintaining service to all customers	Design phased construction, minimize shutdown durations, and prepare tie-in sequences.
City of Newport Beach coordination	Establish early coordination with City Engineering and Inspection groups to confirm asphalt paving requirements, trench backfill options (including allowable slurry backfill), steel plate limitations, and pavement fabric considerations. Additionally, MKN already has bi-weekly meetings with the City's Engineering staff due to other ongoing projects.
Minimizing resident disruption	Work with the City and IRWD to review allowable work hours, night work options, and construction access requirements for the Newport Ridge neighborhood.
Traffic control along major arterial	Prepare detailed traffic control plans; position proposed pipeline within one traffic lane wherever feasible to limit lane closure requirements.

Figure 1: Potential Pipe Alignment



Scope of Work

The following scope of work is based on our extensive pipeline design experience and the requested scope provided in IRWD's RFP. We have provided a **detailed scope of work** as part of our proposal to assist in an expedited process between selection and notice to proceed.

1 TASK 1 Project Management

Task 1.A | Meetings

Overall project management, which includes supervision of in-house staff, planning and monitoring of contract budget and schedule, and coordination with the District and MKN's project team, will be conducted by the MKN Project Manager. The Project Manager will review the status of budget, schedule, and relevant project issues with the District's Project Manager on a bi-weekly basis via email or telephone. The design phase is assumed to be 5 months.

MKN shall organize, attend, and conduct four meetings as part of this scope of services. The following meetings are included:

1. Kick Off Meeting: 1 hour, virtual
2. Preview Proposed Alignment Meeting (30%): 1 hour, virtual
3. Presentation of the 70% Design: 1 hour, in person
4. Presentation of the 100% Design: 1 hour, in person

MKN will submit meeting agendas 1 week prior to the meeting and provide meeting minutes within 1 week of the meeting date.

DELIVERABLES:

- Meeting agendas/meeting minutes (four total)

Task 1.B | Agency Coordination

MKN will coordinate with the City and identify all City requirements for both design and construction. MKN will present an estimated timeline for the City to complete the plan review. In addition, MKN will coordinate the construction sequencing and working hours.

Task 1.C | Quality Assurance/Quality Control

MKN will provide senior technical review and implement quality assurance and quality control (QA/QC) measures throughout the project. Kevin Saleh will lead the QA/QC work. He has provided engineering reviews for over 20 years and understands the District's standards and project requirements.

2 TASK 2 Final Design

Task 2.A | Project Manual

MKN will prepare a Project Manual in standard IRWD format for the Contract Documents. IRWD's front end documents will be utilized, and supplemental sections will be prepared as needed for the construction of a complete project. The Project Manual will describe the work, schedule, access or constraints, and sequencing associated with the work. The Project Manual also includes General Specifications, modifications thereto, and any Project Technical Specifications. The Project Manual template will be provided in Microsoft Word format. MKN will provide a searchable PDF file of the bidding documents in 8.5-inch-by-11-inch paper size.

DELIVERABLES:

- 70% Design Submittal – complete draft 70% Project Manual
- 100% Design Submittal – complete draft 100% Project Manual
- Final Submittal – Final Project Manual with the Engineer's electronic stamp and signatures, ready for reproduction

Task 2.B | Construction Plans

MKN will prepare detailed construction drawings in the latest AutoCAD format using NCS V4.0 layering standards and IRWD's border template, referencing NAVD 88 and NAD 83 survey datums. The plans will include all required components—site plan, index map, general notes, plans and profiles, service replacements, pipeline connections, abandonment details, construction sequencing, traffic control, and necessary details for the improvements.

MKN will design a pipeline replacement alignment that minimizes conflicts with existing utilities and private plumbing connections. The existing system must remain in service during construction, with only brief, coordinated shutdowns for final connections to the transmission mains. MKN will coordinate all shutdowns with IRWD and work with agencies such as the City to explore alternative construction hours to reduce impacts to nearby residents. MKN will also develop detailed construction sequencing, shutdown plans, and dewatering strategies to limit service interruptions.

MKN will determine the new pipeline material and alignment based on utility research, potholing, and geotechnical considerations. In selecting materials, MKN will evaluate potential surge pressures from the upstream PRV and assess impacts to the existing cathodic protection (CP) system, including any needed modifications. The existing DIP will be abandoned per IRWD standards, and MKN will include requirements for slurry or cellular concrete fill, pavement repair, and trench backfill.

MKN will prepare and process construction plans for approval by the appropriate agencies. Construction notes will be used on all drawings, and existing IRWD utilities will be identified by as-built plan numbers and material. The 30%, 70%, 100%, and final plans will be submitted electronically in PDF, and the final plans will also be provided in AutoCAD format.

The following is a list of anticipated design drawings:

Sheet No.	Drawing No.	Title
1	G-001	Title Sheet
2	G-002	Drawing Index, Abbreviations, Location and Index Maps, Legend, and Symbols
3	G-003	Construction, Recycled Water and Surveying Notes
4	C-101	Plan and Profile San Joaquin Hills Road – I
5	C-102	Plan and Profile San Joaquin Hills Road – II
6	C-103	Plan and Profile San Joaquin Hills Road – III
7	C-104	Plan and Profile San Joaquin Hills Road – IV
8	C-105	Plan and Profile San Joaquin Hills Road – V
9	C-501	Connection Details
10	C-502	Civil Details
11-28	TC-1 to TC-18	Traffic Control Plans

DELIVERABLES:

- 30% draft design concept alignment
- 70% draft in PDF format
- 100% draft in PDF format
- Final drawings in PDF format and CAD source files

Task 2.B-1 | Review of Background Material

MKN will review the data provided by the District as part of the District's RFP; these documents include as-built files and pipeline Atlas for the project area. MKN will prepare and submit a data request form for additional information needed from the District, which shall include but is not limited to:

1. IRWD CAD standards, title block, and pen table
2. IRWD Project Manual template in Microsoft Word format
3. IRWD Construction Manual
4. IRWD Standard Liquidated Damage Calculation Form
5. Record drawings

MKN Quick Start – Data Review Complete.

Our design team has already reviewed all provided as-builts. From this information, we have compiled key areas of concern, potential alignments, and points of connection. *We are ready to hit the ground running and will deliver an expedited schedule.*

Task 2.B-2 | Topographic Field Survey

MKN's subconsultant, Calvada, will conduct field surveying and produce topographic maps that will be used as a base plan for the proposed improvements. Topographic maps will include all street rights-of-way, property lines, and existing easement boundaries in the project area in the base map. MKN will recommend the width and length of the field surveying to capture the topographic features needed to complete the design. Our surveyor will obtain appropriate permits as required to perform the field survey.

Task 2.B-3 | Utility Review

MKN will perform utility research to locate utilities or other physical features, including District utilities and utilities owned by other agencies (e.g., storm drain, electrical, gas, and phone/communication duct banks). MKN will make multiple attempts to contact utilities failing to respond, and all correspondence will be documented within a utility log. Additionally, MKN will review street improvement record drawings from the City of Newport Beach to confirm the existing street paving type (e.g., rubberized, Petromat) and any special requirements and costs for removal and disposal. Responses, including relevant utilities, will be included in the utility log.

DELIVERABLES:

- Utility log (PDF)

MKN Quick Start – Utility Log Complete.

Our team has already conducted the utility research and prepared the initial utility log, and we will send letters immediately following Notice of Award. Our approach utilizing a utility log limits risks associated with utility conflicts by documenting all correspondence.

Task 2.B-4 | Pothole Investigation

MKN's subconsultant, Boudreau Pipeline, will complete potholing as needed to determine utility conflicts, e.g., proximity of crossings with existing water, sewer, storm drain, and dry utilities, with the proposed alignments of the replacement pipelines, or to determine the locations and depths of existing mains at proposed points of connection. MKN has anticipated a total of 20 pothole excavations. This work shall include obtaining permits and all necessary traffic control measures to perform the pothole excavations, applying hot patch asphalt repair, and surveying the pothole locations. If additional potholes are needed, they will be invoiced at the proposed unit price.

DELIVERABLES:

- Pothole Report (PDF)

Task 2.B-5 | Cathodic Protection System Evaluation

MKN's subconsultant, RF Yeager, will complete an evaluation of the existing ICCP system to determine its suitability for the proposed alignment. This work includes but is not limited to anode groundbed life calculations and rectifier voltage capacity verification.

DELIVERABLES:

- CP system evaluation and recommendations Technical Memorandum (TM)

Task 2.C | Traffic Control Plans

MKN will prepare detailed traffic control plans for all proposed pipelines. The traffic control plans will be prepared in conceptual and final stages and in accordance with, and approved by, the appropriate jurisdictional agency (e.g., City, County, and/or others). Traffic control plans will be prepared at 40 scale (1" = 40') using AutoCAD drafting software on IRWD Title Block. Plans will include all existing and temporary striping, pavement markings, pavement legends, and temporary barricades. At the project limits, we will reference existing striping based on our field review. The traffic control plans will be prepared in accordance with the current California Manual on Uniform Traffic Control Devices (MUTCD), showing all lane closures, restrictions, tapers, and other disruptions of normal traffic flow, including pedestrian and vehicular detours. MKN will develop traffic control concept plans and coordinate with IRWD and the City to select the most cost-effective plan.

DELIVERABLES:

- 70% submittal: conceptual traffic control plans (to be presented and discussed with IRWD and the City)
- 100% submittal
- Final submittal

Task 2.D | Geotechnical

MKN's subconsultant, AESCO, will conduct an initial geotechnical study consisting of the following:

- Review historical geotechnical reports for the site.
- Review and consult with MKN regarding the existing pipeline, new pipeline construction methods, and geotechnical aspects of the project.
- Perform geotechnical investigations (if needed, pending review of existing report) and up to four exploratory borings (30 feet deep) to determine soil properties and conditions and groundwater levels.
- Preparation of a Geotechnical Report for the project summarizing findings and conclusions regarding the geotechnical conditions along the alignment.

ASSUMPTIONS:

Excavations will be backfilled and tamped with the excavated spoils and capped with hot-patch asphalt in pavement areas. No contaminated soil is expected in the project area. Traffic control is required to perform the work.

DELIVERABLES:

- Geotechnical Report (PDF)

Task 2.E | Permits

MKN will identify all required permits and their controlling agencies, e.g., the City. MKN will prepare applications and secure approval of encroachment permit(s). Copies of permit conditions will be inserted in the Project Manual's Appendix, and the plans and specifications will reflect the requirements for pavement restoration by the controlling agencies. IRWD will pay all permit fees directly to the agency. MKN will contact the property owner if a temporary construction easement or permit is required.

DELIVERABLES:

- Completed permit application or permit conditions

Task 2.F | Project Schedule

MKN will prepare and update a project schedule, utilizing Microsoft Project, that includes design through construction phases. The schedule will include all critical factors impacting the project schedule, including permitting, design, bid, and construction phases, and shall reflect IRWD's Notice of Award and Notice to Proceed, contractor shop drawing submittals and Engineer review, manufacturing and delivery times for construction materials, construction activities, and construction closeout. MKN will deliver schedules with the following deliverables: 70%, 100%, and Final.

DELIVERABLES:

- Project schedule as described above in PDF format

Task 2.G | CEQA Documentation

This proposed project is subject to the California Environmental Quality Act (CEQA), and IRWD shall prepare a Notice of Exemption (NOE) for the project. MKN will provide a Location Map for the NOE.

DELIVERABLES:

- Exhibits as described above in PDF format

Task 2.H | Liquidated Damages Calculations

MKN will assist in calculating liquidated damages values using IRWD's standard liquidated damage calculation forms provided by the District.

Task 2.I | Opinion of Probable Construction Cost

MKN will prepare a detailed and itemized Opinion of Probable Construction Cost for the proposed facilities. The Opinion of Probable Construction Cost will be provided at the 70%, 100%, and Final deliverables and will be in the form of the Schedule of Work as included in the Bid Documents section of the Project Manual.

Task 2.J | Design Deliverables

- **30% Draft:** Searchable 30% design concept drawings in PDF format.
- **70% Draft:** Searchable 70% design drawings, 70% Draft Project Manual, Project Schedule, and Opinion of Probable Construction Cost in PDF format.
- **100% Draft:** Searchable 100% design drawings, 100% Draft Project Manual, Project Schedule, and Opinion of Probable Construction Cost in PDF format.
- **Final:** Final design drawings, Final Project Manual, and Final Opinion of Probable Construction Cost in PDF format, with CAD and Word source files.

Task 2.K | Bid Period Assistant

During the bidding period, MKN shall assist with providing information and clarification of bid documents to prospective bidders. This shall include the preparation of one addendum for bidding, including revisions to the design plans and specifications and assistance with addressing bidder questions. The level of effort assumed for this task includes:

- **Plan Revisions:** 8 hours for plan revisions to the construction drawings.
- **Project Manual Specification Revisions:** 8 hours for revisions or additions to the project specifications.
- **Bidder Questions:** 4 hours to address and respond to bidder questions.
- **Pre-Bid Meeting:** Attend a pre-bid meeting, which may include a site visit.

DELIVERABLES:

- One addendum (PDF)

2 SECTION

PROJECT TEAM

2 PROJECT TEAM

Irvine Ranch Water District

PROJECT MANAGEMENT

PRINCIPAL-IN-CHARGE
Safa Kamangar, PE, PMP, CCM, QSD/P
Irvine

PROJECT MANAGER
Parasto Azami, PE
Irvine

QA/QC
Kevin Saleh, PE
Irvine

PROJECT TEAM

PROJECT ENGINEER
Judy Beik, PE
Cindy Sevilla Esparza, PE
Irvine

SURGE ANALYSIS
Chang Ye, PhD, PE, PMP, CPE, QSD
Irvine

TRAFFIC CONTROL
James Miller, PE
Oceanside

SUBCONSULTANTS

GEOTECHNICAL
AESCO
Huntington Beach

SURVEY
Calvada Surveying
Corona

POTHOLING
Boudreau Pipeline
Corona

CATHODIC PROTECTION
RF Yeager Engineering
Lakeside

MKN Project Team

MKN has assembled a dedicated local team with extensive pipeline rehabilitation expertise that is committed to supporting your project from start to finish. Nearly all team members are based in MKN's Irvine office, bringing both direct IRWD experience and specialized knowledge in pipeline replacement. Collectively, our staff has successfully delivered dozens of replacement projects encompassing many miles of pipeline.

The following section introduces the project team, outlining their roles and providing brief bios. Full resumes for personnel are included in Appendix A.

Parasto Azami, PE
Project Manager

EDUCATION
MS, Civil Engineering, University of California, Irvine, CA
BS, Mechanical Engineering, University of Tabriz, Iran

LICENSES & REGISTRATIONS
Professional Civil Engineer, CA No. 91468
Project Management Certification, UCI DCE

Parasto Azami brings over 13 years of experience in water and wastewater engineering design, with a strong focus on pipeline design. Her expertise includes water conveyance systems, gravity sewers, force mains, pump stations, and the rehabilitation and condition assessment of infrastructure. She has successfully led numerous complex, large-scale pipeline projects, delivering reliable and sustainable solutions. Parasto's deep understanding of engineering challenges and IRWD requirements and her commitment to excellence ensure optimal outcomes for her clients and stakeholders.

Safa Kamangar, PE, PMP, CCM, QSD/P

Principal-in-Charge

Safa Kamangar is a highly experienced professional with 28 years of expertise in water, wastewater, and water reuse. As a design engineer, Safa has provided hydraulic calculations, mechanical design, detailed design drawings, and development of specifications. He has a strong background in planning, design, and construction management, gained from working in both the private and public sectors. His expertise encompasses design, construction, and commissioning of water/wastewater infrastructure including more than 50 pumping facilities, 15 wells, and more than 150 miles of pipeline ranging from 4 inches to 72 inches in diameter.

