



PROPOSAL

Regional Treatment Plant (RTP) Primary and Aeration Area Grating and Gates Replacement

April 25, 2024





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April 25, 2024

South Orange County Wastewater Authority (SOCWA)
Attn: Jeanette Cotinola, Procurement/Contracts Manager
34156 Del Obispo Street
Dana Point, CA 92629

RE: Proposal for the Regional Treatment Plant (RTP) Primary and Aeration Area Grating and Gates Replacement Project

Dear Members of the Selection Committee,

We are excited to present our proposal for the Regional Treatment Plant (RTP) Primary and Aeration Area Grating and Gates Replacement project. Providing continuous and reliable operation to maintain resilient and robust treatment while improving the condition of critical treatment processes and personnel safety is paramount. The RTP is a critical part of the larger water reclamation system in South Orange County. The key to success on this project is attention to detail and tailoring improvements on a case-by-case basis to prepare a thorough set of construction documents. The HDR team brings the following benefits to the project:

A Driven Project Manager to Accomplish Your Goals. Our proposed Project Manager, **Teigan Gulliver**, has a firm understanding of the purpose, goals, and scope of the project. She will keep the team focused to meet your timeline and budget. Teigan brings her technical experiences on primary and secondary treatment process from working at LA Sanitation's Terminal Island Water Reclamation Plant, LA Sanitation's Hyperion Water Reclamation Plant, and Orange County Sanitation District's Plant No. 1. Teigan will be supported by people you know and trust. Our Principal In Charge, **Amy Omae**, has worked with SOCWA and understands the project workflow, deliverable requirements, and preferences. Amy and Teigan will provide consistency and continuity to keep the project on-track and achieve your goals.


Maintaining Plant Operations During Construction. Maintaining plant operation is critical to the success of this project during construction to minimize the impact to the plant staff and the level of treatment. **Gregorio Estrada** will lead this effort and use his extensive treatment knowledge to streamline a comprehensive construction sequencing plan. Gregorio has lead construction sequencing efforts successfully for dozens of our water reclamation plant projects including the recent Tertiary Filters Project for Irvine Ranch Water District.

Listen First, Deliver Quality. This project will address safety and operability issues at the plant. At HDR, we listen first, which results in a deep understanding of the unique needs, concerns, and wants to deliver a high-quality product that addresses those needs. The Design Workshop and in-person meetings identified in the project scope align perfectly with our culture. This workshop will be a collaborative environment with SOCWA and HDR staff to address all aspects of the project, to set design in the right direction.


We are excited for the opportunity to work with you on this project. If you have any questions, please do not hesitate to reach out to Teigan Gulliver via phone at 612.244.4769 or email teigan.gulliver@hdrinc.com.

Sincerely,

HDR Engineering, Inc.



Anna Lantin, PE
Vice President



Teigan Gulliver, PE
Project Manager

1.

Identification of Responder



01 Identification of Responder

LEGAL NAME & ADDRESS

HDR Engineering, Inc.
 3230 El Camino Real, Suite 200
 Irvine, CA 92602

FORM OF COMPANY

S-Corporation

PARENT COMPANY

HDR, Inc.

ADDRESS OF PRINCIPAL PLACE OF BUSINESS AND ANY LOCAL OFFICE

Headquarters: 1917 S 67th Street,
 Omaha, NE 68106
 See Southern California office locations below.

PRIMARY POINT OF CONTACT

Teigan Gulliver, PE
 Project Manager
 P: 612.244.4769
 E: Teigan.Gulliver@hdrinc.com

HDR'S SOUTHERN CALIFORNIA OFFICES

Irvine 3230 El Camino Real Suite 200 Irvine, CA 92602	Long Beach 100 OceanGate Suite 1120 Long Beach, CA 90802	San Diego 591 Camino de la Reina, Suite 300 San Diego, CA 92108
Santa Ana 1851 East First St., Suite 1400 Santa Ana, CA 92705	Ventura 200 E Santa Clara St., Suite 220 Ventura, CA 93001	San Diego DT 401 B. Street Suite 1110 San Diego, CA 92101
Los Angeles 350 S. Grand Ave. Suite 2900 Los Angeles, CA 90071	Claremont 431 W. Baseline Rd. Claremont, CA 91711	Riverside 2280 Market St. Suite 100 Riverside, CA 92501

The project will be managed from our Irvine office, located 30 minutes from SOCWA's Regional Treatment Plant.

Company Background & History

A global architecture, engineering and construction (A/E/C) firm established in 1917, HDR is headquartered in Omaha, Nebraska, and maintains more than 200 offices throughout the U.S. and abroad. We are an employee-owned corporation with more than 12,000 employees. In the state of California, we have 1,200+ professional staff — over 320 of whom specialize in water wastewater, and water resources services.

HDR has been providing engineering and architectural consulting in Southern California since 1960, including planning, design, and construction management for water agencies throughout Southern California. Over the years, HDR has expanded to nine Southern California offices: Irvine, Santa Ana, Los Angeles, Long Beach, Ventura, Riverside, Claremont, and San Diego. **HDR's Irvine office is located within 25 miles of SOCWA's office and 18 miles of SOCWA's Regional Treatment Plant.**

Technical Services & Capabilities

HDR is a leader in planning and design of water infrastructure assets, with the depth and breadth of our expertise spanning condition assessment and rehabilitation of treatment facilities, pipelines, pump stations, storage reservoirs, groundwater wells, and more. We are well-versed in wastewater treatment, recycling, and reuse, hydraulic modeling, and have successfully delivered various engineering services under numerous contracts in Southern California and beyond.

Our advanced expertise covers the full cycle of one water management, from water supply to treatment to reuse, and all manners of conveyance and storage. Our years of experience give us an in-depth understanding of various regulatory, environmental, and geographic conditions. This broad range of capabilities and experience enables HDR professionals to plan and design easily operable, cost-effective facilities that meet the needs of our clients and communities, as well as local, state, and federal requirements. The HDR project team is ready and able to hit the ground running.

- Water, Recycled Water, and Wastewater Treatment
- Facility Rehabilitation, Replacement, Upgrade, and Expansion
- Asset Management, Condition and Corrosion Assessment
- Civil Engineering
- Groundwater & Wellhead Treatment
- Planning Studies
- Start-Up and Operator Training
- Hydraulic Modeling
- Advisory Services Policy and Funding Resources
- Strategic Communications
- Regulatory and Permitting
- Collaborative Delivery
- Program Management

2.

Approach to the Work



02

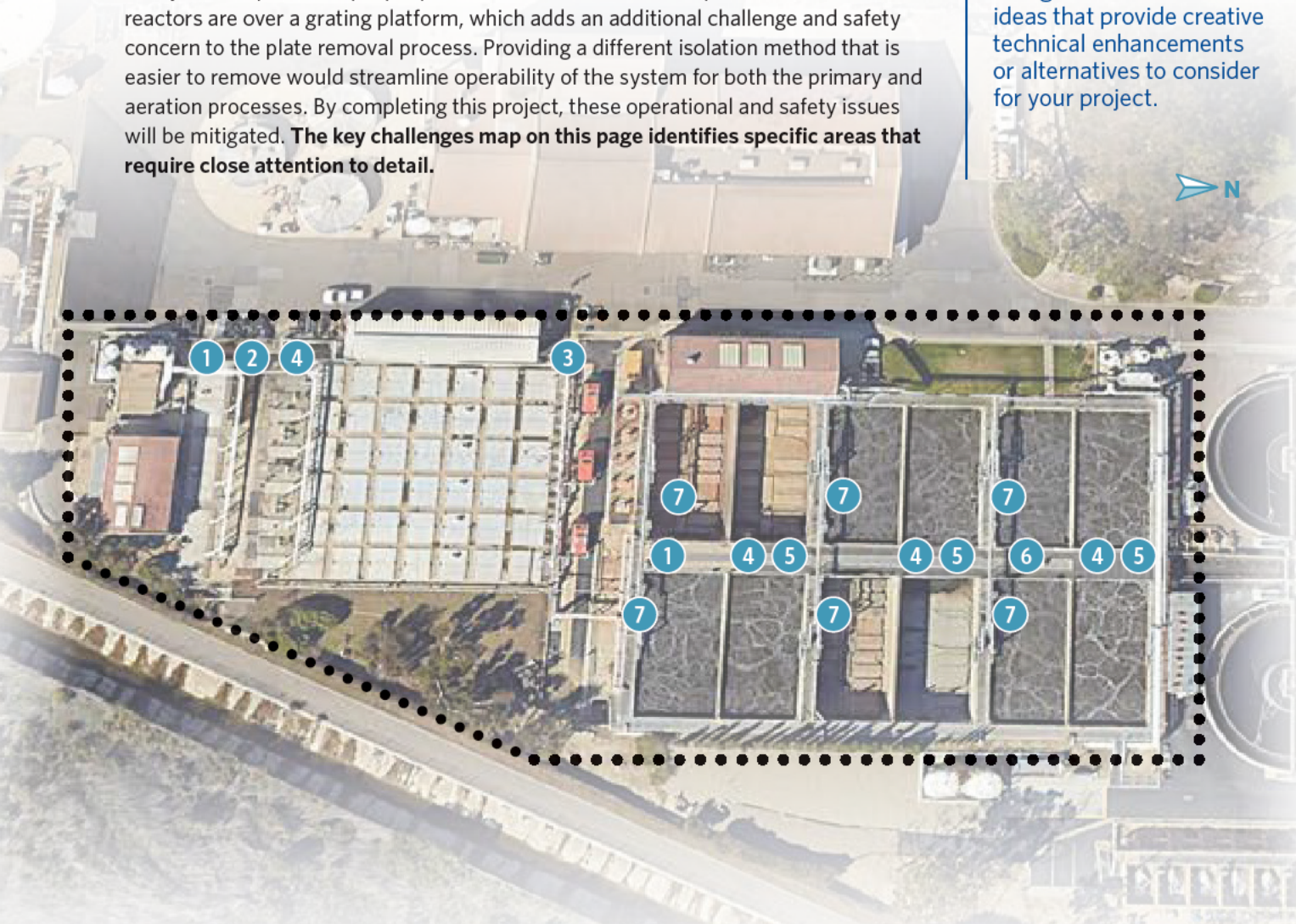
Approach to the Work

Project Understanding

The grating in the grit basin, primary sedimentation, and aeration areas are corroded, and even unsafe for plant staff to step on in some locations. In fact, the staff has covered some grating locations with plywood because of these safety concerns. Additionally, the isolation slide plates in the primary sedimentation tanks and aeration basins are challenging to remove and can become stuck in place. The plant staff has taken the initiative to mitigate these problems by operating the plates on a regular basis to keep the plates from becoming stuck. The aeration basin plates are large, heavy, and require multiple people to remove them. The slide plates on the north reactors are over a grating platform, which adds an additional challenge and safety concern to the plate removal process. Providing a different isolation method that is easier to remove would streamline operability of the system for both the primary and aeration processes. By completing this project, these operational and safety issues will be mitigated. **The key challenges map on this page identifies specific areas that require close attention to detail.**

Ideas Built on Benefiting You

Our approach looks for ways to benefit SOCWA. Throughout our proposal, we've included an idea icon where our team has thought of innovative ideas that provide creative technical enhancements or alternatives to consider for your project.



In order to deliver a successful project, the team must understand both the project itself and the drivers behind it. We toured the site multiple times, analyzed the available data, and have already identified opportunities for innovation. We have also started evaluating the constructibility of our concepts to verify they can be implemented economically and efficiently. We are ready to start this project and begin delivering value to SOCWA.

KEY CHALLENGES

- 1 Grit influent/effluent, primary influent/effluent, and aeration influent/effluent are common channels that cannot be entirely shutdown or isolated.**

Approach: Develop a detailed construction sequence that incorporates bulkheads to perform rehab work in certain sections of the channel for certain phases of construction and minimize bypass pumping. Facilitate workshops with RTP staff to discuss and review the construction sequence to vet ideas and obtain stakeholder buy-in.
Benefit: Maintain plant operations during construction with a clear understanding and buy-in from plant staff regarding the sequence of construction.
- 2 Ancillary plant flows (grit and secondary scum, plant drain, sump, DAF overflow, centrate, digester overflow, and AWT overflow) return into the grit influent, primary influent, and primary effluent channels.**

Approach: For the intermittent return flows (plant drain, basement sump, digester overflow, and AWT overflow), we will indicate in our construction sequence when certain phases will need to be coordinated to stop those flows from entering the channels. For continuous return flows (grit and secondary scum, DAF overflow, and centrate) that cannot be stopped, we will analyze RTP's system to potentially identify points to redirect those flows to a different area of the plant or develop the construction sequence to include bypass pumping to convey those flows to a different section of the channel to continue executing the rehab work.
Benefit: The plant can continue treatment of wastewater and handling solids with minimal to no disruption to existing processes and staff operation.
- 3 Space constraints at primary effluent channel may be further strained by replacing existing stop gates with slide gates and manual operators (3 per tank, total of 18).**

Approach: Upward rising gates would exacerbate the space constraint on top of the deck. Downward opening slide gates would keep the gate frame below deck with only the manual handwheel actuator above deck.
Innovative Idea: Instead of installing a new slide gate in the primary effluent channel, our team can evaluate the feasibility of installing a valve (with a square nut manual actuator with hinged opening in the covers) on the submerged effluent piping inside the primary sedimentation tanks.
Benefit: Avoids potential accessibility and safety issues.
- 4 Deciding a seated or unseated gate at each location.**

Approach: Discuss the pros/cons regarding performance and implementation challenges of the seated or unseated gate for each location at the Design Workshop and facilitate the process for SOCWA to make an informed decision.
Benefit: Implement the right solution for each location and not assume a one-type-fits-all approach to the project.
- 5 Aeration basin effluent stop plates (5 per tank, approx. 5-ft wide x 4-ft high) are large and difficult to handle. Staff remove them once per year to prevent them from sticking.**

Approach: Replacing the existing stop plates with slide gates and manual handwheel actuators would save staff significant effort to isolate the basins.
Innovative Idea: Evaluate hydraulics of the plant to permanently enclose 1 or 2 of the existing stop plates with concrete to reduce the number of new slide gates to as low as 3 per tank.
Benefit: Reduce O&M costs.
- 6 Aeration area has bouncy grating and handrail inconsistency.**

Approach: Structural design to provide sufficient supports for grating and consider manageable grating sizes for smaller spans. Coordinate location of handrails and toe guards with location of new gates, grating, covers, and odor boxes.
Benefit: Grating will be less likely to bounce/warp over time because of the smaller spans, and it will be easier for staff to lift and remove grating. Attention to detail and reducing conflicts between new gates and handrail will make O&M activities easier.
- 7 Odor boxes (6 total) are custom built by RTP staff.**

Approach: HDR will rely on any potential as-builts for the design of those odor boxes. If none exist, then a combination of field visits and staff interviews will be performed to obtain information needed to replace the odor boxes in kind, in consideration of any potential piping conflicts that need to be accommodated.
Benefit: Avoid re-creating the wheel if it works great already to be more efficient.