EDUCATION

MS, Civil Engineering, University of Tehran, Iran

BS, Civil Engineering, Azad University, Tehran, Iran

LICENSES & REGISTRATIONS

Professional Civil Engineer, CA No. 70118

Project Management Professional (PMP), No. 1863656

Certified Construction Manager, No. 6341

Qualified SWPPP Developer/ Practitioner (QSD/QSP), CA No. 23059

Kevin Saleh, PE

QA/QC

Kevin Saleh has more than 30 years of experience as a civil engineer. He has led and participated in planning, design, construction management, and construction support for numerous public works projects, particularly in water and wastewater. His expertise spans the design and management of water distribution and treatment facilities, pumping stations, treatment plant processes, reservoirs, pressure-reducing/surge facilities, wastewater conveyance systems, pumping stations, and treatment plant projects.

EDUCATION

BS, Civil Engineering, University of Tabriz, Iran

Computer Programming/ System Analysis, Seneca Polytechnic, Toronto, Canada

Project Management (PM) Certificate, Cornell University, Ithaca, NY

LICENSES & REGISTRATIONS

Professional Civil Engineer, CA No. 90535

Chang Ye, PhD, PE, PMP, CPE, QSD

Surge Analysis

Chang Ye has been gaining industrial experience in civil engineering since 2005. He has designed and managed over 200 civil infrastructure projects in Southern California, including potable water reservoirs, water wells, pump and lift stations, water, sanitary sewer, and recycled water pipelines, stormwater drainage systems, treatment facilities, on-site treatment systems, airports, railroads, and site gradings and developments.

EDUCATION

PhD, Civil Engineering, Missouri University of Science and Technology, Rolla, MO

MS, Applied Ecology, Chinese Academy of Sciences, Beijing, China

BS, Environmental Engineering, Zhejiang Agricultural University, Zhejiang, China

LICENSES & REGISTRATIONS

Professional Civil Engineer, CA No. 68761

Project Management Professional (PMP), No. 3709402

Certified Professional Estimator (CPE), CA No. 310000-191-0919

Qualified SWPPP Developer (QSD), CA No. 68761

James Miller, PE
Traffic Control

James Miller has more than 20 years of experience as a civil engineer preparing or leading the preparation of traffic engineering design plans. He has extensive experience preparing traffic control and detour design plans for water and sewer projects throughout Southern California. In addition, he has prepared traffic control plans to accommodate construction of pipelines for the Eastern Municipal Water District, Otay Water District, San Diego County Water Authority, and City of San Diego Transportation Department, to name a few.

EDUCATION
BS, Civil Engineering, San Diego State University, San Diego, CA

LICENSES & REGISTRATIONS
Professional Civil Engineer, CA No. 82522

Judy Beik, PE
Project Engineer

Judy Beik is an accomplished project engineer with a 5-year background in water and wastewater planning, engineering design, and construction management. She excels in hydraulic modeling, planning document preparation, and technical report writing. Judy has a strong track record in designing sewer lift stations, pipelines, and has expertise in crafting detailed design documents, including plans, specs, and cost estimates. She's adept at managing project costs, reviewing construction requests, and leading construction progress meetings. With excellent communication skills, Judy effectively engages with diverse stakeholders to ensure project success.

EDUCATION
BS, Environmental Engineering, University of California, Irvine, CA

LICENSES & REGISTRATIONS
Professional Civil Engineer, CA No. 96365

Pipeline Assessment Certified (PACP), NASSCO, No. P0051766-122024

Cindy Sevilla Esparza, PE
Project Engineer

Cindy Sevilla Esparza is a Project Engineer experienced in water and wastewater infrastructure design, specifically pumping station design, water conveyance systems, condition assessments, pipelines, pipeline rehabilitation, storage, and planning. Cindy is also experienced in program management, permitting, and grant compliance.

EDUCATION
MS, Civil & Environmental Engineering, California Polytechnic State University, San Luis Obispo, CA

BS, Environmental Engineering, California Polytechnic State University, San Luis Obispo, CA

LICENSES & REGISTRATIONS
Professional Civil Engineer, CA No. 96093

Anticipated Schedule of Time on the Project

MKN and its proposed team are able to meet IRWD's needs in a consistent and timely manner. Key personnel assigned to the project will not be reassigned without prior IRWD written approval. Availability for each person is provided below.

Key Staff	Role/Classification	Availability
Parasto Azami, PE	Project Manager	40%
Safa Kamangar, PE, PMP, CCM, QSD/P	Principal-in-Charge	10%
Kevin Saleh, PE	QA/QC	20%
Chang Ye, PhD, PE, PMP, CPE, QSD	Surge Analysis	20%
James Miller, PE	Traffic Control	30%
Judy Beik, PE	Project Engineer	60%
Cindy Sevilla Esparza, PE	Project Engineer	50%

Subconsultants

To strengthen our team, we made deliberate choices to provide you with highly skilled, reliable subconsultant resources. The professional capabilities of each firm are briefly highlighted below. We have successfully collaborated on previous projects with all of the subconsultants identified, and these established working relationships will translate into effective communication, schedule efficiency, and the best value for IRWD.

AESCO
Geotechnical

AESCO's geotechnical engineers and engineering geologists are professionally registered and are highly proficient in a variety of geotechnical engineering methods and field inspections and are experienced with the current building codes and technology.

Boudreau Pipeline
Potholing

Boudreau Pipeline Corporation (Boudreau Pipeline) has completed conventional and highly complex pipeline projects for Southern California's leading builders, municipalities, utilities, and contractors. Their services can meet all wet utility needs, including installation of sewer, water, and fire lines and storm drain systems.

Calvada Surveying
Survey

Founded in 1989, Calvada Surveying, Inc. (Calvada) is a Disabled Veteran and Minority-Owned land surveying firm headquartered in Corona, California. The firm serves clients across Southern and Northern California, Washington, Oregon, and Arizona. Equipped with the latest surveying technology, including High-Definition Surveying (HDS) and drone capabilities, Calvada provides precise, efficient, and cost-effective solutions tailored to each project.

RF Yeager Engineering
Cathodic Protection

RF Yeager Engineering is a DVBE/SBE, SLBE, and SCOOP certified corrosion engineering firm providing corrosion control inspections and design services for the oil, fuel, water, and wastewater industries. Established in 2004, they have built strong relationships with many of the local public agencies and municipalities and truly believe that Client and Owner satisfaction is the method by which to measure a project's success. They pride themselves in being responsive to their Client's needs and offering a quality product and personalized service at a competitive rate.

3 SECTION

PROJECT EXPERIENCE

3 PROJECT EXPERIENCE

Experience with Similar Projects

The following represent a sample of MKN's direct project experience where the services provided were the same or similar in nature to the services requested in the RFP:

Irvine Ranch Water District Projects

OWNER
Irvine Ranch Water District

CLIENT CONTACT
Belisario Rios, PE
Engineering Manager

15600 Sand Canyon Avenue
Irvine, CA 92618

rios@irwd.com
949.453.5394

Since 2022, as a pre-qualified approved vendor, MKN has been selected for multiple design projects for Irvine Ranch Water District. The following projects have been completed:

- **Serrano Creek Pipeline.** MKN provided alternatives analysis, hydraulic modeling, and final design for approximately 1,200 feet of new 8-inch recycled water pipeline to replace an existing pipe within a creek.
- **Park Plaza Pipeline.** MKN provided an expedited design for a new pipeline to replace approximately 1,100 feet of existing 6- and 8-inch AC pipeline that had reached the end of its useful life and was experiencing leaks.
- **Technology and Ada Recycled Water Pipeline Replacement.** MKN is providing design services for the replacement of approximately 4,600 linear feet of existing 6-inch ACP recycled water pipe and replacement of 22 services that have reached the end of their useful lives and are experiencing leaks.

PROJECT DATES
2022–2025

FINANCIAL SIZE
$700k (includes all three noted projects)

South Coast Water District Projects

OWNER
South Coast Water District

CLIENT CONTACT
Taryn Kjolsing, PE
Engineering Manager

31592 West Street
Laguna Beach, CA 92651

tkjolsing@scwd.org
949.541.1327

South Coast Water District selected MKN to serve as one of five firms on the District's multi-year on-call contract. MKN has been executing projects both under this contract, as well as stand-alone contracts. Projects include:

- **Reservoir 2B Replacement.** MKN completed a preliminary and final design for replacement of Reservoir 2B. The project included hydraulic modeling, alternatives evaluation, cost estimating, constraints analysis, and environmental and geotechnical evaluation.
- **Coastal Recycled Water Pipeline Expansion.** Design services for approximately 5,500 feet of 8-inch recycled water pipeline and a new pressure-reducing station within the City of Dana Point.
- **Marriott Pipeline.** Design services for a 12-inch water main approximately 1,500 feet in length located in Dana Point in the vicinity of the Laguna Cliffs Marriott.

PROJECT DATES
2020–Ongoing

FINANCIAL SIZE
Reservoir 2B Replacement:
$565k

Coastal RW Pipeline Expansion:
$440k

Marriott Pipeline:
$220k

East Orange County Water District Projects

OWNER
East Orange County Water District

CLIENT CONTACT
David Youngblood, PE
General Manager

185 North McPherson Road
Orange, CA 92869

dyoungblood@eocwd.com
714.538.5815

MKN has been providing as-needed engineering services to East Orange County Water District through various contracts since 2021. The task orders received to date included the following:

- **Circula Panorama Zone 3 to 2 Conversion.** MKN designed a new pipeline to replace existing piping that reached the end of its useful life. The project also included a new distribution system and customer PRVs.
- **Brae Glen Pipeline.** Design of new pipeline and abandonment of existing pipeline in private easement.
- **Hinton Way & St. Jude Easement Pipeline Replacement.** Design of new 6-inch pipeline off Crawford Canyon Road, with tie-in to an existing 8-inch steel water main, and abandonment of existing pipeline in private easement.
- **Orange Knoll PRV.** Design of new PRV and abandonment of existing pipeline in private easement.
- **Water and Sewer Standards Update.** MKN completed an update to the District's water and sewer standards.

PROJECT DATES
2021–Ongoing

FINANCIAL SIZE
Circula Panorama:
$252k

Brae Glen Pipeline:
$75k

Hinton Way & St. Jude:
$70k

Orange Knoll PRV:
$25k

Water and Sewer Standards:
$100k

Placentia Water Line

OWNER
Yorba Linda Water District

CLIENT CONTACT
Yvette Hanna, PE
Senior Engineer

1717 E. Miraloma Avenue
Placentia, CA 92870-6623

yhanna@ylwd.com
714.701.3000

This project involved the abandonment of an existing 6-inch asbestos cement pipeline and construction of approximately 1,100 linear feet of 8-inch PVC pipeline along McKenzie Drive, Lute Avenue, Roxborough Drive, and Cedarlawn Drive. The scope of work also included the installation of 35 new 1-inch service lines, reconnection of these service lines to existing meters, and removal and replacement of three fire hydrants. MKN conducted a site visit and collaborated with the operations manager to identify existing pipe and meter connections, ensuring the recommended pipeline alignment meets the District's requirements.

PROJECT DATES
2024–2025

FINANCIAL SIZE
$145k

Hollywood Beach and Roosevelt Water Pipeline Improvements

OWNER
Channel Islands Beach Community Services District

CLIENT CONTACT
Pete Martinez, PE
General Manager

353 Santa Monica Drive
Oxnard, CA 93035

pmartinez@cibcsd.com
805.827.3000

As part of the Channel Islands Beach Community Services District's water pipeline assessment, MKN evaluated existing conditions and risk mitigation measures associated with an existing potable pipeline located within private easements and provided three alternatives for pipeline improvements. The project included planning, design, and construction support for new 6-inch to 8-inch PVC water lines, abandonment of existing 8-inch AC easement line, and transfer/relocation of residential meters.

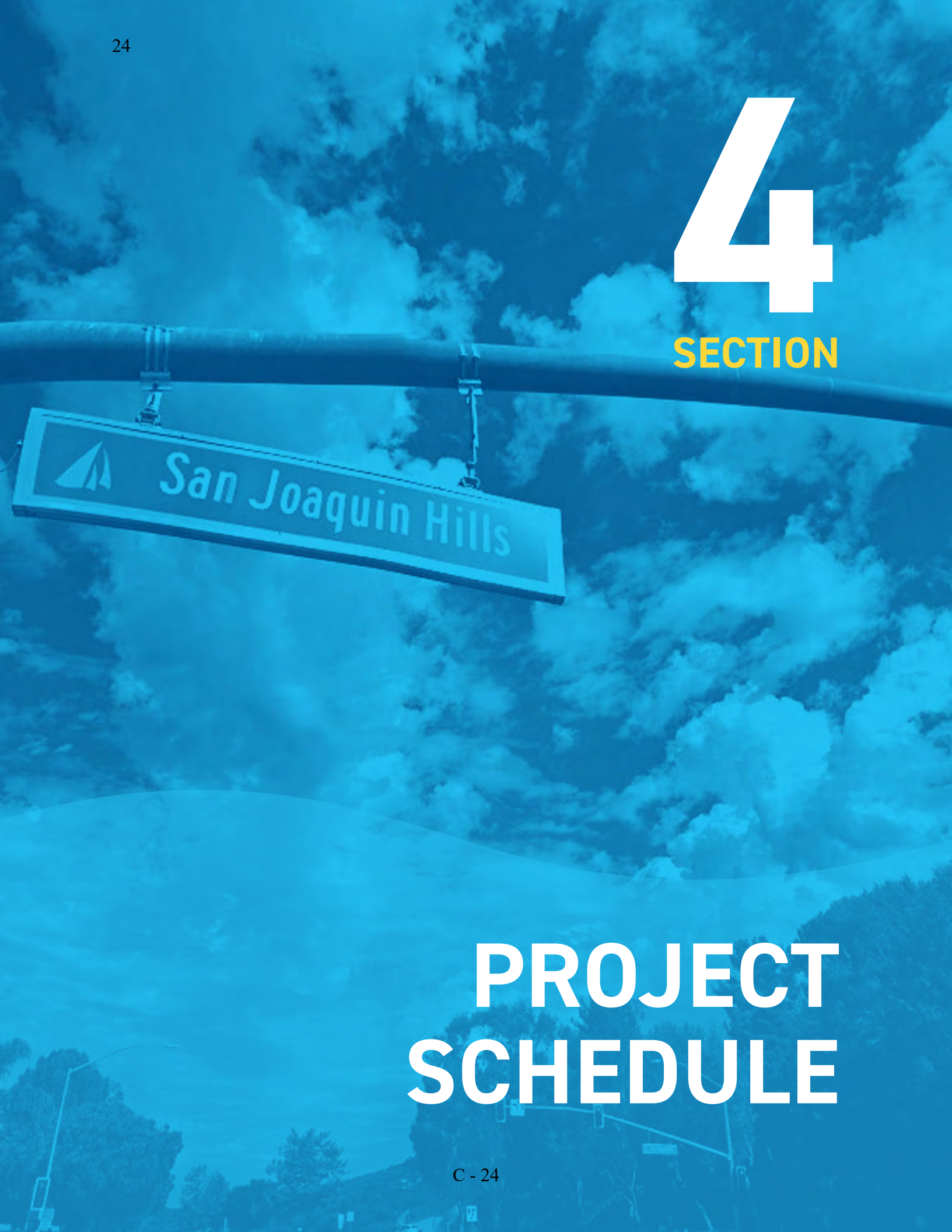
PROJECT DATES
2021–2024

FINANCIAL SIZE
$180k

Additional MKN Experience

MKN's team has delivered over 400 miles of pipeline, covering every aspect of pipeline development including conceptual planning, hydraulic modeling, alternatives analysis, condition assessment, detailed design, and construction management. Our design experience includes the full range of pipeline materials and trenchless construction methods, such as pipe bursting, horizontal directional drilling, and jack-and-bore. Additionally, the MKN team excels in developing conceptual and final designs of water system infrastructure, including pumping facilities and storage reservoirs.