Project Approach

Project Management and Quality Control/Quality Assurance

Our project management approach is built on trust, a clear definition of shared goals, and the mutual understanding of the necessary steps to achieve those goals and exceed your expectations. **Our proposed Project Manager, Teigan Gulliver, is dedicated to listening first, setting project goals and expectations, and continuously reaffirming them.** Through diligent planning, effective communication, and adept problem-solving, Teigan successfully led project teams to meet all milestones on schedule, with seamless coordination on the Long Beach Utility District S-7 Rehabilitation Project and the City of Los Angeles Hyperion Modeling Project.

Our Principal In Charge, **Amy Omae**, has worked with SOCWA previously and understands the project workflow, deliverable requirements, and preferences. She will provide project oversight, support the team, and check-in with you to discuss project progress and any potential issues. **Amy and Teigan have worked closely together on several projects, and will provide consistency and continuity to keep the project on-track and achieve your goals.**

Managing the Project. At the start of any project, HDR requires the project manager to prepare a Project Management Plan (PMP). This PMP is a living document that defines the project management and control protocols to be used throughout the life of the project. As Project Manager, Teigan will develop, execute, and update the PMP, which includes the purpose and goals of the

project, the scope of work and deliverables, the work plan and staffing assignments, budget, schedule milestones, contact information and communication plan, as well as quality control check points and assignments.

Teigan will be your main point of contact throughout the life of the project. She will host bi-weekly check-ins and provide monthly invoices and status reports containing progress updates as well as identifying potential risks early to mitigate cost or schedule impacts. Teigan will also review decisions and action logs to fortify the direction and clear communication in the project.

Delivering Quality. Our approach to quality assurance and quality control (QA/QC) starts on day one of the project. Our QA/QC Plan will be presented at the kickoff meeting and implementation of the plan will be documented throughout the project. The QA/QC Program promotes prevention rather than detection and being proactive rather than reactive. The QA/QC program covers communications, project filing, reviews, delivery of documents, CAD production standard, GIS standards, and project close-out.

We understand the importance of a strong technical QA/QC review. All deliverables will receive rigorous QC reviews before submittal. In addition, the management team will perform regular quality assurance (QA) audits of the project files, technical evaluations, details, specifications, invoices, progress reports, and correspondence to confirm the procedures and systems put in place by the PMP are being followed. If deviations are found, corrective measures will be made or the PMP will be modified to memorialize the new procedures. For this project, HDR is committing **Mandira Sudame** and **Tom Hamlin** to perform quality assurance and control checks throughout the life of the project, so that both HDR's and SOCWA's high-quality expectations will be met.


Deliverables:

- Monthly Invoices
- Monthly Status Reports
- Meeting Agendas
- Action Item Log
- Decision Log

Assumptions:

- Key HDR staff attending meetings include the project manager and two project engineers.
- The preliminary kickoff meeting will be an in-person meeting at the RTP.



 **Teigan brings the ideal combination of technical and leadership skills,** which produce projects that are staff-owned and cost-effective. She aims to understand key drivers of every project and the desires of all stakeholders involved.

We Understand the Importance of Meeting Project Schedules.

Often the most difficult aspect of a project is keeping it moving forward promptly. Our project manager understands the criticality of project milestones and knows the required documentation and workflow to successfully deliver your project on schedule. *The proposed schedule for the RTP Primary and Aeration Area Grating and Gates Replacement project, based on the scope of work, can be found below.*

ACTIVITY	Jun 2024	Jul 2024	Aug 2024	Sept 2024	Oct 2024	Nov 2024	Dec 2024	Jan 2025	Feb 2025	Mar 2025
Task 1: Project Management & QA/QC										
Task 1.1: Kickoff Meeting (In Person)		M								
Task 1.2: Project Management Plan	D									
Task 1.3: Project Meetings & Coordination										
Task 1.4: Project Monitoring & Reporting										
Task 1.5: Quality Assurance / Quality Control Plan	D									
Task 2: Records Review										
Task 2.1: Record Drawing, Reports, and Data Review										
Task 2.2: Site Visit and Staff Interviews		M								
Task 3: Preliminary Design										
Task 3.1: Bypass/Sequencing Conceptual Plan										
Task 3.2: Gates Alternatives Analysis										
Task 3.3: Structural Improvements Analysis										
Task 3.4: Design Workshop				M						
Task 3.5: Implementation Plan					F					
Task 4: Final Design										
Task 4.1: 50% Design Deliverable (inc. drawings, specs, cost estimate)							D			
Task 4.2: 90% Deliverable (inc. drawings, specs, cost estimate)								D		
Task 4.3: Bid Set Deliverable (inc. drawings, specs, cost estimate)										F
Task 4.4: Constructability Review										M
Task 4.4: Construction Sequencing and Bypass Plan										D



SOCWA has communicated that each deliverable should allow for one month review period. Our approach is to start developing the blank spaces in the project while already submitted content is being reviewed. To streamline efforts between the preliminary design phase and the final design phase, our approach is to take a prominent role in facilitating the design workshop, carefully documenting all decisions, action items, and directions to the project. **This approach maintains a fast schedule, and keeps the momentum going with the project team while the submittal is under review.**

Legend: **M** = Meeting or Workshop **F** = Final Deliverable
D = Draft Deliverable SOCWA Staff Review

Data Collection and Document Review

The Right First Steps with Pre-assessment Efforts.

To find the best solutions, we need to understand the staff safety and process concerns. Understanding the condition, performance, and reliability helps determine the specific evaluation and rehabilitation needs of a system. Our first effort will be to request, compile, and review available information, including record drawings and relevant reports. A critical source of information is from the treatment plant staff. We will conduct staff interviews to provide a foundational understanding of the grit, primary, and aeration system. On the site visit, we will also tour the site, using asbuilt drawings to record notes and details of every project element. **We will ask to open many of the basin covers to identify any discrepancies between basin trains. this approach minimizes potential change orders in the construction phase of the project.**

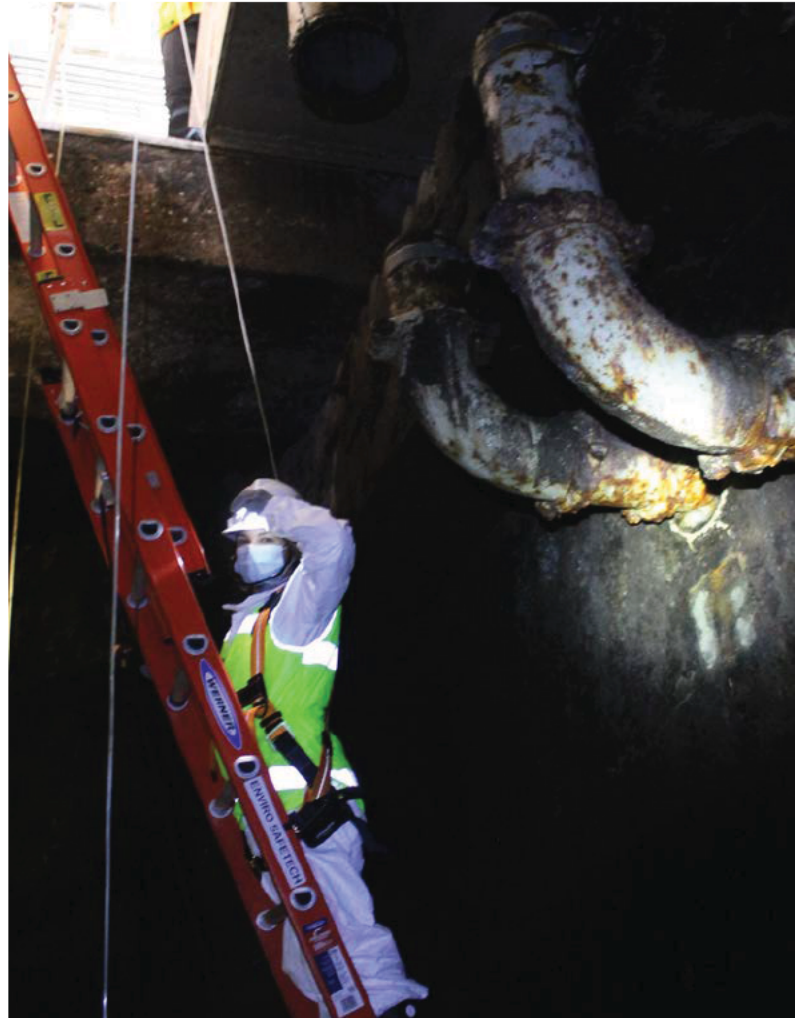
Preliminary Design Phase

Structural

With all water retaining structures, corrosion and concrete degradation are serious concerns that if left untreated can result in substantial retrofit. To develop the best approach, HDR will visit the project site to visually observe, document and understand the level of damage present. While there are specific areas that have been recently replaced/rehabilitated, there are many areas where severe corrosion exists in some of the elements. Most of these elements are beyond repair and need to be removed and replaced. This will require local removal to competent material and rebuilding of concrete elements to place the new embedded items including gate frames and grating/cover plate rebates. In some cases, as shown in Figure 1, the channels are lined with T-lock. Where T-lock liner must be removed as part of our repairs, the exposed concrete behind the T-lock will be repaired and sealed for protection of the structural concrete. The exposed concrete will be coated. We will develop methods for properly removing and sealing the edges of the T-lock. It is also possible that rebar corrosion has developed to a point that additional concrete damage has occurred and will require more concrete removal than would be necessary if only the embed items are being replaced.




Figure 1. Primary Sedimentation Tank with T-lock Lined Interior



Field investigations are critical. They assist us in identifying necessary repairs. We look at the current structural conditions and degradation. This information plays into the coordination with mechanical in determining the appropriate repair measures and field limitations. **Crystal Starr, our Structural Lead, is often in the field doing condition assessments. She reviews existing structural conditions and develops structural repair methods. For example, she recently inspected a tank for the City of San Mateo, as part of the Wastewater Treatment Plant Expansion and Nutrient Removal Upgrades.**

To provide the best retrofit possible, the following approach will be considered for the final design. Steel elements will be of materials that have a naturally more anti corrosive property. Galvanizing thickness will be evaluated, and the best protective thickness chosen for the specific elements. Concrete mix designs will be developed that include corrosion admixtures as well as waterproofing (crystalline) admixtures and be designed specifically for water tightness and crack control. Any exposed existing rebar encountered will be treated with a corrosion inhibitor to protect the rebar from further corrosion susceptibility. In conjunction with developing the repair and replacement procedures, HDR will work with SOCWA to develop the phasing approach required to keep the plant operational during construction.



 Our extensive experience and successful execution of similar tasks on the Central Contra Costa Sanitary District (Central San) Aeration Improvements Project directly translate to tangible benefits for SOCWA. The structural enhancements, mechanical upgrades, and meticulous construction sequencing carried out at Central San mirror the requirements of SOCWA's project, ensuring robust infrastructure, improved operational efficiency, and minimal disruption during implementation. **By leveraging the lessons learned and best practices from our Central San project, we are poised to deliver exceptional results that align seamlessly with SOCWA's objectives, ultimately enhancing the facility's performance and reliability.**



Removal and replacement of the existing corroded embedded slide gate frames and steel support members will provide an opportunity to pick materials with long-term corrosion resistance and structural strength. This is also an opportunity to strengthen and repair concrete encountered during repairs especially in the more susceptible vapor space at the top of the channels.



Figure 2. Primary Sedimentation Tank Slide Plate

Mechanical

Basin isolation is an important part of treatment process operability. The existing slide plates for basin isolation in the grit tanks, primary sedimentation tanks, and aeration basins are difficult to seat. The slots are corroded and plates do not seat correctly. There are several options that can be considered to isolate basins as shown in Figure 6. **We will work with you to evaluate basin isolation mechanisms that will allow of full, effective, and easy isolation of basins.**

The primary sedimentation tank effluent slide plates are in a challenging location because there is limited space above the deck with the primary effluent channel being only three feet wide. Installing new slide gates with manual handwheel actuators (three per tank) would reduce the space above deck even further and make access difficult for plant staff. To alleviate some space above deck, the primary effluent slide plates will be replaced with downward opening slide gates inside the primary effluent channel with manual handwheel actuators above deck.