Client	Project	Diameter (in.)	Material	Length (LF)
Antelope Valley/East Kern WA	95th Street East Pump Station/Turnout	20	Steel	500
Antelope Valley/East Kern WA	South Feeder Parallel Pipeline	24, 36, 48	Steel	34,320
Arvin CSD	Arvin RW Disposal Pipeline	18	PVC	18,480
California Rail Builders	North Kern WSD Canal 9-26	42	Conc/HDPE	400
Casitas MWD	Pipeline Loading Evaluation	33	Steel	NA
Casitas MWD	West Ojai Pipeline Project	8	PVC	5,600
Cayucos Sanitary District	Sewer Pipeline Improvements	8	PVC	3,500
Cayucos Sanitary District	Toro Creek Bridge Pipeline Rehab	8	PVC	100
City of Arroyo Grande	Fair Oaks Waterline Replacement Project	8	PVC	2,025
City of Fresno	Regional Transmission Mains	16-48	WSP, DIP	68,640
City of Fresno	Friant-Kern Canal Pipeline	60	WSP	26,400
City of Grover Beach	CDBG Waterline Replacement	6, 8	PVC	5,500
City of Grover Beach	CDBG Waterline Replacement	8	PVC	2,400
City of Guadalupe	Tognazzini Well Intertie	8	PVC	600
City of Modesto	Ninth Street Storm Drain Replacement	24-96	RCP/CIP	52,800
City of San Luis Obispo	Highland Waterline Replacement	24	DIP	165
East Niles CSD	Redbank Road Pipeline Project	8, 14	PVC	6,800
East Niles CSD	Pesante Sewer Replacement	8	VCP	500
East Niles CSD	Water Master Plan	12-36	NA	67,500
East Niles CSD	Morning Drive Transmission Pipe	20	Steel	5,500
East Niles CSD	Well No. 20 Flushing Pipeline Project	12	PVC	1,500
East Niles CSD	Brentwood Sewer Extension	8	VCP,PVC,HDPE	1,000
East Niles CSD	Pioneer Pipeline Project	12	PVC	1,400
East Niles CSD	Morning Drive and 178 Intertie	20	Steel	1,320
Fresno Met Flood CD	Various Flood Control Projects	18-48	RCP/CIP	21,120
Gunner Ranch	Wastewater Improvements	27, 30	PVC	21,120
Kern County Water Agency	Northwest Feeder Pump Station & Pipeline	42	Steel	21,120
Lakeside Union SD	LUSD Connection to Bakersfield	16	PVC	15,500
Las Virgenes MWD	Westlake Reservoir	30, 36	Steel	2,200
Monterey County WRA	Salinas River Diversion Facility	20, 30	WSP, DIP	10,560
Municipality of Jeddah	Urgent Works Storm Drainage Program	18-96	RCP/CIP	100+ miles
ND State Water Commission	Devils Lake Emergency Outlet	30, 54	Steel, HDPE	3,500
ND State Water Commission	Southwest Pipeline Project and Pump Station	24, 30	Steel	448,800
Nipomo CSD	Supplemental Water Project	12, 18, 24	DIP, HDPE	27,000
Nipomo CSD	Frontage Road Trunk Sewer Replacement	24	PVC	4,200
Nipomo CSD	Branch Street Water Improvements	8	PVC	2,100
Nipomo CSD	Joshua Road Booster Pump Station	24	PVC	27,000
North of the River MWD	Highland Park Improvement	8, 12	PVC	27,000
Santa Maria	WWTP Influent Piping Improvements	42, 48	HDPE	600
SLO County Flood Control	Nacimiento Water Pipeline	18-36	PVC, DIP	264,000
South Coast Water District	Via California Replacement	10	PVC	500
United Water CD	Alternatives Analysis	16	PVC	20,000
Valley Children's Hospital	VCH Rio Mesa Well & Pipeline	12	PVC	1,800
Ventura County	Potable Pipeline Project	12	PVC	20,000
Water Replenishment District	208th Street Pipelines	14, 24, 36	HDPE	2,400
Water Replenishment District	GRIP Conveyance Alternatives Analysis	42	Steel	25,000
Water Replenishment District	Brine Pipeline	16	HDPE	2,000
West Basin MWD	Palos Verdes Pipeline	10, 12	PVC	16,000



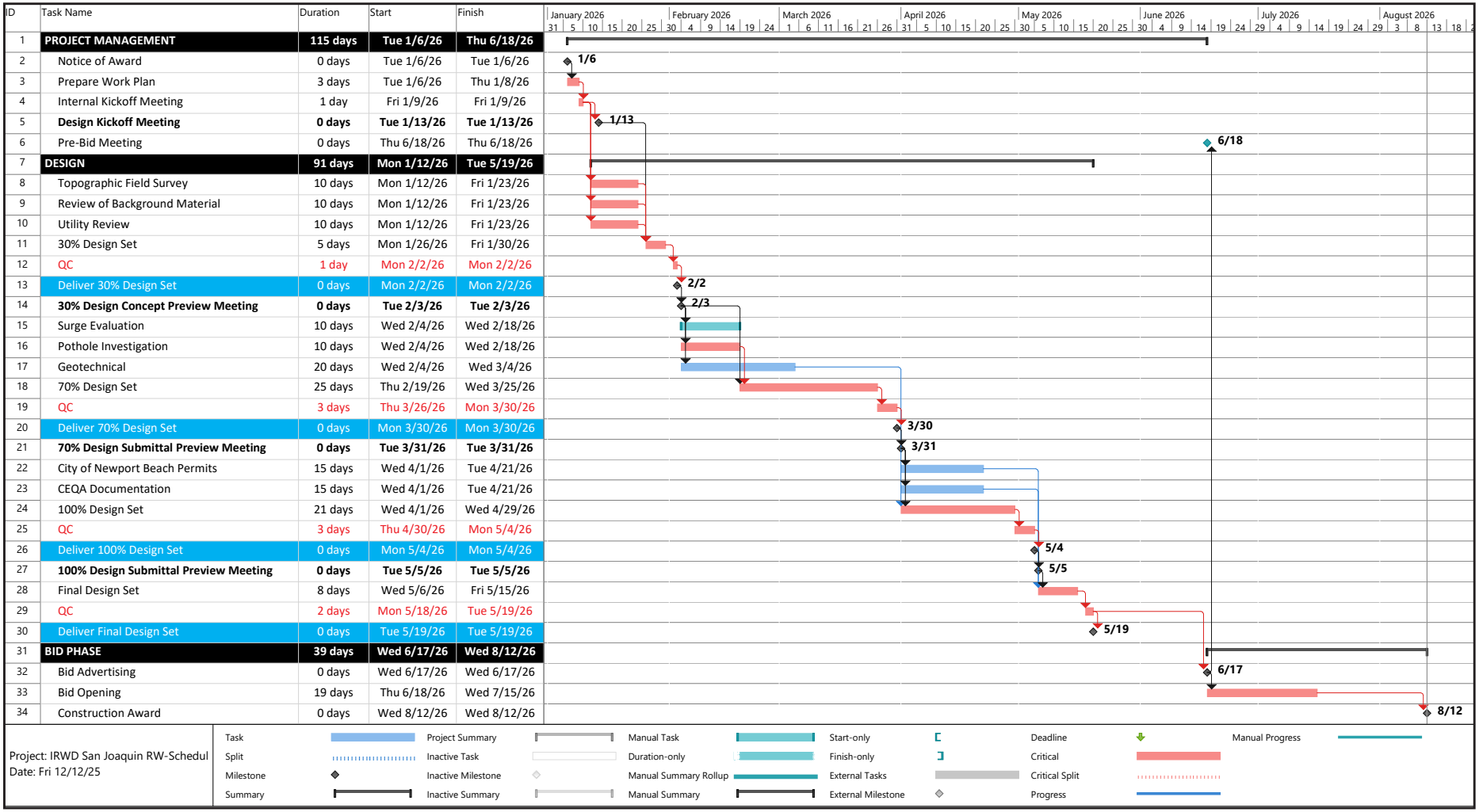
4
SECTION

PROJECT SCHEDULE

4 PROJECT SCHEDULE

MKN assures the firm's ability to complete all work, considering the firm's current and planned workload, based on the proposed schedule.

ID	Task Name	Duration	Start	Finish
1	**PROJECT MANAGEMENT**	**115 days**	**Tue 1/6/26**	**Thu 6/18/26**
2	Notice of Award	0 days	Tue 1/6/26	Tue 1/6/26
3	Prepare Work Plan	3 days	Tue 1/6/26	Thu 1/8/26
4	Internal Kickoff Meeting	1 day	Fri 1/9/26	Fri 1/9/26
5	**Design Kickoff Meeting**	**0 days**	**Tue 1/13/26**	**Tue 1/13/26**
6	Pre-Bid Meeting	0 days	Thu 6/18/26	Thu 6/18/26
7	**DESIGN**	**91 days**	**Mon 1/12/26**	**Tue 5/19/26**
8	Topographic Field Survey	10 days	Mon 1/12/26	Fri 1/23/26
9	Review of Background Material	10 days	Mon 1/12/26	Fri 1/23/26
10	Utility Review	10 days	Mon 1/12/26	Fri 1/23/26
11	30% Design Set	5 days	Mon 1/26/26	Fri 1/30/26
12	QC	1 day	Mon 2/2/26	Mon 2/2/26
13	Deliver 30% Design Set	0 days	Mon 2/2/26	Mon 2/2/26
14	**30% Design Concept Preview Meeting**	**0 days**	**Tue 2/3/26**	**Tue 2/3/26**
15	Surge Evaluation	10 days	Wed 2/4/26	Wed 2/18/26
16	Pothole Investigation	10 days	Wed 2/4/26	Wed 2/18/26
17	Geotechnical	20 days	Wed 2/4/26	Wed 3/4/26
18	70% Design Set	25 days	Thu 2/19/26	Wed 3/25/26
19	QC	3 days	Thu 3/26/26	Mon 3/30/26
20	Deliver 70% Design Set	0 days	Mon 3/30/26	Mon 3/30/26
21	**70% Design Submittal Preview Meeting**	**0 days**	**Tue 3/31/26**	**Tue 3/31/26**
22	City of Newport Beach Permits	15 days	Wed 4/1/26	Tue 4/21/26
23	CEQA Documentation	15 days	Wed 4/1/26	Tue 4/21/26
24	100% Design Set	21 days	Wed 4/1/26	Wed 4/29/26
25	QC	3 days	Thu 4/30/26	Mon 5/4/26
26	Deliver 100% Design Set	0 days	Mon 5/4/26	Mon 5/4/26
27	**100% Design Submittal Preview Meeting**	**0 days**	**Tue 5/5/26**	**Tue 5/5/26**
28	Final Design Set	8 days	Wed 5/6/26	Fri 5/15/26
29	QC	2 days	Mon 5/18/26	Tue 5/19/26
30	Deliver Final Design Set	0 days	Tue 5/19/26	Tue 5/19/26
31	**BID PHASE**	**39 days**	**Wed 6/17/26**	**Wed 8/12/26**
32	Bid Advertising	0 days	Wed 6/17/26	Wed 6/17/26
33	Bid Opening	19 days	Thu 6/18/26	Wed 7/15/26
34	Construction Award	0 days	Wed 8/12/26	Wed 8/12/26



5 SECTION

PROJECT BUDGET

5 PROJECT BUDGET

As requested in the RFP, MKN has provided an analysis of the estimated hours that each member of the project team will contribute for the individual tasks depicted in the scope of work. Also included is the identity and estimated hours and costs of all subconsultants, reproduction costs, and other direct costs.

Our billing rate schedule remains fixed through the duration of the design and bidding phases per the anticipated schedule presented in the RFP.

	Sr. Project Director	Principal Engineer/QC, Surge	Project Manager IV- Traffic	Senior Project Engineer I- PM	Project Engineer I	Plan Check Engineer II- Traffic	Assistant Engineer II	Traffic Engineering Associate I	Senior Designer	Administrative Assistant	Total Hours (MKN)	Labor (MKN)	Potholing (Boudreau)	Survey (Calvada)	Geotechnical (AESCO)	Cathodic Protection (R.F. Yeager)	Non-Labor Costs	Total Fee
Hourly Rates	$345	$ 303	$ 290	$ 250	$ 213	$ 208	$ 193	$151	$ 194	$ 119								
Task Group 1: Project Management																		
Task 1.1 Project Management (7 months, 4 deliverables)	4			30						10	44	$10,070	$ -	$ -	$ -	$ -	$0	$ 10,070
Task 1.A Meetings (Four - 2 In person, 2 Virtual)		8		8							16	$4,424	$ -	$ -	$ -	$ -	$0	$ 4,424
Task 1.B Agency Coordination				8	8						16	$3,704	$ -	$ -	$ -	$ -	$0	$ 3,704
Task 1.C Quality Assurance/Quality Control		20									20	$6,060	$ -	$ -	$ -	$ -	$0	$ 6,060
Subtotal	4	28	0	46	8	0	0	0	0	10	96	$ 24,258	$ -	$ -	$ -	$ -	$ -	$ 24,258
Task Group 2: Final Design																		
Task 2.A Project Manual				8	8		24				40	$8,336	$ -	$ -	$ -	$ -	$0	$ 8,336
Task 2.B Construction Plans (30, 70, 100, Final) - 10 Civil Sheets		16		16	40		44		140		256	$53,020	$ -	$ -	$ -	$ -	$0	$ 53,020
Task 2.B-1 Review of Background Material				4	10		8				22	$4,674	$ -	$ -	$ -	$ -	$0	$ 4,674
Task 2.B-2 Topographic Field Survey				1			2		4		7	$1,412	$ -	$42,317	$ -		$42,317	$ 43,729
Task 2.B-3 Utility Review				4	10		8		16		38	$7,778	$ -	$ -	$ -	$ -	$0	$ 7,778
Task 2.B-4 Pothole Investigation				1			4				5	$1,022	$62,002	$ -	$ -	$ -	$62,002	$ 63,024
Task 2.B-5 CP System Evaluation		2		4	4						10	$2,458	$ -	$ -	$ -	$37,147	$37,147	$ 39,605
Task 2.C Traffic Control Plans (70 & Final)			20			50		160			230	$40,360	$ -	$ -	$ -	$ -	$0	$ 40,360
Task 2.D Geotechnical				4	8						12	$2,704	$ -	$ -	$35,584	$ -	$35,584	$ 38,288
Task 2.E Permits		2		6	12						20	$4,662	$ -	$ -	$ -	$ -	$0	$ 4,662
Task 2.F Project Schedule				8			12				20	$4,316	$ -	$ -	$ -	$ -	$0	$ 4,316
Task 2.G CEQA Documentation				2			8				10	$2,044	$ -	$ -	$ -	$ -	$0	$ 2,044
Task 2.H Liquidated Damages Calculations				4	4						8	$1,852	$ -	$ -	$ -	$ -	$0	$ 1,852
Task 2.I Opinion of Probable Construction Cost				4	8		10				22	$4,634	$ -	$ -	$ -	$ -	$0	$ 4,634
Task 2.J Design Deliverables							14		4		18	$3,478	$ -	$ -	$ -	$ -	$0	$ 3,478
Task 2.K-1 Plan Revisions (8 hrs.)				2					6		8	$1,664	$ -	$ -	$ -	$ -	$0	$ 1,664
Task 2.K-2 Project Manual Specification Revisions (8 hrs.)				2	6						8	$1,778	$ -	$ -	$ -	$ -	$0	$ 1,778
Task 2.K-3 Bidder Questions (4 hrs.)		1		3							4	$1,053	$ -	$ -	$ -	$ -	$0	$ 1,053
Task 2.K-4 Pre-Bid Meeting & Site Visit				4							4	$1,000	$ -	$ -	$ -	$ -	$0	$ 1,000
Subtotal	0	21	20	77	110	50	134	160	170	0	742	$148,245	$62,002	$42,317	$35,584	$37,147	$ 177,049	$ 325,294
TOTAL BUDGET	4	49	20	123	118	50	134	160	170	10	838	$172,503	$62,002	$42,317	$35,584	$37,147	$ 177,049	$ 349,552

2026 FEE SCHEDULE

CATEGORY	POSITION	HOURLY RATE
Communications and Administrative	Administrative Assistant	$119
	Strategic Communications Coordinator	$132
	Strategic Communications Specialist	$176
Designers and Technicians	CAD Technician I	$160
	CAD Design Technician II	$182
	Senior Designer	$194
Planning	Assistant Planner I	$173
	Assistant Planner II	$193
	GIS Specialist	$193
	Planner I	$213
	Planner II	$229
	Senior Planner	$258
Engineers	Engineering Technician	$129
	Assistant Engineer I	$173
	Assistant Engineer II	$193
	Project Engineer I	$213
	Project Engineer II	$229
	Senior Engineer I	$250
	Senior Engineer II	$264
	Senior Engineer III	$280
	Principal Engineer	$303
	Principal Electrical Engineer	$303
Project Management	Project Manager	$269
	Senior Project Manager	$280
	Project Director	$328
	Senior Project Director	$345
Construction Management Services	Scheduler	$188
	*** Construction Inspector	$210
	Assistant Resident Engineer	$210
	Resident Engineer	$223
	Construction Manager	$243
	Principal Construction Manager	$286

The foregoing Billing Rate Schedule is effective through December 31, 2026 and will be adjusted each year after at a rate of 2 to 5%.

DIRECT PROJECT EXPENSES

Outside Reproduction	Cost + 10%
Subcontracted or Subconsultant Services	Cost + 10%
Travel & Subsistence (other than mileage)	Cost
Auto Mileage	Current IRS Rate

*** 40 hrs per week assumed; part-time rates can be provided upon request
Rates also subject to prevailing wage mandatory increases during a calendar year

January 20, 2026
Prepared by: M. Alvarez / B. Waite
Submitted by: K. Burton
Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

COASTAL ZONES B & D AND COASTAL ZONE OC-63 TO ZONE 4 PUMP STATIONS
BUDGET INCREASE, BUDGET ADDITION AND CONSULTANT SELECTION

SUMMARY:

IRWD is undertaking the Coastal Zones B & D and Coastal Zone OC-63 to Zone 4 Pump Stations Rehabilitation project to address aging, unreliable, and obsolete electrical, controls, and communications infrastructure at these critical facilities. The project will improve long-term reliability and maintainability by increasing the useful life of these pump stations.

Staff recommends that the Board:

- Authorize a budget increase for Project 11568 in the amount of $4,556,000, from $2,237,000 to $6,793,000;
- Authorize the addition of Project 13506 to the Fiscal Year (FY) 2025-26 Capital Budget in the amount of $3,613,000; and
- Authorize the General Manager to execute a Professional Services Agreement with Carollo Engineers, Inc. in the amount of $980,381 for engineering design services for the Coastal Zones B & D and Coastal Zone OC-63 to Zone 4 Pump Stations project.

BACKGROUND:

The Coastal Zones B & D and Coastal Zone OC-63 to Zone 4 Pump Stations are critical facilities that convey recycled and domestic water, respectively, to IRWD's coastal pressure zones. The Zones B & D pump stations share a common building and are co-located on the same site adjacent to the OC-63 to Zone 4 pump station within the City of Irvine. The pump station complex consists of three pump stations: Zone A to B, Zone B to D (recycled water), and OC-63 to Zone 4 (domestic water). All three facilities must remain in service to the maximum extent practicable during construction.

The electrical distribution and utilization equipment at the pump stations is approaching 35 years of service. Preventive maintenance performed in 2020 identified several components that either failed or marginally passed electrical testing, raising reliability concerns and indicating the need to replace major electrical equipment and upgrade the instrumentation, controls, and communications systems. The project scope includes replacement of switchboards, motor control equipment, programmable logic controllers (PLCs), and associated wiring; upgrades to utility service equipment in coordination with Southern California Edison (SCE); and installation of a new communications tower approximately 40 feet tall. In addition, the project includes a condition assessment of key mechanical systems, including pumps, surge vessels, valves, and piping to confirm rehabilitation or replacement needs and extend the service life of the facilities.

A primary project constraint is limiting pump station outages to maintain continuous operations to the extent practicable through detailed construction sequencing, temporary power provisions, and close coordination between IRWD staff and SCE. The selected consultant will prepare bid-ready construction documents along with supporting construction cost estimate and schedule in accordance with District standards.

Consultant Selection Process:

Staff issued a Request for Proposals for engineering design services to eight design firms, including AECOM, AKM, Brown and Caldwell, Carollo, Jacobs, MKN, SPEC Services, and Tetra Tech. Proposals were received from AECOM, Carollo and SPEC Services. The remaining firms declined to submit proposals citing workload and schedule constraints.

Both AECOM and Carollo submitted high quality proposals that meet the project objectives and goals. Following the interviews with both firms, staff determined that Carollo's project approach and team will provide the greatest overall value to the District. Carollo presented a clear and well-defined construction sequencing plan, including sequencing of the control system replacement, demonstrating a strong understanding of the District's operational constraints and the need to minimize outages. In addition, Carollo demonstrated a thorough understanding of the scope of work, supported by an appropriate list of drawings and specifications and a reasonable level of effort for each task. The consultant selection matrix is attached as Exhibit "A", and Carollo's scope of work and fee proposal are attached as Exhibit "B".

Staff recommends that the Board authorize the General Manager to execute a Professional Services Agreement with Carollo in the amount of $980,381 for engineering design services for the Coastal Zones B & D and Coastal Zone OC-63 to Zone 4 Pump Stations project.

FISCAL IMPACTS:

The Coastal Zones B & D and Coastal Zone OC-63 to Zone 4 Pump Stations, Project 11568, is included in the FY 2025-26 Capital Budget, and is funded by the recycled water replacement. A budget increase is requested to fund the design and anticipated construction cost of the recycled water facilities. Staff also requests the addition of Project 13506 to the FY 2025-26 Capital Budget to fund the design and anticipated construction cost of the domestic water facilities using domestic water replacement funds. The requested budget increase and the budget addition are as follows:

Project No.	Current Budget	Addition <Reduction>	Total Budget
11568	$2,237,000	$4,556,000	$6,793,000
13506	$0	$3,613,000	$3,613,000

ENVIRONMENTAL COMPLIANCE:

This project is subject to the California Environmental Quality Act. In conformance with the California Code of Regulations Title 14, Chapter 3, Section 15004, the appropriate environmental document will be prepared when "meaningful information" becomes available.

RECOMMENDATION:

That the Board authorize a budget increase to the Fiscal Year 2025-26 Capital Budget for Project 11568 in the amount of $4,556,000, from $2,237,000 to $6,793,000; authorize the addition of Project 13506 to the Fiscal Year 2025-26 Capital Budget in the amount of $3,613,000; and authorize the General Manager to execute a Professional Services Agreement with Carollo Engineers, Inc. in the amount of $980,381 for engineering design services for the Coastal Zones B & D and Coastal Zone OC-63 to Zone 4 Pump Stations, Projects 11568 and 13506.

LIST OF EXHIBITS:

Exhibit “A” – Consultant Selection Matrix
Exhibit “B” – Scope of Work and Fee Proposal

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CONSULTANT SELECTION MATRIX

Coastal Zones Pump Stations								
Item	Description	Weights	AECOM		Carollo		SPEC Services	
A	TECHNICAL APPROACH							
1	Project Understanding and Approach	25%	2		1		3	
2	Related Project Experience	20%	1		2		3	
3	Project Team and Staff Qualifications	20%	1		2		3	
4	Scope of Work	25%	2		1		3	
5	History of Performance	10%	2		1		3	
	Weighted Score		1.6		1.4		3.0	
	Ranking of Consultants		**2**		**1**		**3**	
B	SCOPE OF WORK							
TASK	DESCRIPTION		Task Hours	Fee	Task Hours	Fee	Task Hours	Fee
1	**Project Management**		830	**$253,948**	304	**$91,892**	253	**$57,443**
2	**Preliminary Design**		998	**$284,340**	1,271	**$383,227**	815	**$161,954**
3	**Final Design**		2739	**$607,353**	1,777	**$469,818**	1,508	**$279,780**
4	**Bid Support**		196	**$49,358**	132	**$35,444**	44	**$8,954**
	TOTAL ENGINEERING SERVICES FEE WITHOUT OPTIONAL TASKS		4,763	**$1,194,999**	3,484	**$980,381**	2,620	**$557,520**
C	OTHER							
	Technical Drawings							
	Total Sheets		56	dwgs	99	dwgs	39	dwgs
	Personnel							
	Role		**Years of Experience**		**Years of Experience**		**Years of Experience**	
	Project Manager		Jay Jayakumar	41	Marissa Petty	17	Luis Soto	18
	Design Manager/Project Engineer		Allen Randall	54	Mark Seal	12	Justin Todd	12
	Electrical		Tony Cortez	29	Ryan Fuentes	2	Long Pham	35
	Civil/Mechanical		James Fuchs	11	Andrew Frost	17	Dennis Schieber	29
	Instrumentation/Controls		Lawrence Pendergast	42	Jack White	4	-	
	Sub Consultants							
	Geotechnical		-		Geocon West, Inc.		Ninyo & Moore	
	Communications		-		Applied Technology Group, Inc.		-	
	Survey		-		-		Calvada Surveying, Inc.	
	Insurance							
	General Liability		Yes		Yes		Yes	
	Automobile		Yes		Yes		Yes	
	Workers' Compensation		Yes		Yes		Yes	

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Exhibit "B"

PREPARED FOR IRVINE RANCH WATER DISTRICT

Engineering Design Services for Coastal Zones B&D and Coastal Zone OC-63 to Zone 4 Pump Station Rehabilitation Project

PROPOSAL / DECEMBER 2025

carollo®

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– Team's Availability

– Level of Effort

– Insurance Certificate

– Resumes

Scope

The following represents our understanding of the Scope of Services and is the basis for our level of effort and fee estimates.

Task 1 – Project Management

This task includes all aspects of project management including managing scope, schedule, budget, preparing progress reports and attending meetings. Under this task, we will implement an effective quality assurance/quality control (QA/QC) program. We will organize, attend, and conduct required meetings.

TASK 1 – DELIVERABLES

- **Meeting agendas for each meeting:** Submitted as a PDF document to IRWD at least 5 days before the meeting.
- **Meeting minutes for each meeting:** Submitted to IRWD within 3 working days after each meeting by email with a PDF attachment.
- **Weekly project status reports:** Each report will consist of a brief email summarizing the activities completed the previous week, the activities planned for the upcoming week, and critical decisions that must be made.
- **Monthly status report with invoices:** Each report will consist of a detailed summary of the activities completed the previous month, the activities planned for the upcoming month, and critical decisions that need to be made. The report will be submitted along with the billing invoice for that month and will review work status relative to budget and schedule. The project design schedule will be updated monthly for inclusion in the monthly status report.

TASK 1 – ASSUMPTIONS

- Meetings shall include:
  - **Kickoff meeting:** One 2-hour meeting. In person. 2 Attendees.
  - **Monthly progress meetings:** Twelve 1-hour meetings. Virtual. 2 Attendees.
  - **Meetings with jurisdictional agencies and project stakeholders including SCE:** Two 2-hour meetings. Hybrid. 2 Attendees.
  - **Site visits:** Three 2-hour visits. In-person. 3 Attendees.
  - **Technical memorandum (TM) technical progress meetings:** Three 1-hour meetings. Virtual. 2 Attendees.
  - **Draft preliminary design report walkthrough meeting:** One 2-hour workshop. Virtual. 3 Attendees.
  - **Technical focus meetings:** Four 1-hour meetings. Virtual. 2 Attendees.
  - **Draft preliminary design report comment review meeting:** One 2-hour meeting. Hybrid. 3 Attendees.
  - **60% Draft submittal presentation:** One 2-hour meeting. Virtual. 3 Attendees.
  - **60% Draft submittal comment review meeting:** One 2-hour meeting. Hybrid. 3 Attendees.
  - **90% Design submittal presentation:** One 2-hour meeting. Virtual. 3 Attendees.
  - **90% Design submittal comment review meeting:** One 2-hour meeting. Hybrid. 3 Attendees.
  - **100% Design submittal comment review meeting:** One 2-hour meeting. Hybrid. 3 Attendees.
- Hybrid meetings will include up to 2 in-person personnel.
- The design schedule shall include all critical factors impacting the project design schedule including implementation, permitting, and coordination activities to make sure that the project is completed in accordance with the proposed schedule. The design schedule shall be prepared in Microsoft Project.

Value Add:

Pre-bid meeting: One 2-hour meeting. In-person. 2 Attendees.

Task 2 – Preliminary Design

This task includes 1) a condition assessment of the mechanical equipment and 2) preliminary design of electrical and controls infrastructure improvements. **The preliminary design will include:**

- **Background information research:** A review of existing reports, record drawings, and other reference documents will be done. After the background review, a meeting will be held to kick off the preliminary design. The meeting will focus on impacts to existing electrical infrastructure, site constraints, facility considerations, and overall sequencing.

- **Coordination with outside agencies:** Carollo will identify all required permits for the project and prepare applications and secure all permits, including Southern California Edison (SCE), Federal Aviation Administration (FAA), and Federal Communications Commission (FCC). As part of the task, Carollo will also coordinate efforts necessary to communicate the proposed Project design, address any comments from the SCE, FAA, FCC, and other appropriate agencies. All permit requirements will be integrated into the project design.
- **Condition assessment:** A desktop study and site field investigation of the mechanical equipment at both pump stations which will include evaluating existing piping, valves, surge tanks, and associated appurtenances to determine if any equipment needs to be upgraded. The desktop study will include review of operational and maintenance historical data including review of the pump curves and original design operating point(s). Carollo will include recommendation(s) to either replace or rehabilitate mechanical equipment. If a pump evaluation is recommended, Carollo will identify certified repair shop(s) to pull an existing pump and conduct a thorough inspection of the mechanical equipment.
- **Electrical and controls:** Develop electrical, instrumentation, and controls design requirements associated with the proposed improvements, which may include:
  - » Replacement of existing Switchboard (SWBD-R), SWBD-D, Reduced Voltage Starters Section (RVNRS-R), RVNRS-D, Motor Control Center (MCC-R), and MCC-D which includes existing breakers, motor starters, controls, protective relaying and power quality monitoring.
  - » Replacement of existing Uninterruptible Power Supply (UPS) battery system.
  - » Replacement of existing PLCs and providing additional spare input/output (I/O) points.
  - » NEC and NFPA Code Compliance evaluation including addressing arc flash concerns.
  - » Coordination with SCE to confirm feasibility of potential relocation of the main feeder breaker.
  - » Implementation plan to determine overall sequencing of work and phasing. Work restrictions and temporary power requirements shall be identified.
  - » Evaluation of building improvements needed to bring electrical buildings up to current building codes.
  - » Evaluation of the potential relocation of the existing generator breaker to outside of the electrical building.
  - » Evaluate upgrading portable generator power connection to handle starting 3 to 4 pumps.
  - » Evaluation of replacing existing conduit or wiring throughout the site necessary to implement electrical and control improvements.
- **Pre-procurement package:** Develop pre-procurement technical specifications and drawings for long lead electrical equipment. Carollo will review the pre-procurement submittals.
- **Communications:** Develop requirements for a 40-foot-tall tower for communications.
  - » **Site layout:** Prepare site layout showing existing facilities, proposed tower and pole, and any necessary site improvements.
  - » **Structural:** Provide structural analysis, seismic and wind load analysis, and design recommendations for the tower supports and foundations.
  - » **Geotechnical:** Perform geotechnical investigations to determine existing soil properties and conditions, and groundwater levels. A geotechnical report shall be provided detailing soil investigations, analysis, conclusions, and recommendations for any earthwork operations required to provide foundational support of the tower and appurtenant equipment pad.
  - » **Safety:** Incorporate CalOSHA design requirements and guidelines in the tower's ladder and fall protection design. Ladder access shall incorporate a deterrent mechanism to prevent unauthorized access.
- **Project schedule:** Carollo will prepare a project schedule that details design and construction activities. The schedule will include estimated design, bid, and construction phases, Carollo's notice of award and notice to proceed, review and acceptance of Carollo's submittals, estimated delivery of critical materials and equipment based on vendor proposals for major equipment, IRWD's holidays, and construction closeout.
- **Opinion of probable construction cost (OPCC):** A cost estimate will be prepared for the proposed improvements.
- **Preliminary design report:** All work in Task 2 will be summarized and compiled into a Preliminary Design Report (PDR). The PDR will include technical memoranda (TMs), preliminary drawings and diagrams including Single Lines and P&IDs, preliminary construction schedule, OPCC along with an anticipated list of final design drawings and technical specifications as appendices.