Figure 3. Slide plates are challenging to seat, especially in corroded slots. Replacing plates with manually operated slide gates eases operability of the system.



There are three primary effluent pipes with submerged holes to allow for water flow through the pipe. Installing valves on each effluent line instead of replacing slide plates would provide a safer and more compact solution for staff mobility around the process area. Stainless steel knife gate valves or butterfly valves could be installed on these pipes with a rising stem that stops just below the access cover with a square nut. This would avoid potential obstructions above the deck and create more accessible space for staff.

During the Design Workshop, we will evaluate providing isolation via knife gate valves to provide improved access and safety, while maintaining the maximum amount of free walking clearance on the deck level.



Figure 4. Primary Sedimentation Tank Effluent Pipes

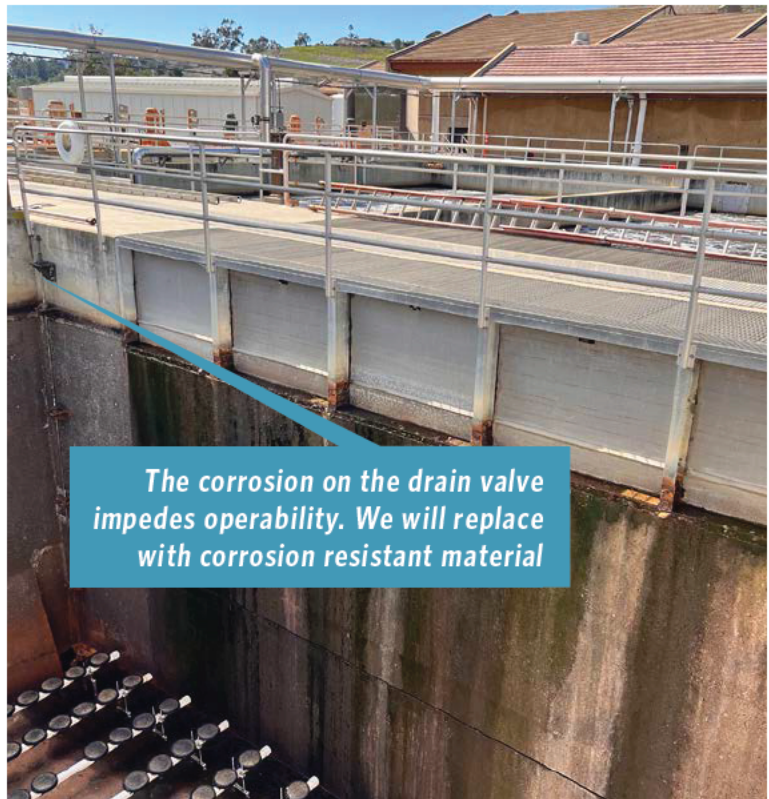
Aeration Basins

Aeration is the backbone of the liquid stream processes. Isolation of each basin is key to plant operations so regular maintenance activities can occur. Isolation plates, such as the six influent gates, effluent plates, basin drain valves, step feed gates, and RAS channel feed plates will be evaluated for replacement options. Figure 6 shows an example of comparing replacement options for basin isolation. We will work with SOCWA to select the best solution for each area of isolation, taking into account personnel safety, existing structure modifications, isolation options, grating and grating supports, materials, and ease of operability.



Slide Plates are large and cumbersome. Removal and handling is challenging.

Replacing with slide gates require sufficient structural supports to set the gates. **We will evaluate evaluate the hydraulic capacity of providing 3 of the 5 openings shown in Figure 5 and fill two cells with concrete.**



The corrosion on the drain valve impedes operability. We will replace with corrosion resistant material

Figure 5. Aeration Basin Mechanical Improvements. We will evaluate the hydraulic capacity of three openings and replace slide plates with manually operated slide gates to reduce costs and O&M effort.

MECHANICAL GATE REPLACEMENT ALTERNATIVES ANALYSIS





Stainless Steel Gates	Aluminum Gates	Stop Gates	Stop Logs
			
<ul style="list-style-type: none"> + Durable and corrosion resistant - Expensive to install 	<ul style="list-style-type: none"> + Lightweight and easy to install - May not withstand heavy-duty applications 	<ul style="list-style-type: none"> + Simple to design and low cost - Requires more frequent maintenance and has limited lifespan due to wear and tear 	<ul style="list-style-type: none"> + Flexible installation and removal, custom fit to various opening sizes - Not suitable for high pressure applications and has limited lifespan - Requires more labor to install and remove

Figure 6. Slide Plate Replacement Example Alternatives Evaluation

Detailed Construction Sequencing for Consistent and Reliable Treatment Performance during Construction

During construction, keeping the plant in service is essential. Primary sedimentation and aeration processes are the heart of any water reclamation facility. We will work with you to craft a sequencing approach that prioritizes operational safeguards while meeting your schedule constraints. Based on historical wet weather events, the plant should be able to comfortably take one grit tank, two primary sedimentation tanks, and one aeration basin offline and still meet water quality standards.

There are two key aspects of developing a robust sequencing plan: a detailed construction sequence that is tied to schedule performance requirements in the contract documents, and an operational plan that includes mitigation strategies should something unexpected occur. Developing a “routine” procedure to replace the grating and gates at the each tank while the remaining tanks maintain normal operation will improve consistency in the quality and efficiency of the Contractor’s work. **Each phase of work will include an isolation/decommissioning step to confirm reliable operation of the remaining**

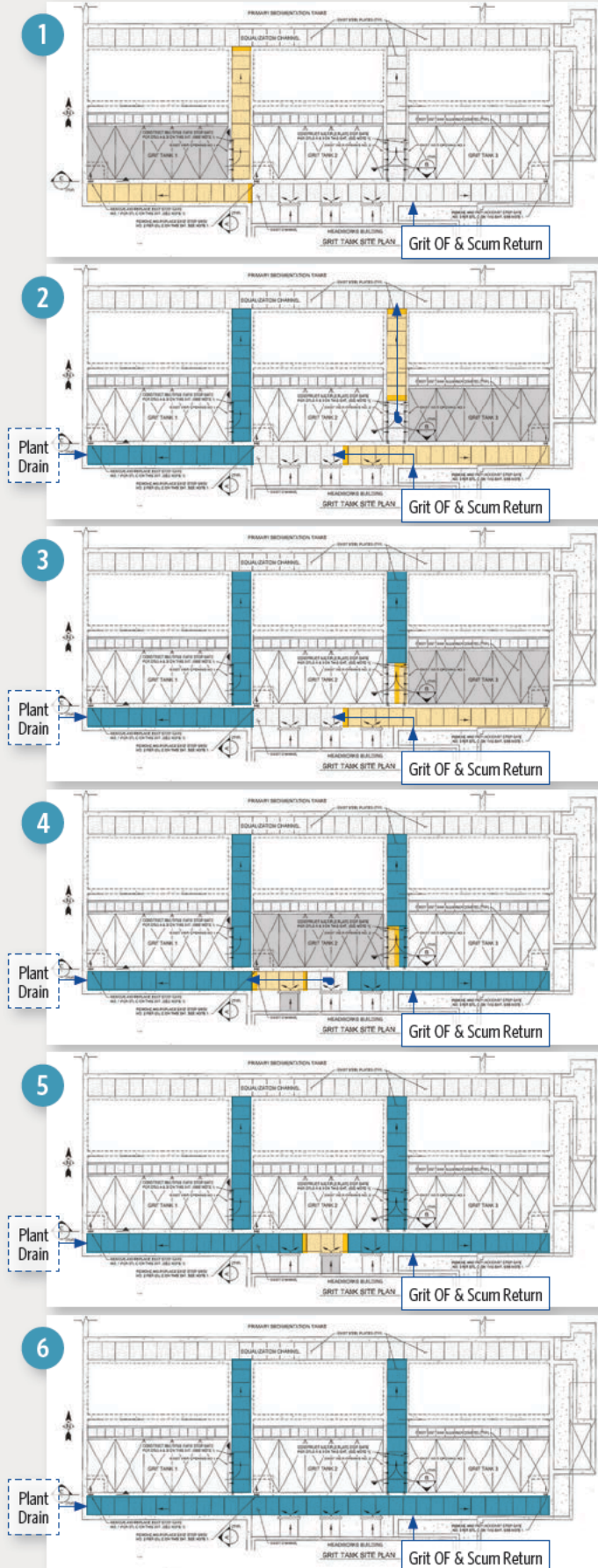
tanks before work begins, and a commissioning step to confirm reliable operation before the next one is taken offline. The construction sequencing plan must also include contingency plans to account for unexpected and prolonged disruptions in operation.

Our construction sequencing lead, **Gregorio Estrada**, brings 20 years of experience designing and commissioning wastewater treatment facilities. Gregorio is an adept facilitator and consensus builder, who will facilitate planning and coordination workshops meetings with SOCWA staff to develop and review the construction sequence based on our combined knowledge of the RTP treatment limitations, capacities, and staff needs for reliability and redundancy. The outcome will be a detailed construction sequence with clearly defined tasks, anticipated work durations, and that identifies opportunities or limitations to performing concurrent work. Additionally, we will discuss potential risks associated with the work to avoid doing high risk work during the wet season or anticipated storms. A clear understanding of the sequence of work and durations to execute the plan will minimize surprises and maintain compliance. We will work with you to identify the isolation points and limitations to avoid or limit the need for temporary bypass pumping and piping if possible.



We plan to dive into the details of the bypass and sequencing of the project in the Design Workshop. A workshop-based approach to construction sequencing development allows for collaborative discussion of operational, electrical, controls, and compliance limitations and opportunities. The result is a comprehensive and robust sequencing plan that protects the plant, while providing the contractor with flexibility in execution so that creative cost-saving solutions can be implemented. **Gregorio has the ability to bring groups to consensus, and has successfully used this approach on multiple projects for SOCWA, Irvine Ranch Water District, and Santa Margarita Water District.**

Figure 7. Example Construction Sequencing Schematic



Active Work Area
 Completed Grating Replacement
 Continuous Plant Return Flow
 Intermittent Plant Return Flow



Head Start on Construction Sequencing and the Implementation Plan

We understand the importance of a thorough construction sequencing plan. Because of that, we have already started evaluating the constructibility of our concepts to verify they can be implemented economically and efficiently to keep a minimum number of basins online during construction. Figure 7 is an example construction sequencing schematic we would develop for the grit influent and effluent area, which also considers the continuous and intermittent return flows from other areas of the plant into the common channels. **This head start allows us to begin delivering value to SOCWA right after NTP.**

We are committed to working with you to develop phasing and sequencing options that do not disrupt ongoing plant operations or other projects underway while minimizing O&M impacts. Sequencing schematics, similar to Figure 7, will be presented and discussed at the Design Workshop for all work areas.





As part of the IRWD Michelson Tertiary Filter Rehabilitation, Gregorio Estrada facilitated multiple workshops with operations, engineering, maintenance, electrical services and staff to develop a comprehensive sequencing plan that is being implemented now as part construction. We will bring lessons learned from that project and deliver a robust sequencing plan for SOCWA's RTP.

Design Workshop


SOCWA has identified using the Design Workshop for documenting preliminary design actions and decisions in lieu of a preliminary design report. This method will provide the direction to final design while being efficient with preliminary design efforts. As part of the workshop, we will develop mechanical improvements alternatives, and structural improvements alternatives, methodically presenting each area of work, potential improvements, the recommended improvement, and a construction sequencing conceptual plan. We will document the discussions, actions items, and decisions made for each of the areas of work. After the workshop, we will include an implementation plan with the design workshop meeting minutes, slide deck, and an actions/decisions log.


Proposed discussion topics for the design workshop include, but are not limited to the following:


 **Hydraulic Profile.** A hydraulic evaluation could allow us to see if all aeration basin effluent gates are needed or if we could reduce the number of gates. This would save money by reducing O&M and future replacement costs.


 **Seated vs. Unseated Gates.** The original design of the RTP grit tanks, primaries, and aeration basins incorporated embedded slide plates at the wall openings. Because many of these have become corroded and inoperable, slide plates were installed on the face of the wall, which are now also corroded. Replacing these isolation plates with slide gates will require demolition of the slide plate and associated embedded tracks and likely demolition of concrete. In some cases, the steel rebar and channel liner will have to be rehabilitated as well. The extent of demolition, general space constraints within the structure, top deck accessibility, and construction sequencing will be considered when evaluating the location of the new slide gates.