TASK 2 – DELIVERABLES

- Three (3) hard copies of Draft TMs and one (1) electronic copy in PDF will be submitted for review. Upon resolution and incorporation of review comments, three (3) hard copies of the final TMs and one (1) electronic copy in PDF will be submitted. **TMs will include:**
  - » TM-1 condition assessment.
  - » TM-2 relevant project codes, standards and SCE requirements.
  - » TM-3 replacement work: Design criteria, preliminary sizing, preliminary layouts, and generator breaker relocation evaluation.
  - » TM-4 implementation plan: Temporary power and overall sequencing of the proposed electrical and controls work, associated costs for implementation alternatives, and preliminary work restrictions.
- Three (3) hard copies of Draft PDR and one (1) electronic copy in PDF will be submitted for review. Upon resolution and incorporation of review comments, three (3) hard copies of the final PDR and one (1) electronic copy in PDF will be submitted.
- Project schedule and OPCC.
- Draft pre-procurement technical specifications and drawings for long lead electrical equipment in searchable PDF format. Upon resolution and incorporation of review comments, final pre-procurement technical specifications and drawings for long lead electrical equipment will be provided in searchable PDF format.
- Submittal review comments.

TASK 2 – ASSUMPTIONS

- A pump evaluation is not included in the scope of work. If a pump evaluation is ultimately needed, this would be completed in parallel with the Electrical and Controls work to mitigate project delays associated with long lead times of electrical equipment.
- Repair and replacement of equipment and infrastructure identified in the condition assessment are not included in the scope of work.
- The PDR will be finalized with the 60% design deliverable.

Task 3 – Final Design

This task includes the preparation of a final design and 60%, 90%, 100%, and final submittals. Work performed will conform to the District standards and requirements including, but not limited to, the District Project Manual and Construction Manual, and all applicable codes (e.g., NEC and CEC).

The final design will include:

- **Project Manual:** The manual will be in standard District format and will use the District's front end documents. Carollo will determine any needed supplemental special provisions that should be added to comply with the District's general provisions and front end requirements. The Project Manual will describe the work, schedule, constraints, necessary temporary provisions, maximum shutdown durations, coordination requirements with operations staff, and possible sequencing associated with the work. Project Manual will also include general technical specifications, modifications thereto, and any project technical specifications.
- **Instrumentation and control strategies:** Carollo will prepare an operational scheme including P&IDs, single line diagrams, control equipment list, control loop descriptions, and a method of integrating the proposed facilities into IRWD's existing SCADA system. Prior to this process, Carollo will meet with IRWD's electrical/automation staff to incorporate IRWD's standard operations, programming, and tagging requirements into the design. Carollo will develop and provide the control strategies in "plain English".
- **SCE final service plan:** This task includes coordination efforts necessary to communicate the project requirements and address any comments from SCE to obtain SCE's approval for the proposed electrical services at the site. The final service plan will be obtained and inserted in the appendix of the Project Manual.
- **OPCC:** The preliminary construction cost opinion will be updated as the project progresses and will be provided with each final design submittal. The format for the cost opinion will follow the itemized schedule of work in the bid documents of the Project Manual.

TASK 3 – DELIVERABLES

- **60% Draft submittal:** 60% Drawing set (100% P&IDs) and 60% Project Manual, in searchable PDF format.
- **90% Design submittal:** 90% Drawing set and 90% Project Manual that has been QA/QC'd by Carollo. Sets will be substantially complete. Searchable PDF files of the drawings and Project Manual will be submitted.
- **100% Design submittal:** 100% Drawing set and 100% Project Manual that has been QA/QC'd by Carollo. Searchable PDF files of the drawings and Project Manual will be submitted.
- **Final design submittal:** The final drawing and Project Manual draft set will be backchecked for inclusion of all previous comments, with Carollo's project manager's electronic stamp and signature added. Once the submittal is reviewed and minor comments are addressed by Carollo, the final design submittal set will be submitted to

be signed by the District. We will provide AutoCAD files for the entire drawing set once signed by the executive director. Searchable PDF files of the drawings and Project Manual will be submitted. The Project Manual will also be submitted in Microsoft® Word format. One (1) hard copy of the drawings in half-size (11x17) and Project Manual will be provided after backcheck is complete and signed by IRWD's executive director.

- **Project schedule for each deliverable**: OPCC with cost variance report that includes a detailed breakdown of cost changes along with reasons behind significant changes shall be provided at each design submittal phase starting with the 60% design.

TASK 3 – ASSUMPTIONS

- Project schedule will include design, bid, and construction phases, Carollo's notice of award and notice to proceed, review and acceptance of Carollo's submittals, delivery of critical materials and equipment, IRWD's holidays, and construction closeout.

Task 4 – Bid Support

- **Addenda preparation and pre-bid meeting:** During the bidding period, Carollo will assist by providing information and clarification of bid documents to prospective bidders and attend the pre-bid meeting. This effort will include the preparation of an addendum for bidding, including revisions to the design plans and specifications, and assistance in addressing bidder questions.
  - » **Conformed drawings and Project Manual:** After the bid period, Carollo will prepare a Conformed Drawing set which includes any revisions to the drawings as well as a Conformed Project Manual which includes any revisions to the project technical specifications.
  - » **Post-bid evaluation:** If the lowest bidder exceeds Carollo's OPCC estimate by 10%, Carollo will be required to conduct a confidential bid evaluation within two weeks from the bid due date. This evaluation should include a detailed analysis of the deviation, providing insights into the variance.

TASK 4 – DELIVERABLES

- Addendum.
- Conformed drawings and Project Manual.
- Post-bid evaluation (if applicable).

TASK 4 – ASSUMPTIONS

- Three addenda will be provided.
- Twenty-four hours are budgeted for plan revisions to construction drawings.
- Eight hours are budgeted for revisions or additions to the project specifications.
- Twelve hours are budgeted to address and respond to bidder questions.
- Eight hours are budgeted for 2 attendees to prepare for and attend the pre-bid meeting.

General Assumptions

- IRWD shall furnish Carollo available studies, reports and other data pertinent to our services; obtain or authorize Carollo to obtain or provide additional reports and data as required; furnish to Carollo services of others required for the performance of Carollo's services hereunder, and Carollo shall be entitled to use and rely upon all such information and services provided by IRWD or others in performing our services under this Agreement.
- Carollo has no control over the cost of labor, materials, equipment or services furnished by others, over the incoming water quality and/or quantity, or over the way IRWD's plant and/or associated processes are operated and/or maintained. Data projections and estimates are based on Carollo's experience and judgment. Carollo cannot and does not guarantee that actual costs and/or quantities realized will not vary from the data projections and estimates prepared by us and Carollo will not be liable to and/or indemnify IRWD and/or any third party related to any inconsistencies between our data projections and estimates and actual costs and/or quantities realized by IRWD and/or any third party in the future, except to the extent such inconsistencies are caused by Carollo's negligent performance hereunder.
- The services to be performed by Carollo are intended solely for the benefit of IRWD. No person or entity not a signatory to this Agreement shall be entitled to rely on Carollo's performance of its services hereunder, and no right to assert a claim against Carollo by assignment of indemnity rights or otherwise shall accrue to a third party as a result of the project Agreement or the performance of Carollo's services hereunder.
- The Project Manual will be provided in flattened PDF, including page labels, bookmarks, searchable text, and hyperlinks. Microsoft® Word format files used in the preparation of the Project Manual will be provided.
- Detailed construction drawings as part of the Contract Documents will be provided in the latest version of AutoCAD and using National CAD Standards (NCS)

Version 4.0 layering standards, on 22-inch x 34-inch sheets utilizing IRWD's standard border template. Separate sheets with sheet index/location map/ legend, general notes, index map, construction notes, phasing, and details shall be included. Construction notes shall be used (callouts on the drawings are not allowed) on all construction drawings. The index map shall include sheet legend, surrounding streets, and significant project site locations.

- All formal deliverables and design submittals will be uploaded and reviewed using a Bluebeam Revu Studio Sessions per IRWD guidelines and standards.
- Documentation indicating that QA/QC measures were performed will be available upon request. The documentation shall identify by name the individuals involved with the QA/QC efforts.
- The construction schedule will include major construction activities, interim and major milestones, sequencing and work restrictions and take into account submittals, equipment fabrication lead times, permitting, etc. The construction schedule shall be prepared in Microsoft Project.

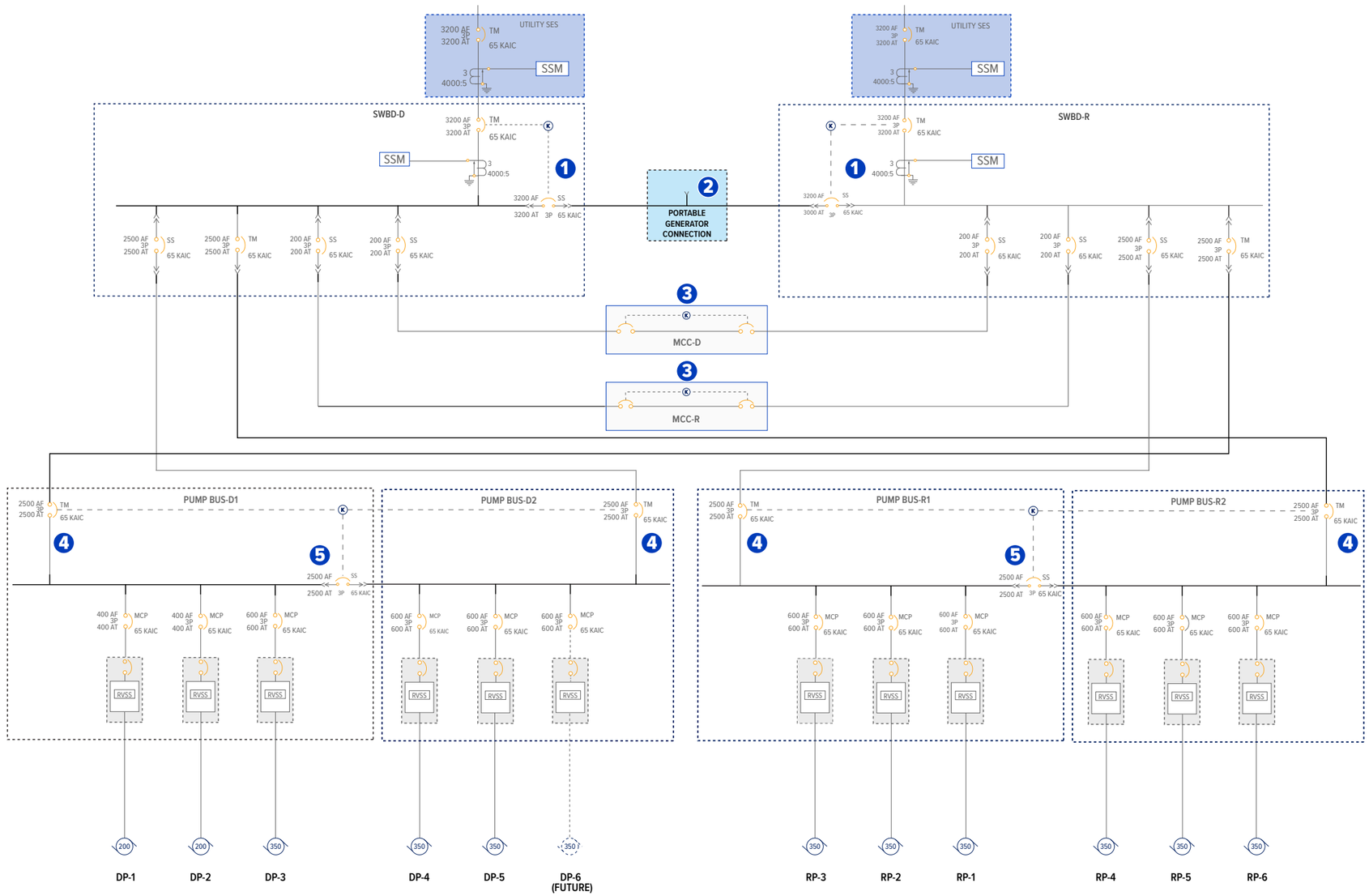
Understanding and Approach

We will work with the District to develop an updated electrical distribution system enhancing redundancy to provide greater flexibility for maintenance and repairs and a comprehensive temporary power phasing plan minimizing the amount of time the pump stations are offline.

Electrical Distribution Redundancy Improvements

The electrical replacements at these critical pump stations should be evaluated for more than just one-for-one replacements, redundancy improvements options should be considered as part of the replacement. Carollo will support the District to determine the "right" level of redundancy needed for the pump stations through option development, cost comparison, and risk evaluations. We have provided a preliminary overall one-line diagram for the pump stations with redundancy improvement options.

1. Tie-breakers between the pump station SWBDs to allow both utility feeds to be utilized for either pump station.
2. A fully rated portable generator connection allows a larger portable generator or generators operating in parallel to feed additional pumps at both pump stations simultaneously.
3. Separate equipment and dual power feeds for the common building power loads (i.e. lights, receptacles, HVAC, UPS, etc.) to keep the loads powered regardless of system configuration and limit the needed outage time during maintenance/repairs.
4. Split pumps between two MCCs with dual power feeds from different sources to limit the number of pumps offline during maintenance/repairs.
5. Add a tie breaker to allow all pumps to be powered even with one SWBD out of service.



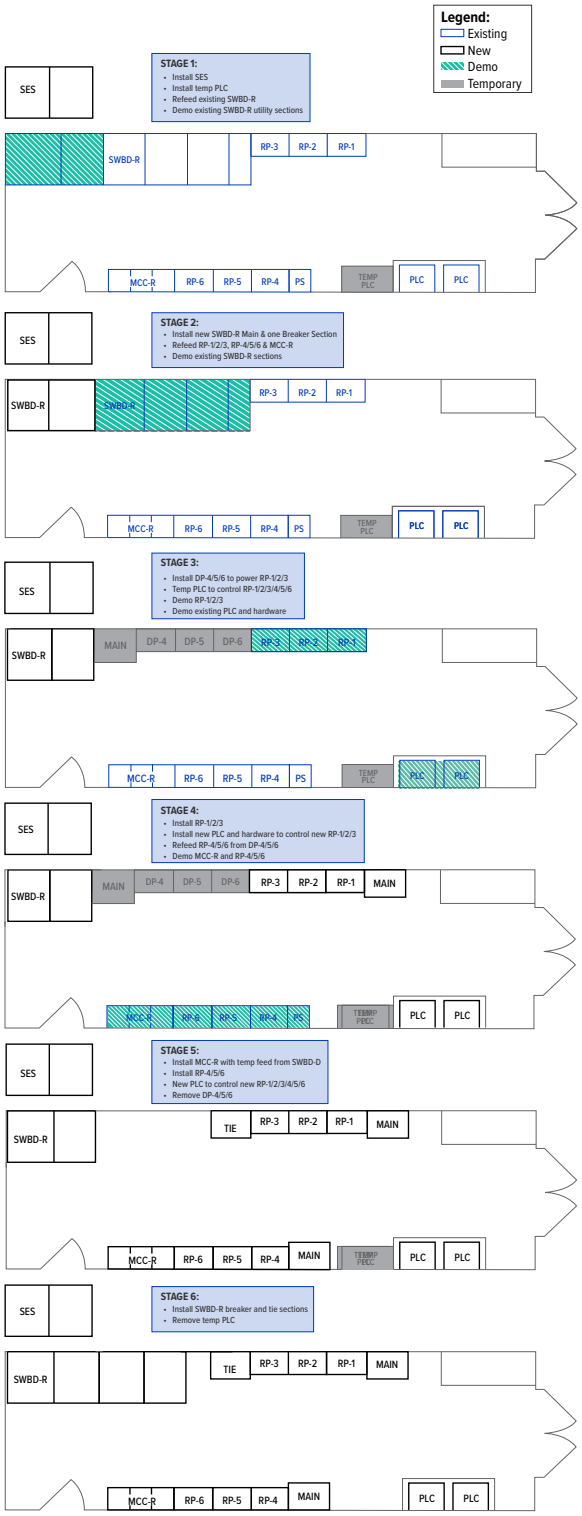
Pump Station Preliminary One-Line with Redundancy Options

We will work with the District to further develop options to select the "right" electrical distribution system that meets the District's specific redundancy needs for the pump stations.

Temporary Power Phasing Plan

Our temporary power phasing plan includes the following key elements:

- Detailed sequencing.
- Equipment selection.
- Temporary equipment.
- Re-using existing conduits.



Detailed Sequencing

Clearly defining the sequencing in the Contract Documents provides more consistent contractor bidding and enforceable requirements during construction to minimize downtime and reduce change orders related to temporary power requirements. We have included a potential sequence for the Coastal Zones B&D Pump Station, as this pump station has less available space to locate temporary equipment in the electrical room, which will result in a more challenging sequence. The same concepts can be used for the OC-63 to Zone 4 Pump Station. This sequence can be refined with the District to achieve a cost-effective solution that minimizes downtime.

Equipment Selection

The District already understands the need for pre-procurement of long lead electrical equipment, but the pre-procurement process can also be utilized to perform a value-based selection of the equipment. Where manufacturers can meet certain footprint and conduit entry constraints, the added costs can be offset by other cost savings, such as being able to re-use existing conduit and/or fit better in existing space. Additionally, having the equipment dimensions defined before completing the final design allows the room layout and sequencing to be better defined in the Contract Documents.

Temporary Equipment

Utilizing the new or existing equipment to provide temporary power will limit the temporary power costs on the project and will reduce risk. **This includes the following:**

- The new and existing equipment is already designed for the pump stations.
- Unforeseen schedule extensions will not result in extended rental costs if temporary equipment is rented.
- Purchasing new or used equipment (that will likely need to be modified) for temporary equipment will increase costs.

Coastal Zones B&D Pump Station Preliminary Detailed Sequencing Plan

The proposed sequencing limits complete pump station outages to approximately 8 hours to move cables between existing, temporary, and new equipment and/or disconnect/connect sections of equipment. We will work with the District to further develop these sequencing concepts to fit operational constraints.

The first pump station to be upgraded can utilize one of the new MCCs for temporary power and the second pump station to be upgraded can utilize one of the existing MCCs for temporary power. The temporary equipment is critical in minimizing downtime, as both the new and equipment can be installed simultaneously and outages will be limited to short durations that move cables between existing, temporary, and new equipment and/or disconnect/connect sections of equipment.

Re-using Existing Conduits

Installing new exposed conduit in the pump room that does not conflict with the bridge crane will likely increase conduit length, introduce tripping hazards, and ultimately increase overall costs and schedule. We will work with the District to develop phasing plans that strategically re-use conduits where possible and preserve equipment access.

PLC Improvements

The PLCs at both pump stations have reached the end of their useful lives and will be replaced to conform to current District standards as part of this project. Both of the current PLC panels have minimal space to install new equipment, with field wiring in conduits that enters through the bottom of the panels and is embedded in the concrete foundation. To maximize the limited space in the station electrical rooms and avoid the risk of cost and schedule impacts from installing new wiring and conduits from the new station PLCs to every device, we will use the existing PLC panels, wiring, and conduits to the fullest extent possible.

Additionally, to minimize downtime and reduce risk, a temporary PLC will be used to maintain operations while new PLCs and hardware are installed. The sequencing of the PLC hardware replacement will coincide with the electrical upgrades to minimize process disruptions. The same temporary PLC can be utilized for both Zones B&D Pump Station and OC-63 to Zone 4 Pump Station.

The first pump station to be upgraded will utilize a new temporary PLC panel that will be located near the current PLC panel to provide continuous station control while the old PLC and associated hardware are replaced. When the temporary PLC has been installed, station control will be migrated from the old PLC to the temporary PLC and tested for functionality. Once the temporary PLC has been commissioned, the old PLC and hardware will be removed and replaced. When the new PLC and hardware have been installed, station control will be migrated from the temporary PLC to the new station PLC and tested to provide functionality. Once the new PLC has been commissioned, the temporary PLC and hardware will be uninstalled and removed for use at the second pump station to be upgraded.

Radio Improvements

Once the new communications tower has been constructed, a new antenna will be installed and routed to the existing transceiver device. Radio communications will be migrated from the existing antenna to the new antenna. Once the new antenna has been commissioned, the old antenna can be removed. This work can occur independently of the PLC improvements.

Mechanical Replacement/Rehabilitation

In parallel with the electrical and instrumentation improvements, a condition assessment of the mechanical equipment will be performed. This condition assessment will be based on a desktop study of available equipment records, as builts, and other relative information paired with a field walk of both pump station facilities to document actual equipment and conditions on site.

The condition assessment will cover existing surge tanks, valving, piping, appurtenances, and pumps. It is expected that on-site pumps will need rehabilitation or replacement, as they are approaching the end of their useful lives. For these items, replacement of the pumps is recommended for several reasons, over rehabilitation. **Replacement vs. rehabilitation is outlined in the table on the next page**:

Replacement vs. Rehabilitation of Existing Pumps

Method	Benefits	Potential Issues
Replacement	▪ Verified integration with new electrical improvements. ▪ Known warranty and expected life prognosis. ▪ Provides an 'all new' solution for the pump stations.	▪ Higher cost. ▪ Potential minor piping improvements. ▪ Potential improvements to bolt patterns / pump foundations.
Rehabilitation	▪ Lower cost. ▪ Potential to avoid longer lead times. ▪ Guaranteed fit with existing equipment and piping.	▪ May require subsequent electrical / instrumentation improvements at time of future replacement. ▪ Not a long-term solution. ▪ Does not provide an 'all new' solution.

Carollo recommends replacement of pump equipment. While rehabilitation may be an option, this could require subsequent electrical upgrades once pumps are ultimately replaced. ***Upgrading now provides a one time, all new option for the District which will seamlessly integrate with the new electrical and instrumentation upgrades.***

Results of the condition assessment as well as the formal recommendations on existing equipment will be summarized in **TM-1 Condition Assessment**. This TM will be submitted as required in the RFP scope, and memorialized in the final PDR document.

Staff Team Qualifications and Experience

This team combines hands-on experience, regional knowledge, and technical depth to deliver seamless electrical, mechanical, and communications upgrades for IRWD.

A schedule showing the percentage of time each member will contribute to the project is included in the appendix along with detailed resumes for all key personnel.

Firm Introduction: *Electrical Innovators. Water Experts.*

Carollo offers proven, hands-on experience executing complex electrical and mechanical improvements for water infrastructure systems. Our team excels at managing every aspect of equipment replacement, PLC modernization, and communications system improvements, including seamless coordination with SCE. We understand that this project is not just about replacing hardware—it's about integrating advanced technologies, evaluating mechanical systems for optimal performance, and constructing reliable communications towers to support IRWD's operational needs. With a proven track record on similar projects, Carollo's specialists are ready to guide IRWD at every phase, from technical evaluation through construction, delivering resilient, future-ready solutions that keep your facilities running safely and efficiently.

Geocon West, Inc. (Geocon) is a California corporation established in 1971, providing comprehensive geotechnical, geologic, materials testing, and environmental consulting services. The Geocon Irvine office and certified laboratory serve as the local hub for Orange County, delivering responsive geotechnical engineering and construction support to municipal, water, and utility clients. Backed by additional offices across Southern California, Geocon offers the depth of resources and technical expertise needed for complex infrastructure projects.

Applied Technology Group, Inc. (ATG) is a three-generation family-owned wireless communications company serving California and Kern County for 70 years. ATG provides radio frequency consulting and engineering services across public safety, commercial, education, private enterprise, and government sectors. The company represents over 15 communication product lines and owns and operates all communication sites, with approximately 100 repeaters currently operational and ongoing development of new systems. ATG completed the first radio link connecting Northern California with the Southern San Joaquin Valley and Central Coast.

The Proven Team: *Knowledgeable. Cohesive. Built for Your Project.*

The Pump Station Rehabilitation project at the Coastal Zones B&D and Coastal Zone OC-63 to Zone 4 PS demands a team with proven expertise in complex infrastructure challenges and an intimate understanding of your operational requirements. **We are that team.**

Carollo brings unmatched pump station rehabilitation experience, having delivered planning, design, and construction services for more than 600 pump station projects nationwide, with capacities ranging from less than 1 mgd to 600 mgd. Our specialized expertise in aging electrical systems, mechanical equipment evaluations, and control system upgrades directly addresses the critical challenges facing your facilities. We understand that maintaining uninterrupted service during construction is paramount, and our proven construction sequencing methodologies minimize bypass pumping requirements while eliminating operational disruptions. Our deep understanding of IRWD's stringent operational requirements and commitment to long-term reliability, paired with our expertise in designing robust pump stations built for decades of dependable service, set us as the clear choice for this essential project. Strategic collaboration between Carollo, Geocon, and ATG creates a unified team that delivers exceptional project outcomes for IRWD through seamless communication, integrated expertise, and proven on-time, on-budget performance.

Key personnel shall not be reassigned without prior IRWD written approval.

Key Personnel: *Individual Strengths, Collective Results.*

IRWD's goals require more than standard qualifications — they call for people who've delivered results on projects just like this. Each member of our team is here because they've faced, and overcome, the same complexities you're tackling now.

Marissa Petty, PE
PROJECT MANAGER | Albuquerque, NM

Brings 17 years of experience in electrical and instrumentation design for water and wastewater facilities. As project manager leading the Albuquerque Bernalillo County Water Utility Authority's multiple electrical projects and lead EI&C engineer for Oklahoma City's Hefner Low Lift Pump Station and Mesa's Transfer Booster Pump Station, Marissa specializes in utility coordination, equipment replacement, construction sequencing, and master planning—directly supporting complex facility upgrades and operational reliability.

Jeff Weishaar, PE
PRINCIPAL-IN-CHARGE | San Diego, CA

Brings 21 years of Southern California experience leading condition assessments, rehabilitation, and upgrades for pump stations and treatment facilities, including the Water Reclamation Plant Expansion for San Clemente. As project engineer for IRWD's Rattlesnake Reservoir Chlorine Gas System Replacement and project manager for San Diego's Alvarado Steel Piping Condition Assessment, Jeff delivers practical solutions that minimize disruptions and maximize system performance.

Jamshid (JD) Dorafsha, PE | QA/QC | Walnut Creek, CA

Brings 31 years of experience in water and wastewater electrical design and planning across the western U.S., including the City of Roseville's electrical distribution system upgrades. As project manager for City of Roseville's Dry Creek WWTP and Barton Road WTP switchgear and MCC replacement design-build projects, JD led stakeholder engagement, regulatory coordination, feasibility planning, and design requirements coordinating with the electrical prime contractor and the City.

Mark Seal, PE | PROJECT ENGINEER | San Diego, CA

Brings 12 years of experience spanning the design, construction, and commissioning of water and wastewater treatment facilities. Mark is highly skilled in all aspects of instrumentation and controls (I&C) for water and wastewater projects, with a proven track record delivering reliable and innovative solutions. He has provided I&C support for Sonoma Water's complex SCADA network design and led I&C efforts for the Albuquerque Bernalillo County Water Utility Authority's Primary Clarification Odor Control and Vacuum Station I&C Replacement projects. As project engineer, Mark brings hands-on expertise in PLC replacement, radio communications, system integration, automation, and process optimization to support successful project delivery.

Ryan Fuentes, EIT | ELECTRICAL | Walnut Creek, CA

Brings 2 years of experience spanning the preliminary stages of design through engineering services during construction. He specializes in electrical system design and implementation for water and wastewater facilities. Ryan has provided electrical support for multiple municipal projects, including designing the electrical system for a replacement pump station for the City of Grants Pass and assisting with electrical sequencing for the City of Reno's Truckee Meadows Water Reclamation Facility Filter Improvement project. His expertise includes power distribution design, control system integration, and construction phase electrical support.

Andrew Frost, PE | MECHANICAL | San Diego, CA

Brings 17 years of experience in civil engineering design and project management, specializing in water and wastewater infrastructure projects such as pump stations, large-scale septic-to-sewer conversions, and collection system rehabilitation. As the project manager for the Eastern Municipal Water District's Warm Springs Lift Station Replacement and the Elsinore Valley Municipal Water District's Sedco Hills & Avenues Septic to Sewer program, Andrew demonstrates a strong track record in delivering complex pump station and conveyance projects, with a focus on technical excellence, interdisciplinary coordination, stakeholder communication, and successful project delivery.

Jack White, PE | I&C | San Diego, CA

Brings 4 years of experience in water and wastewater infrastructure planning and design. Since joining Carollo in 2021, he has contributed to pump station projects with expertise in SCADA systems, PLC replacements, industrial automation, and electrical assessments. Jack develops P&IDs, control narratives, panel elevations, and schematics. He served as lead I&C engineer for Goleta Water District's Progressive Design-Build SCADA Upgrade and provided EI&C support for San Diego's North City Pure Water Facility and Pump Station Engineering Services During Construction.

A MINUTE WITH YOUR

Project Manager

Marissa Petty

Marissa has more than 17 years of experience with Carollo, has worked in multiple Carollo offices, and served as resident electrical engineer for several large construction projects. She has been managing electrical projects for more than a decade. Marissa has successfully led workshops with clients and stakeholders and conveyed client decisions to the electrical team. This diverse experience within Carollo has given her an opportunity to work with multiple clients and contractors directly in the field to identify and solve issues. The knowledge she has gained working with these clients will allow her to work with the District to review your existing system and suggest implementation strategies honed at other facilities.

Q: What are the two biggest challenges with this project and how will your team address them?

The biggest challenges are minimizing downtime and fitting equipment in the existing space. Downtime can be minimized by specifying a specific work sequence that will allow the job to be consistently bid and enforced during construction. Fitting the equipment into the existing space can be done through either equipment pre-selection or pre-procurement. This allows the District to make a value-based selection based on the equipment fit, features, and cost.

Q: What is your philosophy on communication and collaboration with the client, and how do you keep the IRWD team engaged?

I seek first to understand both the staff and the facility, then together we can design the best solution. From the kickoff meeting to the final meeting, I focus the team on asking specific questions and sharing ideas with the client's staff to understand their specific preferences. There are likely 10 different approaches to resolving the issue, but only one will be the right fit for how the client operates and maintains their system.

Q: In your experience, what are the most critical factors to consider when upgrading aging electrical and controls equipment in critical infrastructure to provide long-term reliability?