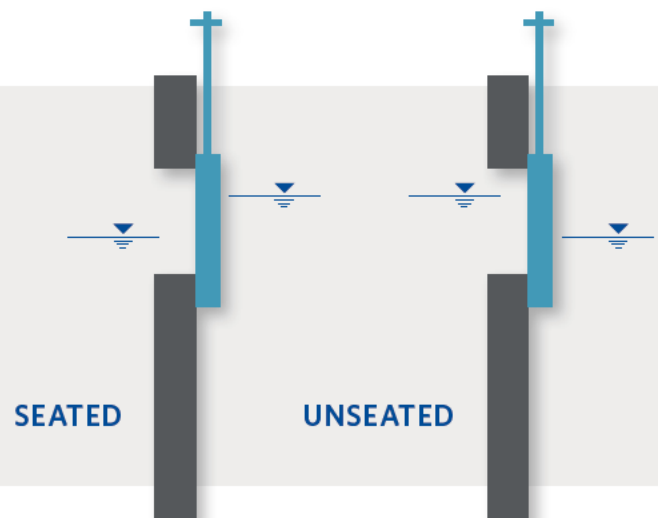
In most cases, a seated gate is preferred to an unseated gate because the hydrostatic pressure of the water assists in keeping the gate sealed against the wall. **During the Design Workshop, we will determine what is or is not feasible or cost-effective for each location.**

 **Location of Gates.** Each primary sedimentation tank has three submerged primary effluent pipes with slide plates to stop flow into the common primary effluent channel. Replacing the slide plates with slide gates and a manual handwheel actuator would significantly reduce accessibility due to space constraints on top of the deck. Adding a knife gate valve to each of the primary effluent pipes inside the tanks could be another option worth considering.

 **Construction Sequencing and Temporary Bypass Requirements.** Based on our combined knowledge of your plant and needs, we will develop a draft construction sequence approach for implementation that reduces the overall construction duration and minimizes temporary bypass pumping while maintaining plant operations. We will work with you to confirm the best approach to execute the work and identify potential concurrent paths.

 **Materials of Construction.** Upstream of the aeration basins, the headspace for wastewater channels is a highly corrosive environment. As such, our team will provide options to consider for construction materials depending on the location. Our general suggestion would be to incorporate stainless steel in the highly corrosive environment, and then aluminum in less corrosive areas. Stainless steel costs more than aluminum, but aluminum corrodes faster.

 **Access Cover Lifting Location.** Some of the access covers over the channels have hand holds to lift the covers more easily. Our team will consider other above-deck obstructions (such as close proximity to a wall or curb) and likely placement of the covers during O&M activities to identify the orientation of those hand holds for lifting the covers.



HDR will facilitate the Design Workshop to present feasible alternatives, discuss the advantages and disadvantages, and the effects of these decisions to understand the potential risk. The objective of the workshop is to obtain multiple perspectives, identify the concerns/issues, and achieve consensus on the approach to advance into Final Design. **Our team will work with you to tailor this project to efficiently meet your needs.**

Deliverables:

- Design Workshop Presentation Slides
- Design Workshop Meeting minutes
- Actions/Decisions log

Assumptions:

- No drawings will be provided in this phase
- Workshop will be held in person at the SOCWA RTP
- HDR Project Manager and three design leads will attend
- SOCWA PM and RTP staff will be able to attend and provide input on direction of the project

Final Design and Bid Documents

Based on the recommendations in Design Workshop Phase, HDR will prepare contract documents during the Final Design phase for the 50-percent, 90-percent, and Bid Set submittals. The design will clearly identify components (Grating, slide blocks, etc.) to be replaced as well as components (e.g. platform frame) to be repaired and the method of repair as applicable. Our team has a long history of working with SOCWA and are familiar with your standards and expectations. We will engage your staff in several discussions to identify limitations/constraints, communicate design intent, collaborate on strategy, and obtain consensus on the project direction.

Our approach for Final Design includes writing specifications that include items and details of the projects that are deemed to be critical in making it a success. It has been our experience that detailed specifications avoid opportunities for contractor misinterpretation, avoid inappropriate substitutions of alternate materials and maintain the design intent along with SOCWA control throughout the construction process.

Assumptions:

- HDR will provide electronic PDF submittals
- Drawing size will be 11x17
- SOCWA will review and provide comments for each submittal within 4 weeks

- SOCWA will provide Division 1 specifications
- HDR will prepare Section 01010, Summary of Work and Section 01014, Work Restrictions and Sequence

50% Design Documents

For the project concept selected from the preliminary design phase, the HDR team will prepare 50-percent design contract documents for the project, providing one electronic version. The 50-percent design phase will put the key building blocks in place for the complete set of contract documents and design documentation deliverable for the project. It will establish the framework for the drawings and specifications. As needed, the designs of the different features will be performed by different teams working in a parallel fashion to expedite the schedule. Development of the 50 percent drawings will provide an opportunity for project reviews and to make refinements and address project issues before a more detailed design is developed. HDR will coordinate and conduct a meeting with SOCWA and plant staff to review the 50 percent documents and to obtain their comments and concurrence.

Deliverables:

- 50% Drawings
- 50% Specifications
- AACE Class 4 Cost Estimate



90% Design Documents

Similar to the 50% design documents, HDR will prepare 90-percent design contract documents for the project, submitting one electronic version to SOCWA. The set will incorporate all comments from the Design Workshop and the 50% design set. Development of the 90 percent drawings will provide the details associated with the improvements and provides SOCWA the opportunity to review specific details prior to construction.

Deliverables:

- 90% Drawings
- 90% Specifications
- AACE Class 4 Cost Estimate

Constructability Review

A good constructability review before construction starts safeguards that the overall design is not flawed, the environmental permitting requirements are properly integrated in the plans and specifications and the long-lead delivery products are properly addressed. HDR provided the constructability reviews for the following projects, which aid in avoiding construction delays:

- Orange County Sanitation District (OC San), P1-140 Activated Sludge-1 & Secondary Clarifier Rehabilitation
- Irvine Ranch Water District, Michelson Water Recycling Plant Phase 2 Expansion
- SOCWA, JB Latham Aeration and Cogeneration Improvements
- Santa Margarita Water District, Chiquita Water Reclamation Plant Influent Screening and Lift Station Upgrades

Construction Sequencing and Bypass Plan

Taking the discussions and review of the Implementation plan and the Design Workshop, HDR will prepare a detailed construction sequencing and Bypass Plan. This will document how the project will be phased in order to maintain plant operations during construction. We know that there are several flows, such as the dewatering centrate and DAF return flow, and are sidestream flows that enter the primary sedimentation process that operate 24/7. Developing a highly detailed construction sequencing plan with flow rates, durations, and tie-in locations will minimize bypass pumping issues during the construction phase of the project.

Construction Bid Set

The construction bid set will be a fully completed set of drawings and specifications that incorporates SOCWA comments and advances in the project design. HDR will deliver on electronic version to SOCWA for review. Included will be the necessary direction and provisions for the rehabilitation and improvements. This set will be revised, if necessary, to address any final comments prior to bidding. This deliverable will include a written basis of estimate. The AACE Class 5 cost estimate will consist of a summary and detailed cost reports delivered in PDF. This task includes the work associated with producing a final bid-ready package for the project. HDR will finalize the plans and specifications and submit a bid-ready set of documents to SOCWA.

Deliverables:

- Construction bid set Drawings
- Construction bid set Specifications
- Class 5 cost estimate
- AACE Class 3 Cost Estimate



For IRWD's Filter Pump Station No. 2 (FPS-2) at the Michelson Water Recycling Plant, a temporary bypass system was necessary to continue to convey flow for the conventional train and provide reliable backup to the MBR treatment train. **HDR engaged with IRWD stakeholders to develop a detailed construction sequence, temporary bypass pumping implementation and testing plan, and startup plan for the FPS-2 pumps during the design phase.**

3.

Experience and Technical Competence



03

Experience and Technical Competence

Delivering Excellence Through Experience

Our dynamic and integrated team lives here and works here. We recognize the importance of adding value to our local community by solving tough challenges and inspiring positive change. We have been providing services in California since 1960 and have built solid working relationships with the majority of state agencies. Through our local offices, we have a strong familiarity with a solid and in-depth understanding of the requirements and constraints involved in state projects, and specifically those in Southern California. We will utilize our local knowledge and resources to deliver projects on time and within budget.

Our depth of wastewater design expertise brings the ability to identify the right improvements for your system with a focus on operational efficiency, long term reliability, and institutional independence. The following pages demonstrate our expertise on previous projects with SOCWA and other similar projects. Detailed project descriptions and client reference information can also be found on the following pages.

PROJECTS	GATE REPLACEMENT	STRUCTURAL REHAB	BYPASS	CONSTRUCTION SEQUENCING	COST ESTIMATING
JB Latham Aeration and Cogeneration Improvements* SOCWA	●	●	●	●	●
Chiquita Water Reclamation Plant Influent Screening and Lift Station Upgrades* Santa Margarita Water District	●	●	●	●	●
Michelson Water Recycling Plant Phase 2 Expansion* Irvine Ranch Water District		●	●	●	●
Wastewater Treatment Plant Expansion & Nutrient Removal Upgrades* City of San Mateo, CA			●	●	●
Marin Plant Digester Cleaning and Rehabilitation* Sanitary District No 5 of Marin County		●	●	●	●
Aeration Basins Diffuser Replacement & Seismic Upgrades* Central Contra Costa Sanitary District	●	●		●	
Michelson Water Recycling Plant Tertiary Filters Rehabilitation Irvine Ranch Water District	●	●	●	●	●
Plant 3A Aeration Upgrade SOCWA				●	
Michelson Water Recycling Plant Filter Pump Station No. 2 (FPS-2) Header Replacement Design Irvine Ranch Water District			●	●	●
P1-140 Activated Sludge-1 & Secondary Clarifier Rehabilitation Orange County Sanitation District (OC San)	●	●	●	●	●
Wastewater Nutrient Upgrade and Expansion City of Billings, MT				●	
Ventura Water Reclamation Facility Aeration Blower Project City of Ventura, CA				●	●
Ventura Ocean Outfall Pump Station City of Ventura, CA			●	●	●

**** Full project descriptions and client references are included on the following pages

“▲” Similar experience working with SOCWA & its member agencies



JB Latham Treatment Plant (JBLTP) Aeration and Cogeneration Improvements

**SOUTH ORANGE COUNTY
WASTEWATER AUTHORITY**

CLIENT CONTACT

South Orange County
Wastewater Authority
Roni Young Grant,
Associate Engineer
rgrant@socwa.com,
949.234.5411

DATES

Design
2015 - 2018



HDR designed an efficient and flexible aeration system that meets current demands and can accommodate anticipated changes in influent loadings. HDR served as SOCWA's partner from the facility planning phase through final design and construction phase services.

HDR performed process evaluation, optimization, and design of improvements for SOCWA's JB Latham Treatment Plant (JBLTP), including the development of a Facility Plan. As part of the Facility Plan, our team developed a Biotran process model for JBLTP. The team used this model to determine aeration demands for various scenarios, and evaluated diffusers based on diffuser characteristics and resultant air demands and energy use. The model was also used to determine the required number of diffusers per zone and resulted in optimization of the reactor configuration to create selector zones and reduce aeration demand.

The new aeration system consisted of new fine bubble air diffusers (membrane disc), high efficiency turbo blowers, and full automation through upgrades to control valves, air flow meters, and DO sensors to efficiently control air flow based on dissolved oxygen in the aeration basin influent and effluent zones.

Key elements of the project included the following:

- Evaluation of diffuser and blower equipment to create an optimized aeration system
- Development of a construction phasing and sequencing plan so the plant had sufficient

available aeration capacity throughout construction

- Structural repair of basin walls, walkways, and supports
- Safety improvements throughout the site including repair of existing and installation of new guardrail at the aeration basins
- Repair and replacement of existing equipment, including basin isolation gates
- Electrical design of improvements including new MCCS, instrumentation, and back-up generation. Power feed was connected to the on-site co-generation system.

Construction sequencing of the project required careful planning with operations such that capacity was not impacted. The sequencing plan developed was tailored to operational needs of the plant, and addressed changes in aeration demand and capacity at each phase and impacts to electrical load and upgrades to the MCCs.

The project had an aggressive schedule, which required parallel work paths and close coordination with plant operations staff. Regular meetings, and group review of the plan was essential so that all team members understood the impacts to plant operation at each phase of work.



Chiquita Water Reclamation Plant Influent Screening and Lift Station Upgrades

SANTA MARGARITA WATER DISTRICT

CLIENT CONTACT

Santa Margarita Water District
Tricia Butler, Chief Engineer
triciab@smwd.org,
949.459.6400

DATES

Design
2020-2024



Structural Improvements, Mechanical Gate Replacement, and detailed construction sequencing were crucial components of this project. We bring this relevant experience to the project.

The Chiquita Water Reclamation Plant (CWRP) Influent Screening and Lift Station Upgrades project included major facility modifications and equipment upgrades to address deficiencies to the screening and influent pumping facilities for Santa Margarita Water District's largest treatment plant. The project included analysis of historical influent flows and projections of future flows, and analysis of peak storm conditions to establish design criteria. The preliminary design included an evaluation of screening technologies, and development of configuration alternatives that addressed the physical limitations of the existing structure relative to modern screening technologies, and mitigate the hydraulic impacts to the downstream pumping systems.

The influent lift station upgrades included evaluation of existing conditions, including the construction of a physical model of the lift station to identify hydraulic constraints and develop mitigation strategies to ensure optimal hydraulic performance of the lift station under various conditions. The hydraulic modeling and analysis resulted in modifications to the pump station design.

The final design for the screening facility included modifications to the structure to accommodate the selected screening equipment, and new screening and washing/compacting equipment, new gate controls, odor control upgrades, complete electrical systems replacement, and new safety features. In addition, the design included architectural upgrades to integrate the headworks building with the overall plant scheme. HDR provided planning, design, and construction phase services.



Michelson Water Recycling Plant Phase 2 Expansion

IRVINE RANCH WATER DISTRICT

CLIENT CONTACT

Irvine Ranch Water District
Rich Mori, Engineering Manager
for Capital Group,
mori@irwd.com,
949-453-5571

DATES

Design 2006 - 2008	Construction 2008 - 2012
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HDR led this award-winning expansion with included innovative strategies to construct a new primary influent splitter box and sedimentation basins while eliminating shutdowns. We bring this maintenance of plant operations experience to your project.

HDR provided planning, evaluation, permitting support, public outreach, and preliminary and final design for improvements, as well as provided construction-phase services and facilitated operator training.

Expansion included design of a new treatment train consisting of a membrane bioreactor (MBR) followed by ultraviolet disinfection. To establish reliable operation, we designed a parallel treatment train that required hydraulic and controls integration with existing processes. The MBR was designed to meet a TN limit of 10 mg/L, included alkalinity addition to fully denitrify, and a provision to incorporate methanol as an additional carbon source, when needed.

We engaged Operations staff to create a combined commissioning team comprised of Contractor, Operator, and Design Engineers to keep the plant operational through construction and commissioning. We developed a comprehensive construction sequencing plan to address complex implementation requirements while maintaining plant operations. We effectively engaged and worked with District staff on

critical items. All bypass and isolation measures were integrated with SCADA to provide Operations staff with continuous monitoring of the system. We used temporary bypass and bulkheads to isolate a portion of the process without the need for extended shutdowns.

The expansion of the existing aeration blower system involved serving a nitrification/denitrification conventional activated sludge facility. We evaluated blower technologies and designed aeration system for process air and MBR scour air. We also pre-procured MBR blowers and assigned the procurement contract to the Contractor, which would hold them responsible to coordinate delivery and installation requirements of the equipment. This also allowed the manufacturer warranty to flow through the Contractor's contract.

We identified a comprehensive equipment procurement strategy for cost control and schedule risk mitigation to eliminate uncertainty in costs and which allowed manufactures to start production of major equipment items early.



Wastewater Treatment Plant Expansion and Nutrient Removal Upgrades

CITY OF SAN MATEO, CA

CLIENT CONTACT

City of San Mateo, CA
Brad Underwood, Former Public Works Director,
bbu@ivgid.org,
775-832-1269

DATES

Design 2016 - 2020	Construction 2019 - Est. 2024
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Lessons learned on construction sequencing and maintaining plant operations is valuable experience that we bring to your project.

HDR is providing the City with a state-of-the-art, reliable wastewater treatment plant that will be known as the “Gem of the Bay.”

HDR completed schematic design and final design for the entire liquid wastewater treatment plant stream. We are currently providing engineering services during construction. We evaluated greenhouse gas emissions to recommend treatment optimization, sidestream treatment, and treatment upgrades. Upgrades involved headworks, primary sedimentation tanks, equalization basin, biologically active ballasted sedimentation (BioActiflo™) for wet weather treatment, chemical storage and feed facilities, BNR and MBR treatment, disinfection and Title 22 recycled water facilities, a two-story administration and operations building, a warehouse, and other treatment plant support facilities.

The BNR and MBR were designed to handle peak flows during normal conditions. The BNR design was based on meeting a TN limit of 10 mg/L with potential expansion to

meet a TN limit of 4 mg/L and TP limit of less than 1 mg/L. This allows the plant to be fully compliant with their NPDES permit and potential stricter nutrient limits.

We worked closely with the Contractor, O&M, and the City’s Program Manager during schematic design, final design, permitting, subcontractor and vendor bidding, and construction. By working with the O&M staff and construction team, we were able to minimize any shutdowns needed. We closely coordinated with Operations staff to convert the existing aeration basins into flow equalization basins during project implementation to maintain continuous plant operation while performing needed repairs and improvements for the process conversion.

We hosted progress and design review meetings to collaborate on key decisions with the City, Program Manager, and CMAR Contractor. The BIM 3D model provided reviewers with a deeper understanding of the integrated consolidated design to facilitate design reviews, change impacts, and mitigate risks.



Main Plant Digester Cleaning and Rehabilitation

SANITARY DISTRICT NO 5 OF MARIN COUNTY

Sanitary District No.5 of Marin County (District) owns and operates the Main Treatment Plant, which provides secondary treatment of domestic and commercial wastewater collected from the Town of Tiburon and the City of Belvedere and surrounding, unincorporated areas. The Main Plants collection system consists of 28.5 miles of gravity sewer line, 2.4 miles of force main and 22 pump stations within its service area.

HDR designed rehabilitation improvements to the secondary and primary digesters, which included lids and pipelines to the digester. Both digesters were taken out of service to be cleaned and inspected.

CLIENT CONTACT

Sanitary District No.5 of Marin County
 Mr. Tony Rubio, District Manager,
 415-435-1501,
 trubio@sani5.org

DATES

2022 - 2024



Structural enhancements and mechanical upgrades formed substantial components of this project, and aimed to fortify infrastructure integrity and enhance operational efficiency.

Aeration Basins Diffuser Replacement & Seismic Upgrades

CENTRAL CONTRA COSTA SANITARY DISTRICT (CENTRAL SAN)

HDR provided detailed design and bid phase services for the recommended aeration basins improvements identified in the preliminary design report prepared by HDR, which included aeration basin and north and south selector channels seismic and structural improvements, air wasting valve system improvements, aeration basin diffuser replacement and aeration system improvements, aeration basin drainage and gate rehabilitation, north and south selector channel rehabilitation, return activated sludge (RAS) pipeline improvements, and mixed liquor channel gate replacement.

CLIENT CONTACT

PDR PHASE
 Nitin Goel,
 Senior Engineer
 925-229-7301
 ngoel@centralsan.org

DESIGN & CONST. PHASES
 Will Grant,
 Associate Engineer
 925-229-7189
 wgrant@centralsan.org

DATES

PDR	DESIGN	CONSTRUCTION
2019 - 2022	2022 - 2023	2023 - Ongoing



Aeration basins are a critical process for water reclamation facilities and need to be maintained during construction. HDR upgraded Central San's aeration basins with long-term function and structural enhancement in mind.

4.

Key Personnel and Sub-Consultants

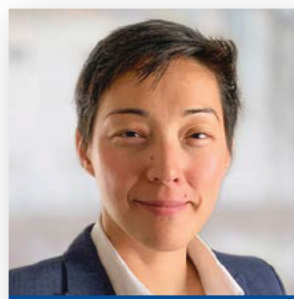
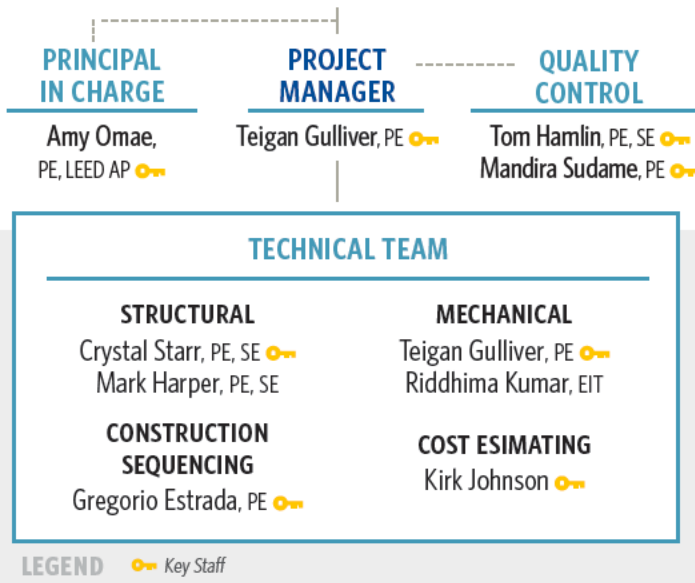


Key Personnel & Sub-Consultants

We have assembled an experienced team of fully committed staff that will work in partnership with your staff. The organizational chart to the right provides the names of each proposed team member. The individuals proposed for this project represent our best and most qualified staff to support SOCWA with this important project. Personnel profiles for key team members are provided on the following pages. Complete resumes for key personnel listed on our organizational chart are available in the Appendix.

The Right Leadership for Successful Project Delivery

Our team is built around a simple yet powerful concept: Put the best individuals into the roles where they can add the highest value to SOCWA's RTP Primary and Aeration Area Grating and Gates Replacement project. **Teigan Gulliver** will serve as our Project Manager and be your primary point of contact for this project. She has demonstrated technical expertise, leadership and ability to deliver this Project. With projects like this, it's easier for staff to get lost in the details and find other areas in which the process can be improved, especially without a clear direction given. Teigan has a firm understanding of the purpose, the goal, and the scope of the project. She will keep the project goal in front of the team throughout the lift of the Project. Teigan brings her technical experiences on primary and secondary treatment process from working at LA Sanitation's Terminal Island Water Reclamation Plant, LA Sanitation's Hyperion Water Reclamation Plant, Orange County Sanitation District's Plant No. 1, City of Westminster's Big Dry Creek Wastewater Treatment Plant, and the St. Vrain Wastewater Treatment Plant. Teigan will lead the HDR team and partner with SOCWA staff to envision innovative ideas and cost effective solutions for your wastewater facility.



TEIGAN GULLIVER, PE
 Project Manager

What truly sets Teigan apart is her approachability and her genuine passion for knowledge sharing. She's not only an expert in her field but also a team player who goes the extra mile to ensure that everyone involved is on the same page.

Teigan is a proven Project Manager with over 15 years of experience in water/wastewater design. Teigan has the demonstrated project management and leadership skills necessary to manage the team of technical experts and deliver this important replacement project. Her dedication to delivering quality projects has made her one of our most trusted project managers.

As Project Manager, Teigan will be involved in all aspects of the project from design through construction. She will monitor and track project progress and direction to deliver the project successfully, while identifying and mitigating potential risks as early as possible. Being based in Southern California, Teigan is readily available and able to meet as frequently as needed and is committed to the project through its entire duration.

- QUYNH HO,
 LA SANITATION (LASAN)

Delivery-Focused Team

The personnel profiles below highlight the qualifications of key personnel who bring valuable insights to your project. Majority of them have either worked on projects for SOCWA and/or its member agencies, and all have worked on similar projects locally and nationally with similar agencies. Our team includes people you know and trust, including Amy Omae, Gregorio Estrada, and Tom Hamlin. **The team is excited and dedicated to continue our work with SOCWA and the success of this project.**



Amy Omae, PE, LEED | Principal In Charge

Amy is a proven Project Manager/Professional Engineer with nearly two decades of experience in wastewater and water master planning, design, and engineering services during construction projects throughout California. Amy promotes a collaborative and transparent environment to receive stakeholder input and understand project drivers. She recognizes that the institutional knowledge retained by SOCWA's engineering, operations, and maintenance staff is extensive and invaluable. **As Principal-in-Charge, Amy will provide**

oversight and assistance to the team to maintain efficient delivery of the work. Amy is dedicated to delivering a quality project that meets or exceeds SOCWA's expectations. She will confirm that quality goals are met and budgets and schedule are maintained.

RELEVANT QUALIFICATIONS

- ✓ SOCWA, Plant 3A Aeration Improvements
- ✓ IRWD, Michelson Water Recycling Plant Tertiary Filters Improvements
- ✓ IRWD, Michelson Water Recycling Plant Ph. 2 Expansion
- ✓ City of San Mateo, Wastewater Treatment Plant Expansion and Nutrient Removal Upgrades



Mandira Sudame, PE | Quality Control

Mandira has more than 20 years of experience in planning, design, construction, condition assessment, and management of wastewater and recycled water facilities. Specialization includes wastewater process design for biological nutrient removal, membrane technology, disinfection, and solids handling. **Mandira recently served as the QA/QC Lead for the City of Thousand Oaks' Tertiary Filter Rehabilitation Project and the Filter Performance Investigation Lead for Irvine Ranch Water District's Michelson**

Water Recycling Plant Tertiary Filters Improvements. As QC Manager, Mandira will offer technical advice, as well as availability for engagement by the project team on a continual basis.

RELEVANT QUALIFICATIONS

- ✓ SOCWA, Plant 3A Onsite Energy Generation
- ✓ IRWD, Michelson Water Recycling Plant Tertiary Filters Improvements
- ✓ IRWD, Michelson Water Recycling Plant Ph. 2 Expansion
- ✓ City of San Mateo, Wastewater Treatment Plant Expansion and Nutrient Removal Upgrades



Tom Hamlin, PE, SE | Quality Control

Tom's 20 years of experience as a structural engineer includes condition assessments, structural investigations, design, plan development, QC reviews, and construction administration for a wide range of structure types, including water/wastewater facilities, mining, industrial, data center, and federal facilities. Tom has extensive experience in performing structural investigations and rehabilitations of existing water/wastewater facilities for clients, including SOCWA, Irvine Ranch Water District, Orange

County Sanitation District and City of San Diego. **Tom is familiar with SOCWA's facilities and treatment systems having served as the Structural Engineer on SOCWA's JBLTP Aeration System Upgrades and Plant 3A Aeration Pipe Header Re-routing projects. He will leverage his knowledge and experience with SOCWA's systems to provide thorough and detailed quality reviews.**

RELEVANT QUALIFICATIONS

- ✓ SOCWA, JB Latham Treatment Plant (JBLTP) Aeration System Upgrades
- ✓ SOCWA, Plant 3A Aeration Pipe Header Re-routing
- ✓ IRWD, Michelson Water Recycling Plant Tertiary Filters Improvements
- ✓ OC SAN, Sludge Dewatering and Odor Control at Plant No. 1 Job No. P1-101
- ✓ City of Billings, Billings Wastewater Nutrient Upgrade and Expansion



Crystal Starr, PE, SE | Structural

RELEVANT QUALIFICATIONS

Crystal is a senior structural engineer with more than 19 years of experience in structural evaluation, engineering, design, and construction support of infrastructure projects related to water, wastewater, municipal utilities, and hydropower. The majority of her expertise in structural design and retrofit of building and tank structures is located in high seismic regions in California, and along the west coast. **Crystal was the Lead Structural Engineer for Central Contra Costa Sanitary District's Diffuser Replacement Seismic**

Upgrades Project, which included the seismic retrofit of the existing Aeration Basin structure and replacement of the existing diffuser system and replacement of various slide gates and finger weirs. Crystal will leverage her experience and knowledge to provide lessons learned and best practices when working with SOCWA staff on this important project.