Timing - The District is already on the right track by planning the electrical equipment replacement with the PLC upgrades and evaluating the mechanical improvements before proceeding. Performing these upgrades separately can result in increased costs and missed opportunities to take advantage of new technology. Even when equipment is replaced in kind, the new equipment and technology have changed so that when the three systems are done separately, the other two systems will have to be modified to some extent to accommodate, increasing design effort and cost of modifying the other systems multiple times.

Redundancy - Overly complex or inconsistent redundancy can become a hazard for plant staff to operate and maintain. Depending on maintenance windows and ability to recover from a major failure, the right level of redundancy can be selected for the facility.

Related Project Experience

Carollo has the dedication and expertise to deliver top-quality electrical design and construction services to our clients.

We are Leaders in EI&C Services

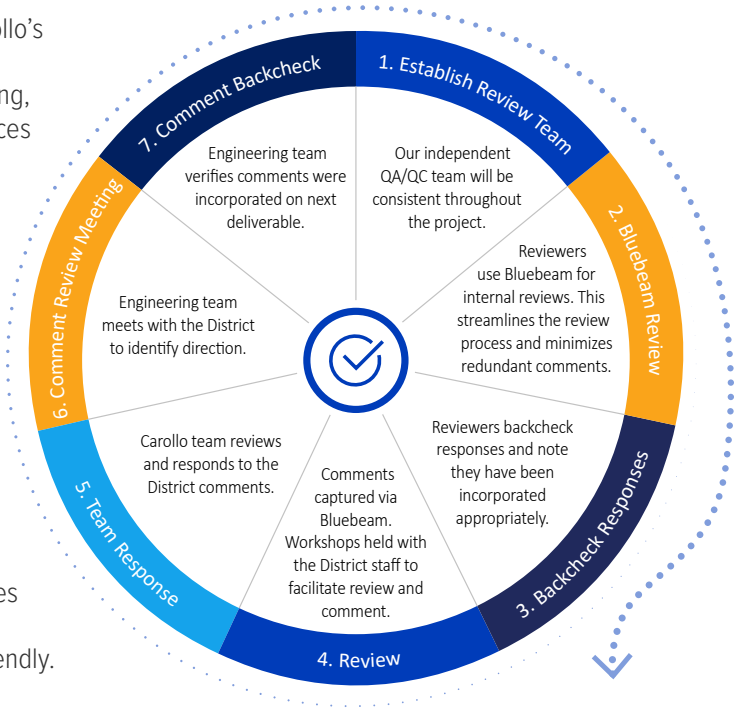
Carollo is an industry leader in the planning, design, and implementation of electrical, instrumentation and communication (EI&C) and computerized SCADA/telemetry systems for water and wastewater agencies. As a water focused consulting firm, we know how facilities operate and understand how to integrate the design of new and modified electrical systems into pumping processes. Our clients range from small municipalities to some of the largest utilities in the country with pump stations that range in size from less than 1 mgd to more than 600 mgd. The electrical power, instrumentation, and control landscape is constantly evolving—today, automation and reliable power systems are critical to any utility's success, enabling simplified, reliable, and efficient operations and maintenance. Carollo's Electrical, Programming, Instrumentation, and Controls (EPIC®) team provides full-service electrical, programming, instrumentation and control (I&C), and operational services to our clients, allowing us to design effective solutions for operational resiliency, efficiency, safety, and sustainability. As an established leader in the water and wastewater industry, Carollo has developed solutions for clients across North America.

Dedicated Group of Specialists

Within our EPIC® group, we have system integrators, programmers, and network and cybersecurity specialists. This hands-on experience gives us the unique ability to plan, design, and implement OT/SCADA systems that are functional, secure, and user-friendly.

Quality of Work

Our team is committed to quality. Our quality assurance/quality control (QA/QC) review process provides proven results and begins with a tailored project plan. This plan details procedures, standards, team roles, report checklists, review procedures, and a project deliverables schedule. Before submitting a deliverable to the District, we will conduct a QA/QC review using senior level engineers with expertise in the appropriate discipline area. These engineers will be separate from the design team, providing a third party set of fresh eyes. QC reviews will be completed on an ongoing basis during the design process, with documented formal reviews performed before each submittal milestone.



Our repeatable process will provide the District with quality work that you have come to expect from our teams.

City of Roseville Aquifer Storage and Recovery Well and Pump Station

City of Roseville, California

The combination of California's drought and the City's diminishing surface water supply prompted a design-assist project with an accelerated construction schedule to build and operate two aquifer storage and recovery (ASR) wells within 11 months. The project injects treated water from Folsom Lake into the groundwater aquifer, acting as a large reservoir to pull water from at a later date. Our CM and field inspectors worked closely with the design team and contractor to streamline construction of the project to meet the fast paced construction schedule in a volatile supply chain market. This first phase of Roseville's ASR program used two existing wells (Westbrook and Solaire) that have been converted into ASR wells. Key components at each site included a CMU building housing mechanical systems, electrical and instrumentation equipment, and SCADA; chemical injection and wellhead treatment systems for iron and manganese removal; security features; a portable emergency power generator; and associated site improvements. During design, special attention was given to minimizing the impact on residential neighbors, including screening, sound walls, and acoustic louvers, as determined by a noise study performed as part of the project. Design is ongoing for four more wells, following the success of the first two in 2022.

REFERENCE
Janice Gainey, Senior Engineer
2005 Hilltop Circle, Suite 130
Roseville, CA 95747
P: 916-223-7860
E: jrgainey@roseville.ca.us

KEY PERSONNEL
Jamshid (JD) Dorafsha, QA/QC

PROJECT DATES
2022

FINANCIAL SIZE
$31M (Construction)

QUALITY OF WORK
- Our standard quality of work procedures were employed on all deliverables.

ABILITY TO MEET SCHEDULE
- Carollo provided design assist and on-time/early deliverables were essential to meet the accelerated 11-month construction schedule.

CHALLENGES
- Accelerated schedule.
- Replacing existing equipment.
- Long-lead electrical equipment.

Electrical On-Call Services

Albuquerque Bernalillo County Water Utility Authority (ABCWUA), New Mexico

The project included the replacement of a critical 480V switchgear with a new switchgear providing automatic transfer to the plant's existing 2 MW generator. The contract documents included a detailed sequencing plan requiring the switchgear to be replaced half at a time. The existing half was used to provide temporary power while the first half of the new switchgear was installed. The switchgear was replaced in the same location allowing the contractor to re-use the existing conduit and wire. Outages to connect/disconnect cables were limited to 4 hours.

REFERENCE
Charles Lee, PE
Electrical Engineer
4201 2nd Street SW
Albuquerque, NM 87105
P: 505-280-8935
E: clee@abcwua.org

KEY PERSONNEL
Marissa Petty, Project Manager
Brian Ream, QA/QC
Bryan Roepken, CAD

PROJECT DATES
2020-2022

FINANCIAL SIZE
$2.5M

QUALITY OF WORK
- Our standard quality of work procedures were employed on all deliverables.

ABILITY TO MEET SCHEDULE
- The project had been on hold for more than a year when the Owner requested changes to the original design and a quick turnaround on an updated final deliverable.

CHALLENGES
- Replacing existing equipment in place.
- Long-lead electrical equipment.
- Complex electrical sequencing limiting outages to 4 hours.

Beardsley Road WRF, Phase III Expansion

City of Peoria, AZ

The Beardsley WRF Phase III Expansion included a condition assessment of the facility and the design of recommended rehabilitations and expansions to increase plant capacity to 6 mgd. The project was constructed as a design build and the design packages were coordinated with the construction schedule. The project included multiple electrical and PLC upgrades throughout the facility, detailed sequencing was coordinated with the contractor to keep a critical lift station online throughout the construction. The electrical equipment replacement included two new switchboards and a new MCC.

REFERENCE
Christopher Sterne
Engineering Supervisor
9875 North 85th Avenue
Peoria, AZ 85345
P: 623-773-7237
E: christopher.sterne@peoriaaz.gov

KEY PERSONNEL
Marissa Petty, Lead Electrical
Brian Ream, QA/QC
Bryan Roepken, CAD

PROJECT DATES
2022-2025

FINANCIAL SIZE
$50M

QUALITY OF WORK
- Our standard quality of work procedures were employed on all deliverables.

ABILITY TO MEET SCHEDULE
- Pre-procurement and multiple design packages were provided to keep the Design-Build Contractor on schedule.

CHALLENGES
- Long-lead electrical equipment.
- Complex electrical sequencing limiting outages to 4 hours.

Hefner WTP Low Lift Pump Station Improvements – WT-0108

City of Oklahoma City, OK

As a critical component of the Oklahoma City water system, the Hefner WTP needed improvements to the intake structure and low lift pumping system. A condition assessment of the existing intake found it to be in satisfactory condition, but required minor structural, mechanical, and electrical repairs, as well as new tee screens, air bursting valves, and equipment to improve raw water quality entering the treatment process. The project included modifications to the existing pump station and the addition of a new low lift pump station with an ultimate build-out capacity of 200 mgd. Tight site conditions required coordination with plant staff, City planning staff, utilities, and private leaseholders. The project required detailed sequencing and coordination with the utility to upgrade the utility and keep the existing pump station online throughout the construction. The project included a new PLC, switchboard, and MCC.

REFERENCE
Larry Hare, PE
420 W. Main, Suite 500
Oklahoma City, OK 73102
P: 405-297-3681
E: larry.hare@okc.gov

KEY PERSONNEL
Marissa Petty, Lead Electrical
Brian Ream, QA/QC
Bryan Roepken, CAD

PROJECT DATES
2017-2019

FINANCIAL SIZE
$21.9M

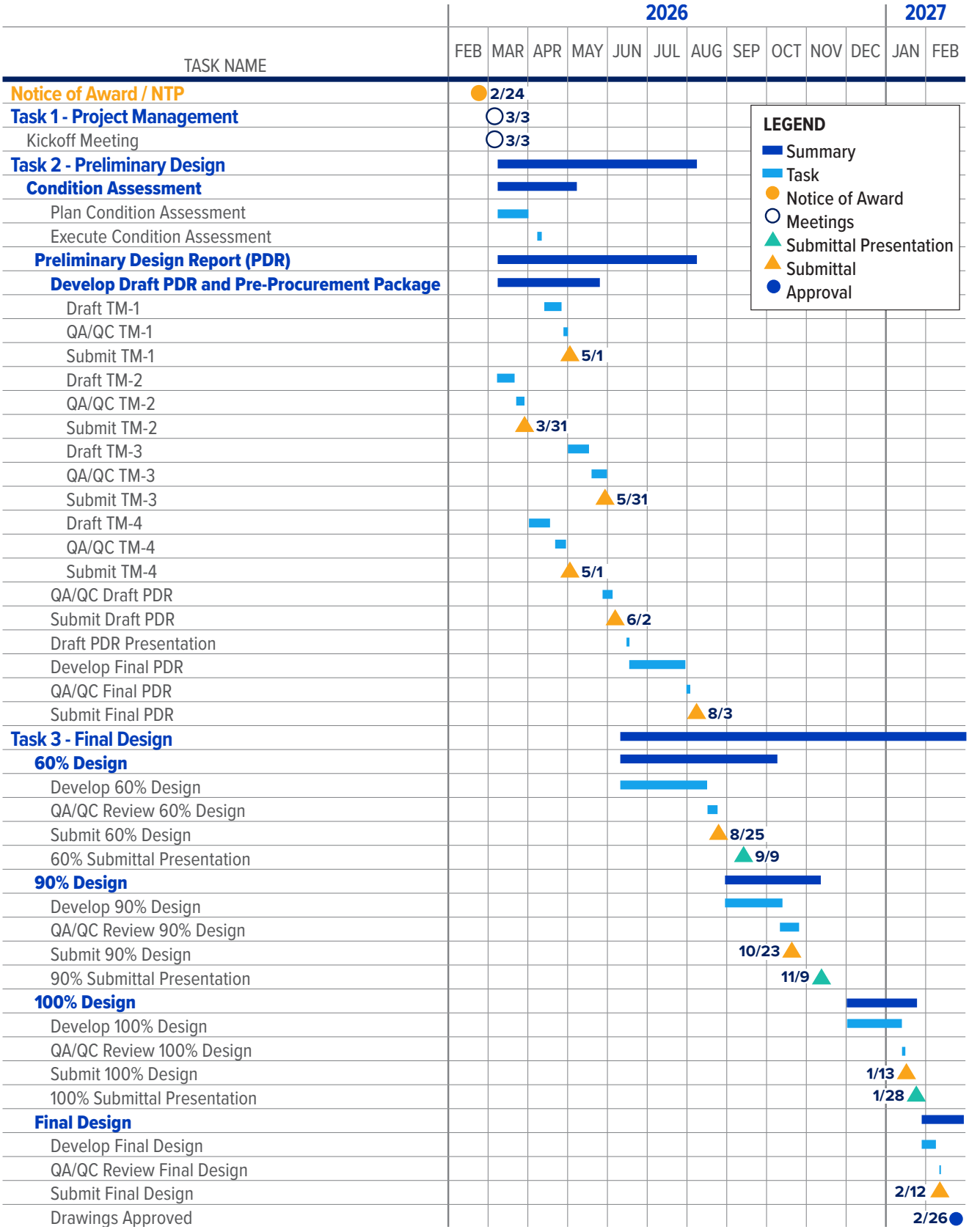
QUALITY OF WORK
- Our standard quality of work procedures were employed on all deliverables.

ABILITY TO MEET SCHEDULE
- Weekly PM updates, progress reports, monthly meetings, and action decision logs were used to keep the design on schedule and budget.

CHALLENGES
- Long-lead electrical equipment.
- Complex electrical sequencing limiting outages to 8 hours.

Schedule

Carollo demonstrates the ability to complete all work, given our current and planned workload, based on the proposed schedule.



Contractual Matters

The information below includes administrative and contractual matters as requested in the RFP.

6 – Level of Effort and Estimate Fee

The budget proposal, including fee schedules and breakdown of fee by task, is provided in a sealed envelope, separate from the project proposal, along with the Level of Effort provided in the appendix.

8 – Joint Venture

Carollo is not participating in a joint venture for this project.

9 – Conflict of Interest

Carollo, individuals employed by Carollo, or firms employed by or associated with Carollo, including subconsultants, do not have a conflict of interest for this project. Carollo, at all times, conducts its professional and business activities in a manner to prohibit conflict of interest on the part of the firm, and its employees. We foresee no circumstances in which an actual conflict of interest could arise.

10 – Contract

Carollo takes no exceptions to IRWD's Professional Services Agreement.

11 – Insurance

Carollo maintains insurance to protect both our client and our firm, against the types of claims that may be alleged to result from our services on this project. We have provided proof of our liability coverage in the appendix.

12 – Public Work Requirement

The following firms will provide work on this contract. Each firm's Department of Industrial Relations (DIR) number is below.