- ✓ Central Contra Costa Sanitary District, Diffuser Replacement Seismic Upgrades Project
- ✓ City of San Mateo, Wastewater Treatment Plant Expansion and Nutrient Removal Upgrades
- ✓ City of Livermore, Condition Assessment at Livermore Water Reclamation Plant
- ✓ City of Richmond and Veolia Water, WWTP Critical Improvements Project



Gregorio Estrada, PE | Construction Sequencing

RELEVANT QUALIFICATIONS

Gregorio is a recognized leader in wastewater treatment with experience in facility planning, design, construction, and operational management. Gregorio specializes in wastewater treatment processes and has extensive experience managing construction-phase services on complex wastewater projects. Gregorio brings extensive experience delivering projects for SOCWA, including the JB Latham Aeration and Cogeneration Improvements and several projects at Plant 3A under SOCWA. In addition, Gregorio

brings 24 years of experience delivering projects at treatment plants across Southern California. Gregorio has also worked alongside your member agencies – Irvine Ranch Water District and Santa Margarita Water District. **Gregorio served as the Principal in Charge and Construction Sequencing Lead for Irvine Ranch Water District's Michelson Water Recycling Plant Tertiary Filters Improvements. Gregorio's first-hand experience addressing issues in the field during construction, coupled with his design expertise, makes Gregorio the ideal candidate to lead construction sequencing for this project.**

- ✓ IRWD, Michelson Water Recycling Plant Tertiary Filters Improvements
- ✓ City of Thousand Oaks, Tertiary Filter Rehab
- ✓ SOCWA, JB Latham Aeration and Cogeneration Improvements
- ✓ SOCWA, Plant 3A Aeration Improvements
- ✓ IRWD, Michelson Water Recycling Plant Ph. 2 Expansion
- ✓ City of San Mateo, Wastewater Treatment Plant Expansion and Nutrient Removal Upgrades



Kirk Johnson | Cost Estimating

RELEVANT QUALIFICATIONS

Kirk has 30 years of experience in commercial, industrial, and public works construction; most recently, he was responsible for at risk design-build estimating and consulting in the Western United States with a primary focus on alternative delivery for water and wastewater projects. His background includes management roles, consulting, conceptual cost estimation, bidding, and negotiating on projects as large as \$1 billion. He is proficient in several industry-focused software packages: Sage Timberline Estimating and Accounting,

HCSS HeavyBid, MCACES/MII (USACE), Success Estimator (NAVFAC), Primavera P6 / PCM Contract Management, Microsoft Project and AutoCAD, Civil 3d, and Assemble. **Kirk will be responsible for providing estimates of probable construction costs and will utilize his expertise in cost estimating process and procedures to prepare SOCWA for future costs.**

- ✓ Eastern Municipal Water District, Regional Wastewater Reclamation Facilities Rehab Study
- ✓ US Army Corps of Engineers, FY13 Wastewater Treatment Plant, Joint Base Lewis McChord
- ✓ Naval Facilities Engineering Command (NAVFAC) Pacific, FY08 Wastewater Treatment Plant Repairs & Upgrade

5.

Pricing



05 Pricing



**South Orange County Wastewater Authority
Primary and Aeration Area Grating and Gates
Estimated Level of Effort and Fee**

TASKS		LEVEL OF EFFORT													
No.	Description	Principal In Charge	Project Manager	QA/QC	Structural Lead	Mechanical Lead	Construction Sequencing Lead	Cost Estimator	Sr. Project Engineer	Project Engineer	CADD Staff	CADD Manager	Doc Prod Spec	Project Accountant	Total Labor
		<i>Client Billing Rates</i>													
		\$320	\$275	\$340	\$320	\$275	\$340	\$280	\$265	\$180	\$150	\$245	\$140	\$200	\$228
1	Project Management														
1.1	Kickoff Meeting (in person)		8		3		4								15
1.2	Project Management Plan		11										11		22
1.3	Project meetings & coordination		20												20
1.4	Project monitoring & reporting		20											27	47
1.5	QA/QC & PARR	11	6	11	12										40
	Subtotal 1 Project Management	11	65	11	15	0	4	0	0	0	0	0	11	27	144
2	Data Collection and Document Review														
2.1	Request, Compile & Review Data		4		4	4	4		4	6			4		30
2.2	Site Visit and staff interviews (one day)		4		4	4	3		4	3					18
	Subtotal 2 Data Collection and Document Review	0	8	0	8	4	7	0	8	9	0	0	4	0	48
3	Preliminary Design														
3.1	Bypass/Sequencing Conceptual Plan						11			16					27
3.2	Gates Alternatives Analysis					11				33					44
3.3	Structural Improvements Analysis				17			16	33						66
3.4	Design Workshop		11		4	5	5	5	22						52
3.5	Implementation Plan		5	4	3	11			22						45
	Subtotal 3 Preliminary Design	0	16	4	21	19	27	0	21	126	0	0	0	0	234
4	Final Design														
4.1	50% Design Deliverable (inc. drawings, specs, cost estimate)		11	6	11	22	4	6	22	77	77	11			247
4.2	90% Deliverable (inc. drawings, specs, cost estimate)		11	6	11	22	3	6	22	66	66	4			217
4.3	Bid Set Deliverable (inc. drawings, specs, cost estimate)		11	5	11	11	2	5	11	44	44	3			147
4.4	Constructability Review		9		5	3	3	3	2	17					42
4.5	Construction Sequencing and Bypass Plan		9	2		11				17					39
	Subtotal 4 Final Design	0	51	19	38	58	23	20	57	221	187	18	0	0	692
TOTAL, hours		11	140	34	82	81	61	20	86	356	187	18	15	27	1,118
TOTAL, dollars															

6.

Conflicts of Interest





ATTACHMENT D
AFFIDAVIT CERTIFYING NO CONFLICTS OF INTEREST

The undersigned declares:

I am the Vice President of HDR Engineering, Inc. (“Proposer”), the party making the foregoing bid.

As a California public agency, SOCWA is subject to conflicts of interest rules under the Political Reform Act (“PRA”) and California Government Code Section 1090 (“Section 1090”).

The PRA prohibits a public official at any level of state or local government from making, participate in making, or in any way attempt to use their official position to influence a governmental decision in which the official has a financial interest. A public official has a financial interest in a decision if it is reasonably foreseeable that the decision will have a material financial effect on the public official, a member of the public official’s immediate family, or on: (a) a business in which the public official has a direct or indirect investment worth \$2,000 or more; (b) real property in which the public official has a direct or indirect interest worth \$2,000 or more; (c) any source of income of \$500 or more received within 12 months prior to the time when the decision is made; (d) a business in which the public official is a director, officer, partner, trustee, employee, or has a management position; or (e) the donor of a gift to the public official of \$250 within 12 months prior to the time when the decision is made.

Section 1090 provides that public officials and public employees may not be “financially interested” in “any contract made by them in their official capacity.”

By signing below, Bidder acknowledges that it (i) has considered persons with whom it has business relationships as to the potential for such persons to have a conflict of interest, (ii) has considered the requirements and provisions of the PRA and Section 1090, (iii) certifies that it does not know of any facts which constitute a violation, or should be further investigated to prevent a violation of those provisions, and (iv) agrees that Bidder will immediately notify SOCWA if it becomes aware of any such fact at a later date.

Any person executing this declaration on behalf of a Bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the Bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on 04/25/24, at Irvine [city], CA [state].

Signature: 

Title: Vice President

7.

Non-Collusion Affidavit





ATTACHMENT B
NON-COLLUSION AFFIDAVIT

The undersigned declares:

I am the Vice President of HDR Engineering, Inc., the party making the foregoing bid.

The bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation. The bid is genuine and not collusive or sham. The bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid. The bidder has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or to refrain from bidding. The bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder. All statements contained in the bid are true. The bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof, to effectuate a collusive or sham bid, and has not paid, and will not pay, any person or entity for such purpose.

Any person executing this declaration on behalf of a bidder that is a corporation, partnership, joint venture, limited liability company, limited liability partnership, or any other entity, hereby represents that he or she has full power to execute, and does execute, this declaration on behalf of the bidder.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct and that this declaration is executed on 04/25/24, at Irvine [city], CA [state].

Signature: 

Title: Vice President

8.

Certifications



08 Certifications

- ✓ HDR is not aware of any actual or potential conflict of interest that exists or may arise by executing the contract or performing the work that is the subject of this RFP.
- ✓ HDR meets or is capable of the insurance requirements specified in the RFP. A sample of HDR's Certificate of Liability Insurance is included on the following page.
- ✓ All HDR field personnel will be paid no less than the prevailing wage during the assessment and construction of this project. HDR will comply with all with all applicable local, state, and federal laws or regulations governing the labor or services to be provided.
- ✓ HDR has reviewed and understands SOCWA's standard professional services agreement. Upon selection, HDR would appreciate the opportunity to discuss some of the contract terms with SOCWA. Per the RFP, respondents must list any exceptions or suggested modifications to the form of contract in its proposal. Please see our proposed modifications in the Appendix.
- ✓ To our knowledge, all information provided within our proposal is true, complete and correct.

Anna Lanth, PE
Vice President





Insurance

HDR has maintained professional liability insurance in force continually since 1958 for the protection of clients and us. HDR meets or is capable of the insurance requirements specified in the RFP. A sample of HDR's Certificate of Liability Insurance is below.

		CERTIFICATE OF LIABILITY INSURANCE			DATE (MM/DD/YYYY) 06/16/2021			
THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.								
IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).								
PRODUCER Willis Towers Watson Midwest, Inc. c/o 26 Century Blvd P.O. Box 305191 Nashville, TN 372305191 USA				CONTACT NAME: Willis Towers Watson Certificate Center PHONE (A/C, No, Ext): 1-877-945-7378 FAX (A/C, No): 1-888-467-2378 E-MAIL ADDRESS: certificates@willis.com				
				INSURER(S) AFFORDING COVERAGE		NAIC #		
				INSURER A: Liberty Mutual Fire Insurance Company		23035		
				INSURER B: Ohio Casualty Insurance Company		24074		
				INSURER C: Liberty Insurance Corporation		42404		
				INSURER D:				
				INSURER E:				
				INSURER F:				
COVERAGES CERTIFICATE NUMBER: W21262337 REVISION NUMBER:								
THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.								
INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY			TB2-641-444950-031	06/01/2021	06/01/2022	EACH OCCURRENCE \$ 2,000,000	
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR						DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000	
	<input checked="" type="checkbox"/> Contractual Liability	Y	Y				MED EXP (Any one person) \$ 10,000	
	<input checked="" type="checkbox"/> Deductible: \$100,000						PERSONAL & ADV INJURY \$ 2,000,000	
GEN'L AGGREGATE LIMIT APPLIES PER:							GENERAL AGGREGATE \$ 4,000,000	
<input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PROJECT <input checked="" type="checkbox"/> LOC							PRODUCTS - COMP/OP AGG \$ 4,000,000	
OTHER:							\$	
A	AUTOMOBILE LIABILITY			AS2-641-444950-041	06/01/2021	06/01/2022	COMBINED SINGLE LIMIT (Ea accident) \$ 2,000,000	
	<input checked="" type="checkbox"/> ANY AUTO						BODILY INJURY (Per person) \$	
	<input type="checkbox"/> OWNED AUTOS ONLY	<input type="checkbox"/> SCHEDULED AUTOS	Y				Y	BODILY INJURY (Per accident) \$
	<input type="checkbox"/> HIRED AUTOS ONLY	<input type="checkbox"/> NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident) \$
<input checked="" type="checkbox"/> Comp/Co11	<input checked="" type="checkbox"/> Ded. \$1,000			\$		\$		
B	UMBRELLA LIAB			E00(22)57919363	06/01/2021	06/01/2022	EACH OCCURRENCE \$ 10,000,000	
	<input checked="" type="checkbox"/> EXCESS LIAB	<input type="checkbox"/> OCCUR	Y				Y	AGGREGATE \$ 10,000,000
	<input type="checkbox"/> DED	<input checked="" type="checkbox"/> RETENTION \$ 0						\$
C	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY			WA7-64D-444950-011	06/01/2021	06/01/2022	<input checked="" type="checkbox"/> PER STATUTE <input type="checkbox"/> OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	Y/N	N/A				Y	E.L. EACH ACCIDENT \$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below	No						E.L. DISEASE - EA EMPLOYEE \$ 1,000,000
								E.L. DISEASE - POLICY LIMIT \$ 1,000,000
DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required) Workers Compensation Deductible - \$250,000 Certificate Holder is named as Additional Insured on General Liability, Automobile Liability and Umbrella/Excess Liability on a Primary, Non-contributory basis where required by written contract. Waiver of Subrogation applies on General Liability, Automobile Liability, Umbrella/Excess Liability and Workers Compensation where required by written contract. Umbrella/Excess policy is Follows Form over General Liability, Auto Liability and Employers Liability.								
CERTIFICATE HOLDER				CANCELLATION				
Sample				SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.				
				AUTHORIZED REPRESENTATIVE 				
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ACORD 25 (2016/03)		The ACORD name and logo are registered marks of ACORD						
		SR ID: 21227135		BATCH: 2132293				



APPENDIX

APPENDIX INCLUDES THE FOLLOWING

- ✓ Contract
- ✓ Addenda Acknowledgment
- ✓ Resumes

Contract

HDR and SOCWA have executed several agreements in the past. We recommend these agreements be used as the basis for this project, which will facilitate a quick start of work. HDR has reviewed and understands SOCWA’s standard professional services agreement. Upon selection, **HDR would appreciate the opportunity to discuss some of the contract terms with SOCWA.** HDR respectfully proposes the following modifications to SOCWA’s standard professional services agreement. We propose deleting the strikethrough language highlighted in yellow and adding/ revising the language **bolded in red**. We are available to discuss any of the requested changes with you.