Firm Name	Role	DIR#
Carollo Engineers, Inc.	Prime	1000007174
Geocon West, Inc.	Subconsultant	10000011418
Applied Technology Group, Inc.	Subconsultant	1000014205

Drawing List

SHEET NO	DWG NO	TITLE
General		
0	G-01	TITLE SHEET, VICINITY MAP, LOCATION MAP
2	G-02	DRAWING INDEX
3	G-03	GENERAL NOTES AND LEGEND
4	G-04	GENERAL ABBREVIATIONS
5	G-05	PIPE SCHEDULES
Civil		
6	C-01	DEMOLITION PLAN
7	C-02	SITE PLAN
8	C-03	PAVING PLAN
Structural		
9	S-01	GENERAL NOTES
10	S-02	PLAN
11	S-03	SECTIONS
12	S-04	COMMUNICATION TOWER FOUNDATION PLAN AND SECTION
13	S-05	PUMP PAD PLAN AND SECTION
Mechanical		
14	M-01	LEGEND AND SYMBOLS
15	M-02	DEMOLITION PLAN
16	M-03	COASTAL ZONES B&D PUMP STATION PLAN
17	M-04	COASTAL ZONES OC-63 TO ZONE 4 PUMP STATION PLAN
18	M-05	COASTAL ZONES B&D PUMP STATION SECTION
19	M-06	COASTAL ZONES OC-63 TO ZONE 4 PUMP STATION SECTION

SHEET NO	DWG NO	TITLE
Electrical		
20	E-01	GENERAL ELECTRICAL - LEGEND AND SYMBOLS
21	E-02	GENERAL ELECTRICAL - ABBREVIATIONS
22	E-03	GENERAL ELECTRICAL - SEQUENCING
23	E-04	ELECTRICAL TYPICAL DETAILS - GROUNDING - EG
24	E-05	ELECTRICAL TYPICAL DETAILS - GROUNDING - EG
25	E-06	ELECTRICAL TYPICAL DETAILS - MOUNTING - EM
26	E-07	ELECTRICAL TYPICAL DETAILS - MOUNTING - EM
27	E-08	ELECTRICAL TYPICAL DETAILS - MOUNTING - EM
28	E-09	SITE ELECTRICAL - OVERALL SITE PLAN
29	E-10	SITE ELECTRICAL - SURGE TANK AREA
30	E-11	SITE ELECTRICAL - DUCT BANK SECTIONS
31	E-12	OVERALL ONE-LINE DIAGRAM - OVERALL ONE-LINE DIAGRAM
32	E-13	SWBD-D - ELEVATION
33	E-14	SWBD-D - ONE-LINE DIAGRAM
34	E-15	SWBD-R - ELEVATION
35	E-16	SWBD-R - ONE-LINE DIAGRAM
36	E-17	MCC-D - ELEVATION
37	E-18	MCC-D - ONE-LINE DIAGRAM - 1
38	E-19	MCC-R - ELEVATION
39	E-20	MCC-R - ONE-LINE DIAGRAM - 1

SHEET NO	DWG NO	TITLE
Electrical		
40	E-21	ELECTRICAL SCHEDULES - PANELBOARD AND DISCONNECT SCHEDULES
41	E-22	ELECTRICAL SCHEDULES - MANHOLE/HANDHOLE
42	E-23	COASTAL ZONES B&D - POWER AND CONTROL DEMO
43	E-24	COASTAL ZONE OC-63 - POWER AND CONTROL DEMO
44	E-25	COASTAL ZONE OC-63 - POWER AND CONTROL
45	E-26	COASTAL ZONE OC-63 - POWER AND CONTROL
46	E-27	COASTAL ZONES B&D - POWER AND CONTROL
47	E-28	COASTAL ZONES B&D - POWER AND CONTROL
48	E-29	COASTAL ZONES B&D - GROUNDING
49	E-30	COASTAL ZONE OC-63 - GROUNDING
Instrumentation		
50	N-01	INSTRUMENTATION - SYMBOLS AND ABBREVIATIONS - 1
51	N-02	INSTRUMENTATION - SYMBOLS AND ABBREVIATIONS - 2
52	N-03	INSTRUMENTATION - SYMBOLS AND ABBREVIATIONS - 3
53	N-04	INSTRUMENTATION - SYMBOLS AND ABBREVIATIONS - 4
54	N-05	INSTRUMENTATION - SCHEMATIC SYMBOLS
55	N-06	INSTRUMENTATION - SAMPLE LOOP DRAWING
56	N-07	INSTRUMENTATION - EQUIPMENT TAGGING SYSTEM - 1
57	N-08	INSTRUMENTATION - EQUIPMENT TAGGING SYSTEM - 2

SHEET NO	DWG NO	TITLE
Instrumentation		
58	N-09	INSTRUMENTATION - EQUIPMENT TAGGING SYSTEM - 3
59	N-10	INSTRUMENTATION - DIGITAL NETWORK TABLE - COASTAL ZONES B&D 1
60	N-11	INSTRUMENTATION - DIGITAL NETWORK TABLE - COASTAL ZONES B&D 2
61	N-12	INSTRUMENTATION - DIGITAL NETWORK TABLE - COASTAL ZONES B&D 3
62	N-13	INSTRUMENTATION - DIGITAL NETWORK TABLE - COASTAL ZONE OC-63 1
63	N-14	INSTRUMENTATION - DIGITAL NETWORK TABLE - COASTAL ZONE OC-63 2
64	N-15	INSTRUMENTATION - DIGITAL NETWORK TABLE - COASTAL ZONE OC-63 3
65	N-16	INSTRUMENTATION - TYPICAL DETAILS - 1 ELEC COMPONENTS AND CONDUIT SCHEDULE
66	N-17	INSTRUMENTATION - TYPICAL DETAILS - 2 BOM
67	N-18	TYPICAL PCM PANEL - PLC AND INSTRUMENT POWER
68	N-19	PCM PANEL - ELEVATION INTERNAL - 1
69	N-20	PCM PANEL - ELEVATION EXTERNAL - 1
70	N-21	PCM PANEL - ELEVATION INTERNAL - 2
71	N-22	PCM PANEL - ELEVATION EXTERNAL - 2
72	N-23	PCS SITE PLAN -
73	N-24	SYSTEM ARCHITECTURE DIAGRAM -
74	N-25	OVERALL NETWORK TOPOLOGY DIAGRAM -

SHEET NO	DWG NO	TITLE
Instrumentation		
75	N-26	FIBER DISTRIBUTION -
76	N-27	FIELD NETWORK - 1 -
77	N-28	FIELD NETWORK - 2 -
78	N-29	FIBER PINOUT DRAWINGS - 1 -
79	N-30	CONTROL SCHEMATICS - 1 -
80	N-31	CONTROL SCHEMATICS - 2 -
81	N-32	PROCESS AND INSTRUMENTATION - COASTAL ZONES B&D INFLUENT PIPING
82	N-33	PROCESS & INSTRUMENTATION - COASTAL ZONES B&D PUMPS 1
83	N-34	PROCESS AND INSTRUMENTATION - COASTAL ZONES B&D PUMPS 2
84	N-35	PROCESS & INSTRUMENTATION - COASTAL ZONES B&D SURGE TANKS
85	N-36	PROCESS & INSTRUMENTATION - COASTAL ZONES B&D EFFLUENT PIPING
86	N-37	PROCESS & INSTRUMENTATION - COASTAL ZONE OC-63 INFLUENT PIPING
87	N-38	PROCESS & INSTRUMENTATION - COASTAL ZONE OC-63 PUMPS 1
88	N-39	PROCESS & INSTRUMENTATION - COASTAL ZONE OC-63 PUMPS 2
89	N-40	PROCESS & INSTRUMENTATION - COASTAL ZONE OC-63 SURGE TANKS
90	N-41	PROCESS & INSTRUMENTATION - COASTAL ZONE OC-63 EFFLUENT PIPING
91	N-42	PROCESS & INSTRUMENTATION - MISC P&ID 1
92	N-43	PROCESS & INSTRUMENTATION - MISC P&ID 2

SHEET NO	DWG NO	TITLE
Typical Details		
93	TC-01	CIVIL TYPICAL DETAILS - 1
94	TE-01	ELECTRICAL TYPICAL DETAILS - 1
95	TE-02	ELECTRICAL TYPICAL DETAILS - 2
96	TM-01	MECHANICAL TYPICAL DETAILS - 1
97	TN-01	INSTRUMENTATION TYPICAL DETAILS - 1
98	TN-02	INSTRUMENTATION TYPICAL DETAILS - 2
99	TS-01	STRUCTURAL TYPICAL DETAILS - 1

DIVISION	NAME
1045	Existing Facilities
2220	Structure Earthwork
2223	Trenching, Backfilling, and Compacting
2578	Pavement Removal and Replacement
3201	Concrete Reinforcement
3260	Concrete Joints and Waterstops
3300	Concrete
3345	Concrete Finishing, Curing, and Waterproofing
5120	Structural Steel and Miscellaneous Metalwork
9900	Painting and Coating
15056	Ductile-Iron Pipe and Fittings
16050	Common Work Results for Electrical
16060	Grounding and Bonding
16070	Hangers and Supports
16075	Identification for Electrical Systems
16123	600-Volt or Less Wires and Cables
16130	Conduits
16133	Duct Banks

DIVISION	NAME
16134	Boxes
16150	Low Voltage Wire Connections
16210	Utility Coordination
16268	Uninterruptible Power Supplies 10 - 30 KVA
16272	Dry-Type Transformers
16285	Surge Protective Devices
16290	Electrical Power Monitoring
16305	Electrical System Studies
16411	Disconnect Switches
16412	Low Voltage Molded Case Circuit Breakers
16414	Low Voltage Power Circuit Breakers
16422	Motor Starters
16435	Low Voltage Arc Resistant Switchgear
16441	Group-Mounted Circuit Breaker Switchboards
16442	Individually-Mounted Circuit Breaker Switchboards
16444	Low Voltage Motor Control Centers
16445	Panelboards
16491	Transfer Switches
16950	Field Electrical Acceptance Tests
16990	Conduit Schedule
17050	Common Work Results for Process Control and Instrumentation Systems
17055	Packaged Control System
17100	Control Strategies
17101	Specific Control Strategies
17201	Level Measurement: Switches
17206	Level Measurement: Ultrasonic
17208	Level Measurement: Radar Pulse Time of Flight (PTOF)
17301	Flow Measurement: Switches
17302	Flow Measurement: Magnetic Flowmeters
17308	Flow Measurement: Propeller
17316	Flow Measurement: Rotameters (Variable Area Flowmeters)

DIVISION	NAME
17401	Pressure/Vacuum Measurement: Diaphragm and Annular Seals
17402	Pressure/Vacuum Measurement: Instrument Valves
17403	Pressure/Vacuum Measurement: Switches
17404	Pressure/Vacuum Measurement: Gauges
17405	Pressure/Vacuum Measurement: Direct
17501	Analyzers: pH
17502	Analyzers: ORP
17504	Analyzers: Gas Monitors
17505	Analyzers: Residual Chlorine
17710	Control Systems: Panels, Enclosures, and Panel Components
17712	Control Systems: Uninterruptible Power Supplies 10 kVA and Below
17713	Control Systems: Computer Consoles
17720	Control Systems: Programmable Logic Controllers
17721	Control Systems: Local Operator Interface (LOI)
17730	Control Systems: PCS Computer Equipment
17733	Control Systems: Network Materials and Equipment
17735	Control Systems: Fieldbus Equipment and Devices
17740	Control Systems: Process Cameras
17750	Control Systems: Wireless Communications
17762	Control Systems: PCS Software
17764	Control Systems: Maintenance Software
17901	Schedules: Field Instruments
17902	Schedules: Control Panels
17903	Schedules: I/O List
17904	Schedules: Local Operator Interface
17905	Schedules: HMI List
17950	Testing, Calibration, and Commissioning
221123	Domestic Water Pumps

Team's Availability

Our project team is available and dedicated to performing their designated tasks for the full duration of this project.

Carollo will not replace key team members without prior approval from the District to avoid affecting the project.

Individual commitment will be consistent with job requirements provided by the District to provide high-quality services. From a project management standpoint, we affirm that each individual has adequate availability to meet the project requirements for your assignments, as indicated in the table on the right.

TEAM'S AVAILABILITY TABLE

Name	Percentage Availability
Marissa Petty	25%
Jeff Weishaar	5%
Jamshid (JD) Dorafsha	5%
Mark Seal	25%
Ryan Fuentes	40%
Andrew Frost	10%
Jack White	40%

Fee

Pump Station Rehabilitation Irvine Ranch Water District Fee Estimate			Labor													Subtotal		Subconsultant and Expenses				Total Fee $
Task	Sub Task	Description	Principal-in-Charge	Project Manager	Senior Engineer QA/QC	Lead Engineer	Electrical Engineer	I&C Engineer	Mechanical Engineer	Staff Engineer	Senior CAD Technician	CAD Technician	Document Processing	Structural Engineer	Structural CAD	Total Labor Hours	Total Labor Fee	Subconsultants		ODCs	Travel	
		Hourly Rate	*$360*	*$352*	*$347*	*$285*	*$265*	*$250*	*$255*	*$225*	*$288*	*$249*	*$180*	*$310*	*$288*				*5%*			
100	**0**	**Project Management**	**20**	**120**	**16**	**60**	**0**	**28**	**0**	**0**	**0**	**0**	**60**	**0**	**0**	**304**	**$89,892**				**$2,000**	**$91,892**
	1	Project Status Reports		30									12			42	$12,720					$12,720
	2	Meetings and Workshops	20	80		60		28					36			224	$65,940				$2,000	$67,940
	3	Quality Assurance / Quality Control Plan / Documentation		10	16								12			38	$11,232					$11,232
200	**0**	**Preliminary Design**	**10**	**28**	**50**	**112**	**101**	**116**	**78**	**248**	**134**	**256**	**78**	**24**	**36**	**1,271**	**$328,365**	**$26,535**	**$1,327**	**$26,500**	**$500**	**$383,227**
	1	Background Information			2	8				16						26	$6,574					$6,574
	2	Coordination with Outside Agencies	2			16				12						30	$7,980			$20,000		$27,980
	3	Condition Assessment and TM-1		8		8			16	20			40			92	$20,876				$500	$21,376
	4	Electrical and Controls	2		20	32	34	44		40						172	$45,790					$45,790
	5	Communications		2	2	4			16					24	20	68	$19,818	$26,535	$1,327			$47,680
	6	Construction Schedule		4		4				8						16	$4,348					$4,348
	7	Opinion of Probable Construction Cost	2	2	2	8	8	8	6	20			2			58	$14,908					$14,908
	8	Preliminary Design Report	4	12	8	16	25	30	40	60	130	250	30		16	621	$160,523			$1,500		$162,023
	9	Pre-Procurement Package			4	4	4	4		12						28	$7,288					$7,288
	10	TM-2 Draft and Final			4	4	8	8		12	2	2	2			42	$10,782					$10,782
	11	TM-3 Draft and Final			4	4	8	8		12	2	2	2			42	$10,782			$2,500		$13,282
	12	TM-4 Draft and Final			4	4	14	14		36		2	2			76	$18,696			$2,500		$21,196
300	**0**	**Final Design**	**63**	**46**	**75**	**262**	**66**	**94**	**104**	**345**	**200**	**400**	**90**	**0**	**32**	**1,777**	**$467,318**			**$2,500**		**$469,818**
	1	Project Manual		2	10	20			40	75			80			227	$51,349			$2,500		$53,849
	2	Instrumentation and Control Strategies	60		15	120		40		120						355	$98,005					$98,005
	3	SCE Final Service Plan	2	2		8	12									24	$6,884					$6,884
	4	Opinion of Probable Construction Cost	1	2		4	4	4	4	20			2			41	$10,144					$10,144
	5	Final Design Deliverables (60%, 90%, 100%, Final)		40	50	110	50	50	60	130	200	400	8		32	1,130	$300,936					$300,936
400	**0**	**Bid Support**	**0**	**16**	**0**	**20**	**16**	**16**	**4**	**2**	**18**	**22**	**18**	**0**	**0**	**132**	**$34,944**				**$500**	**$35,444**
	1	Pre-Bid Meeting		4		4				2			2			12	$3,358				$500	$3,858
	2	Construction Drawing Revisions		4		8	4	4	4		10	10				44	$12,138					$12,138
	3	Technical Specification Revisions		4		2	8	8					8			30	$7,538					$7,538
	4	Bidder Questions		2		2	4	4								12	$3,334					$3,334
	5	Conformed Drawings and Project Manual		2		4					8	12	8			34	$8,576					$8,576
Total Hours			**93**	**210**	**141**	**454**	**183**	**254**	**186**	**595**	**352**	**678**	**246**	**24**	**68**	**3,484**						
Total Price			$33,480	$73,920	$48,927	$129,390	$48,495	$63,500	$47,430	$133,875	$101,376	$168,822	$44,280	$7,440	$19,584		$920,519	$26,535	$1,327	$29,000	$3,000	$980,381

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