No.	Section Title	Recommendations to Agreement
2.1	Specific Services	CONTRACTOR shall perform those services which are described in the Scope of Work described in Exhibit A hereto, which is incorporated by reference (the “Scope of Work”), in connection with the _____ (the “Project”). SOCWA shall make available to CONTRACTOR at no cost all technical data in SOCWA’s possession, including maps, past reports, prior studies, operating data, and other information reasonably required by CONTRACTOR to perform the Scope of Work. CONTRACTOR is entitled to rely upon the accuracy and completeness of such technical data, provided that CONTRACTOR shall provide SOCWA prompt notice of any known defects in such technical data. CONTRACTOR will determine the method, details and means of performing the Scope of Work. The standard of care for CONTRACTOR’s services shall be the care and skill ordinarily used by members of CONTRACTOR’s profession practicing under the same or similar circumstances at the same time and in the same locality.
5.6	Required Provisions	5.6.4 The general liability and automobile liability policies required hereunder shall be endorsed to include contractual liability.
5.7	Deductibles	Any deductibles or self-insured retentions must be declared in writing and approved by SOCWA. At the option of SOCWA, either: the insurance provider(s) shall reduce or eliminate such deductibles or self-insured retentions as respects the SOCWA and its Member Agencies, and each of their directors, officers, employees, and representatives; or the CONTRACTOR shall provide a financial guarantee satisfactory to SOCWA guaranteeing payment of losses and related investigations, claim administration and defense expenses.
6.1	General Indemnity	6.1.1 CONTRACTOR shall cooperate with and do whatever is necessary to protect SOCWA Indemnitees from any such Claims. CONTRACTOR will be compensated for such support unless the Claim is subject to CONTRACTOR’s indemnification obligations in this Section 6.



6.1	General Indemnity	<p>6.1.2 CONTRACTOR shall defend SOCWA Indemnitees, at CONTRACTOR's own cost, expense and risk, from any and all such aforesaid Claims or other proceedings of any kind that may be brought or instituted against SOCWA Indemnitees that are subject to CONTRACTOR's indemnification obligation as set forth in Section 6.1 above. The cost to defend charged to CONTRACTOR shall not exceed the CONTRACTOR's proportionate percentage of fault, except that in the event that one or more defendants is unable to pay its share of defense costs due to bankruptcy or dissolution of the business, CONTRACTOR must meet and confer with the other parties regarding unpaid defense costs. CONTRACTOR and SOCWA Indemnitees shall be jointly represented by legal counsel, unless there is a conflict of interest, and CONTRACTOR shall pay SOCWA Indemnitees' reasonable attorneys' fees and costs as they are incurred. SOCWA Indemnitees shall be consulted regarding and shall approve the selection of legal counsel. Should separate legal counsel be necessary for SOCWA Indemnitees, as determined by SOCWA, CONTRACTOR shall pay for the reasonable attorneys' fees and costs including expert witness fees, as such fees and costs are incurred and within thirty (30) days of receipt of an invoice, for SOCWA Indemnitees' legal counsel in addition to CONTRACTOR's own legal fees and costs. In all circumstances, SOCWA Indemnitees reserve the right to retain their own attorneys at its own cost. CONTRACTOR shall not agree without SOCWA Indemnitees' prior written consent to any settlement on SOCWA Indemnitees' behalf.</p>
6.1	General Indemnity	<p>6.1.4 CONTRACTOR shall pay and satisfy, in accordance with CONTRACTOR's degree of fault, any judgment, award, liability or decree that may be awarded, imposed or rendered against Indemnified Parties as a result of any Claims whether legal, administrative or otherwise, including any settlement related thereto.</p>
7.1	Termination for Default	<p>If either party defaults in the performance of this Agreement or materially breaches any of its provisions, and if such default or breach is not cured within a period of ten (10) days following written notice thereof, the non-breaching party may immediately terminate this Agreement by giving written notification to the breaching party. Termination will take effect immediately on receipt of notice by the breaching party or five (5) days after mailing of notice, whichever occurs first. For the purposes of this paragraph..</p>
8.1	Documents and Drawings Prepared by CONTRACTOR	<p>All original drawings and other documents, including detailed calculations developed for the Project and/or as part of the services provided herein, shall be furnished to and become the property of SOCWA upon payment in full or as otherwise provided herein. These materials are furnished for SOCWA's use in connection with the Project and/or work provided for in this Agreement and shall become SOCWA's property upon receipt. Any modification or reuse of such materials for purposes other than those intended by this Agreement shall be at SOCWA's sole risk and without liability to CONTRACTOR. All documents and information generated by CONTRACTOR and any of CONTRACTOR's subcontractors pursuant to this Agreement shall remain confidential and shall not be copied, distributed, or otherwise provided or referenced by CONTRACTOR or CONTRACTOR's subcontractors to any third parties other than with SOCWA's written consent, or as compelled by court order. CONTRACTOR may retain a copy of all reports and documents for its files.</p>



Addenda Acknowledgement

Appendix B

SOUTH ORANGE COUNTY WASTEWATER AUTHORITY

ADDENDUM No. 1

TO REQUEST FOR PROPOSALS

FOR RTP Primary and Aeration Area Grating and Gates

**THE PROPOSER SHALL EXECUTE THE CERTIFICATION AT THE END OF THE
ADDENDUM AND SHALL ATTACH THE ADDENDUM TO THE PROPOSAL (NOT TO BE
INCLUDED AS PART OF THE PAGE COUNT).**

Revised Scope of Work attached hereto.

DATED: 3/4/2024


Jeanette Cotinola, CPCM

BIDDER'S CERTIFICATION

I acknowledge receipt of the foregoing Addendum No. 1 and accept all conditions contained herein.

DATED: April 25, 2024

BIDDER: HDR Engineering, Inc.

BY:  Vice President

ATTACHMENT A REVISED 2.29.2024 BACKGROUND/GOAL/SCOPE OF WORK

BACKGROUND

The Regional Treatment Plant (RTP) is a conventional activated sludge treatment plant with a secondary treatment design capacity of 12 million gallons per day (MGD). The plant was constructed in 1982. The Primary Sedimentation Tanks remove both settleable solids and floatable materials from the influent wastewater. Water sprays move the floating materials towards a helical style scum collection system to remove floatable solids in the primary settling process. A portion of the secondary effluent is reclaimed for irrigation. All effluent not reclaimed is charged to the Pacific Ocean through the Aliso Creek Ocean Outfall. RTP also receives solids from the Coastal Treatment Plant and El Toro Water District for digestion, dewatering and ultimate disposal.

The primary area grating, and gates have deteriorated and are not functioning properly. Staff have laid plywood over covers where main foot traffic occurs because of concerns about cover safety. Similarly, the grit chamber influent and effluent channel covers have also failed, and temporary plywood covers have been used as a safety measure.

The existing aeration influent and effluent have existing plates as flow stopping devices. Plates are operated and removed at least once a year. This mitigates the issue of the plates getting stuck on the effluent side. In general, exercising the gates is the primary mitigation measure. Otherwise, the gates will get stuck and making removal challenging.

PROJECT ELEMENTS

Primary Area

- Replace grit grating and rebates, primary influent and effluent gates, and primary effluent channel grating, and primary area grating.
- Replace existing primary influent slide plates with weir gates with manual operators.
- Replace effluent slide plates with slide gates with manual operators (three per tank).
- Evaluate construction feasibility, bypassing, and sequencing options to minimize disruption to the treatment plant.

Aeration Area

- Where the new gates require modification to the existing deck grating, the design shall replace five (5) feet of grating and substructure around all sides of the new gate to ensure foul air capture is maintained after the gates are installed.
- Replace six influent gates with weirs or slide gates, evaluate, and recommend best option for this application.

- Modify odor boxes as necessary for installation of gate operator and concrete surface repairs.
- Replace effluent gates, evaluate different alternatives to take the existing structure, grating support and pipe support into consideration.
- Replace six drain valves in each of the aeration tank with corrosion resistant material, including bulkhead system to seal off the leaking step feed gates.
- Replace the existing gates feeding into the RAS channel and evaluate possible options to replace gates.
- Evaluate construction feasibility, bypassing, and sequencing options to minimize disruption to the treatment plant.

SCOPE OF SERVICES

Tasks are to include the following:

- I. Project Management and Progress Meetings. FIRM shall conduct virtual or in-person monthly progress meetings with SOCWA staff. The primary purpose of the meetings is to review schedule, task progress, and outstanding action items. The FIRM shall prepare the agenda, the action item list, and the decision log for each meeting. FIRM shall plan for a maximum of 9 progress meetings. The kickoff meeting will be conducted in person at the Regional Treatment Plant. For more details on progress meetings please see RFP section 1.7.
- II. Data Collection and Document Review. SOCWA will provide the FIRM with available record drawings and previous studies.
- III. Design Workshop. This workshop shall include bypass/sequencing concept plan, and also including gates alternative analysis. SOCWA will take four weeks to review the submittal and return comments. FIRM shall prepare an implementation plan showing how work can be done while maintaining the facility in service.
- IV. 50% Submittal. This submittal shall address all SOCWA's comments from the Design Workshop. This submittal shall also include comments returned from the Design Workshop with the completed plans, specifications, and cost estimate. SOCWA will take four weeks to review the submittal and return comments.
- V. 90% Submittal. The 90% submittal shall address all SOCWA's comments from the 50% submittal. This submittal shall also include the same elements as the 50% submittal with the completed plans, specifications, and cost estimate. SOCWA will take four weeks to review the submittal and return comments.
- VI. Constructability Review. This shall be in person and a site walk shall be made prior to discussions on Bid Set of documents.

VII. Bid Set. FIRM shall provide the complete bid set with the completed plans, specifications, and cost estimate. This Bid Set shall include SOCWA's comments from the Design Workshop, 50% Submittal, 90% Submittal and constructability review.

VIII. Technical Specifications. SOCWA will provide the FIRM with the listing of standard specifications from Division 1 to be used for the project after the 50% submittals review. FIRM is responsible for preparing Section 01010, Summary of Work and Section 01014, Work Restrictions and Sequence. FIRM shall meet with SOCWA to discuss coordination of specifications sections referenced in the technical specifications. FIRM shall submit required information for review at the 90% submittal.

IX. Construction Sequencing and Bypass Plan. FIRM shall evaluate the need to bypass the influent channel for the grit grating work. Bypass of the primary effluent channel and the ability to feed the interstage pumps. The minimum number of tanks in service and sequence to stagger the work between each tank are some examples of the sequence and bypass.



Teigan Gulliver, PE | Project Manager / Mechanical

Teigan is a proven Project Manager with over 14 years of experience in water/wastewater design. Teigan has the demonstrated project management and leadership skills necessary to manage the team of technical experts and deliver this important replacement project. Her dedication to delivering quality projects has made her one of our most trusted project managers. As Project Manager, Teigan will be involved in all aspects of the project from design through construction. She will monitor and track project progress and direction to deliver the project successfully, while identifying and mitigating potential risks as early as possible. Being based in Southern California, Teigan is readily available and able to meet as frequently as needed and is committed to the project through its entire duration.

EDUCATION

Masters, Environmental Engineering, Colorado School of Mines, 2017

Bachelors, Civil Engineering, University of Minnesota, Twin Cities, 2008

REGISTRATIONS

Professional Engineer - Civil, CA, No. 95859

Professional Engineer - Civil, CO, No. 0049979

PROFESSIONAL AFFILIATIONS

American Society of Civil Engineers (ASCE)

Engineers Without Borders

Water Environment Federation

INDUSTRY TENURE

15 years

RELEVANT EXPERIENCE

Los Angeles Bureau of Engineering, Staff Augmentation | Los Angeles, CA

Project Manager. Teigan is leading efforts to provide staff augmentation for BOE on several water and wastewater tasks. Teigan is responsible for overseeing staff engineering efforts, assigning appropriate engineers for BOE tasks, and overseeing subconsultant efforts.

Orange County Sanitation District, Sludge Dewatering and Odor Control at Plant No. 1 Job No. P1-101 | Fountain Valley, CA

Project Engineer. The project includes the design and construction support services for replacement of the existing sludge dewatering systems with a new system. Teigan's responsibilities involved, start-up, optimization, O&M system training, and commissioning services during construction.

St. Vrain Sanitation District, Wastewater Treatment Plant Expansion | Firestone, CO

Discipline Lead Engineer. Following the recommendations of the Master Plan Update prepared by HDR, SVSD and HDR designed and constructed the liquid and solids recommended improvements from the Master Plan with a CMAR alternative delivery method. Teigan lead teams to design the new solids processes, including WAS storage, thickening, ATAD, dewatering, odorcontrol, and solids loadout facilities.

Long Beach Utilities District, S-7 Sewer Rehabilitation Project | Long Beach, CA

Project Manager. Design and Construction Services for the rehabilitation of LBWD's S-7 sewer lift station located at 349 Lakeview Ave., in the City of Long Beach. The station was constructed in 1929 and last rehabilitated in 2000. Currently the lift station is equipped with two dry pit, 14-HP submersible pumps, an 8-inch DIP FM, and a 2,600-gal wet well.

Los Angeles County Department of Public Works, Surfrider Pump Station | Los Angeles County, CA

Deputy Project Manager. HDR provided a conceptual design report for the implementation of a new sewer pump station and forcemain for the Sewer Maintenance Division. The project proposed alternatives, provided cost estimates, facilitated collaborative workshops, developed a bypass and sequencing plan, and developed a final conceptual design report. Teigan's role as Deputy Project Manager performed PM duties with project team coordination, project schedule updates, presenting alternatives and facilitating workshops, and development of the final report.

TEIGAN GULLIVER (CONTINUED)

Los Angeles County Department of Beaches & Harbors, Condition Assessment Project | Los Angeles County, CA

Deputy Project Manager. HDR performed a high level condition assessment of 11 sewer pump stations, owned by the LA County Department of Beaches and Harbors. The project involved development of an assessment plan, performing field work, development of condition results, development of site-specific alternatives for each pump station, facilitating collaborative workshops, and development of final report with recommendations. Teigan's role as Deputy Project Manager performed PM duties with project team coordination, project schedule updates, presenting alternatives and facilitating workshops, and development of the final report.

Los Angeles Bureau of Engineering, Hyperion Headworks Hydraulic Modeling | Los Angeles County, CA

Project Manager. HDR provided hydraulic modeling services to the City of LA on the Hyperion Headworks Overflow Bypass Project. Flow scenarios were developed in collaboration with plant staff and results presented. Plant staff and engineering staff were involved in the decision-making process for best alternative selection. Teigan's role involved facilitation the collaboration process, development of model, and documentation of project outcomes.

Parker Water & Sanitation District, South Water Reclamation Facility Treatment Master Plan | Parker, CO

Deputy Project Manager. HDR provided engineering services for the development of a South Water Reclamation Facility (SWRF) Treatment Master Plan. The District's long term goal for water reclamation previously included the decommissioning of the SWRF upon completion of any one of the ongoing and/or planned expansions of the North Water Reclamation Facility (NWRF). During the permitting phase of the current NWRF expansion, revised permitting requirements were documented by the Colorado Department of Public Health and Environment (CDPHE). Since the District's discharge permits for the NWRF and the SWRF are combined, continued operation of the SWRF must be evaluated. This assessment shall include an evaluation of existing regulatory requirements, evaluation of permit compliance based on current and future flows, and an alternatives analysis to identify potential treatment process upgrades to maintain continued operation. Reevaluating the District's long term goal for water reclamation is being driven by regulatory conditions along with a rapid increase in service area development, which requires non-interruptible treatment of wastewater.



Amy Omae, PE, LEED AP | Principal in Charge

Amy is a proven Project Manager/Professional Engineer with nearly two decades of experience in wastewater and water master planning, design, and engineering services during construction projects throughout California. Amy promotes a collaborative and transparent environment to receive stakeholder input and understand project drivers. She recognizes that the institutional knowledge retained by her clients' engineering, operations, and maintenance staff is extensive and invaluable.

EDUCATION

Masters, Environmental Engineering, University of Miami, 2006

Bachelors, Chemistry, University of Miami, 2004

REGISTRATIONS

Professional Engineer - Civil, CA, No. 76824

LEED Accredited Professional, No. 10328834

PROFESSIONAL AFFILIATIONS

Water Environment Federation

Orange County Water Association

American Society of Civil Engineers (ASCE)

WaterReuse Association

INDUSTRY TENURE

19 years

RELEVANT EXPERIENCE

South Orange County Wastewater Authority, 3A Treatment Plant Aeration Header Rerouting

Project Engineer. Responsible for design of aeration header rerouting and providing engineering services during construction. This project included rerouting the aeration header that conveys air to the secondary aeration basins and distribution channel above-grade because the existing header was leaking due to uneven settling. A detailed construction sequence was developed to minimize plant downtime due to the critical nature of this treatment process to the overall plant operation. HDR provided engineering services during construction for submittal reviews and RFIs.

South Orange County Wastewater Authority, Joint Regional Treatment Plant Effluent System Evaluation

Staff Engineer. Responsible for supporting engineering tasks, and compiling and organizing data. SOCWA has contracted HDR to evaluate the JRTP effluent disposal system. JRTP secondary effluent can be either disposed of to the Pacific Ocean or further treated and used to supply the recycled water system serving MNWD. The purpose of the evaluation is to identify a cost-effective alternative to augment the JRTPs effluent disposal system hydraulic capacity and to increase the equalization (EQ) basin storage capacity to eliminate the potential for overflows during peak wet-weather flow events.

Irvine Ranch Water District, Michelson Water Recycling Plant Tertiary Filter Improvements | Irvine, CA

Project Manager, Senior Engineer. Amy was responsible for managing the project team, developing the rehabilitation design for the most complex design area, which had limited access, unknown conditions, and requiring multiple shutdowns as well as developing the construction sequence for the project. IRWD contracted HDR to perform the preliminary and final design for the rehabilitation of the tertiary filtration system and consists of the tertiary filters, backwash supply, spent backwash, air scour blower, and air compressor.

City of San Mateo, Nutrient Removal and Wet Weather Flow Management Upgrade and Expansion | San Mateo, CA

Task Lead. As a task lead, Amy was responsible for coordinating the technical issues and evaluating equipment technology and layout alternatives related to the expansion in the biological nutrient removal and membrane bioreactor areas. She collaborated with other task leads to make the new elements fit and interconnect with other facilities on this multi-faceted project. HDR provided schematic design, final design, and bid phase services for \$400 million in improvements to the San Mateo/Estero Municipal Improvement District (EMID) Wastewater Treatment Plant. The project included a new headworks, primary sedimentation basins, biological nutrient removal (BNR) and MBR facility, electrical building, warehouse.

AMY OMAE (CONTINUED)

Irvine Ranch Water District, Filter Pump Station 2 Header Replacement | Irvine, CA **Project Manager and Project Engineer.**

Amy was responsible for coordinating and collaborating with Irvine Ranch Water District (IRWD), managing the project work, schedule, and team, and developing the design and construction sequence to replace the pump discharge header. HDR was selected to develop the design to replace the corroded discharge header for the Michelson Water Recycling Plant (MWRP) Filter Pump Station No. 2 (FPS-2). FPS-2 is a critical part of the MWRP conventional treatment train to convey up to 22 mgd of secondary effluent. HDR developed a detailed construction sequencing and bypass pumping plan to execute the work while keeping the plant in operation. The resulting transition occurred smoothly and without incident.

Irvine Ranch Water District, Michelson Water Reclamation Plant Phase 2 Expansion | Irvine, CA

Project Engineer and Field Engineer.

Responsible for design of the headworks, channel mixing aeration system, primary influent splitter box, and site civil and grading. During construction, Amy performed field engineering services to address RFIs, change orders, submittal reviews, and provide startup and inspection services. HDR provided conceptual design, preliminary design, final design, and construction services for this award-winning \$114 million project that expanded capacity of the Michelson Water Recycling Plant to 33 mgd. Improvements included: influent sewers, new headworks, expansion of the primary sedimentation tanks, new primary effluent pumping station and flow control, modified flow equalization basins, secondary treatment expansion with new membrane bioreactor (MBR) facility, new high-rate clarifier to treat filter backwash, new ultraviolet (UV) disinfection system, reclaimed water pumping, modifications to chlorine contact basins, chemical feed systems, new pumping and other ancillary facilities, and electrical modifications.

City of San Buenaventura, Ventura Water Recycling Facility (VWRF) Blower Project | Ventura, CA

Deputy Project Manager and Project Engineer.

Responsible for monitoring project metrics, managing the team, leading the preliminary and final design effort, and leading the Aeration Verification Study. The City contracted HDR to evaluate the existing and future air demands and design a more efficient aeration system to replace the existing single-stage aeration blowers. The project involved demolition of the existing aeration blowers and building, construction of a new blower building with high-speed turbo blowers, large-bubble mixing for anoxic tanks, and centrate transfer pumps. HDR developed a biological process model using BioWin to determine current and future aeration requirements in consideration of the City's plan to evaluate simultaneous nitrification-denitrification for increased nitrogen removal. HDR designed modifications to the existing aeration droplegs to accommodate flow control valves and meters to facilitate this evaluation and allow the City more automated control and operational flexibility.

Camarillo Sanitary District, Alternatives Study and Condition Assessment of SS-5037 Pleasant Valley Road Sewer Force Main Assessment and Preliminary Design Services, Camarillo, CA

Deputy Project Manager and Senior Engineer.

Amy performed physical condition assessment and alternatives evaluation (pipeline and overflow basin) to determine if there are other alternatives to constructing a secondary parallel pipeline estimated at \$16M. She developed the pre-design for the recommended alternative and updated the Emergency Response Plan for PVR FM.



Mandira Sudame, PE | Quality Control

Specializing in pump station project and sewer pipelines, Mandira understands how to design wastewater facilities that staff can easily operate and run efficiently. Her project experience includes condition assessment, pump station and large pipeline design, and construction support services. Recently, Mandira managed the condition assessment and recommended upgrades for 23 sewer pump stations for the City of San Diego. She possesses 23 years of experience in projects throughout Southern California. With her experience and creativity, and strong technical background, Mandira offers our clients a practical design approach as well as easy-to-operate facilities.

EDUCATION

Masters, Civil Engineering,
Pennsylvania College of
Technology, Penn State, 2000

Bachelors, Civil Engineering,
Birla Vishvakarma
Mahavidyalaya Engineering
College (BVM), 1998

REGISTRATIONS

Professional Engineer, CA,
No. 70397-C

PROFESSIONAL AFFILIATIONS

Society of Women Engineers
California Water Environment
Association (CWEA)
WaterReuse Association

INDUSTRY TENURE

23 years

RELEVANT EXPERIENCE

South Orange County Wastewater Authority, Plant 3A Onsite Energy Generation | Dana Point, CA

Project Engineer. Ms. Sudame served as the lead engineer to evaluate the impact of adding Fats, Oil and Grease (FOG) to the existing anaerobic digesters gas production. Also, developed a preliminary FOG receiving station design along with facility construction cost.

Irvine Ranch Water District, Michelson Water Recycling Plant Phase 2 Expansion | Irvine, CA

MBR Design Lead. Mandira was the Lead Design Engineer for the 10 mgd MBR including fine screening, aeration system, mixed liquor pumping system, and membrane system. She provided coordination and review of submittals and RFIs. HDR provided conceptual design, preliminary design, final design, and construction services for this award-winning \$114M project that expanded capacity of the Michelson Water Recycling Plant to 33 mgd. Improvements included: influent sewers, new headworks, expansion of the primary sedimentation tanks, new primary effluent pumping station and flow control, modified flow equalization basins, secondary treatment expansion with new MBR facility, new high-rate clarifier to treat filter backwash, new ultraviolet disinfection system, reclaimed water pumping, modifications to chlorine contact basins, chemical feed systems, new pumping and other ancillary facilities, and electrical modifications.

Irvine Ranch Water District, Michelson Water Recycling Plant Tertiary Filters Improvements | Irvine, CA

Filter Performance Investigation Lead.

IRWD contracted HDR to perform the preliminary and final design for the rehabilitation of the tertiary filtration system and consists of the tertiary filters, backwash supply, spent backwash, air scour blower, and air compressor. An investigation into the poor performance of Filter No. 7 and a condition assessment of the concrete backwash supply and spent backwash tanks were also performed to better inform the extent of the rehab design and make modifications to potentially improve filter performance.

City of San Mateo, Wastewater Treatment Plant Expansion and Nutrient Removal Upgrades | San Mateo, CA

MBR Lead. Mandira was the MBR lead for the project. HDR provided schematic design, final design, and bid phase services for \$400 million in improvements to the San Mateo/ Estero Municipal Improvement District Wastewater Treatment Plant. The project was delivered using a Construction Manager at Risk delivery method.

OC SAN, Activated Sludge Rehabilitation for Plant No. 1, Project No. P1-82 | Fountain Valley, CA

Project Engineer. Mandira oversaw the project for the entire duration of the project. HDR provided design, construction and start up services to rehabilitate the 92mgd Plant No. 1. AS-1 facility This modification improved the water quality provided to the GWRS and resolved several reliability condition capacity and hydraulic issues.

MANDIRA SUDAME (CONTINUED)

OC SAN, Sludge Dewatering and Odor Control at Plant No. 1, Project No. P1-101 | Fountain Valley, CA

Project Manager and Design Lead.

Mandira led a team of 35+ engineers and 8+ subconsultants to design a \$105M solids handling facility that encompassed up to nine of the largest high solids centrifuges in the world. She was responsible for design of the thickening and dewatering centrifuge systems including feed pumping, thickened sludge pumping, dewatered cake conveyance, polymer systems and ancillary equipment. She also served as project lead for interdisciplinary coordination and BIM production management. She played a major role in developing the Engineering Study Report and Preliminary Design Report for the project, including the development and coordination of operating philosophies and control strategies.

City of San Diego, As-Needed Engineering Wastewater Facilities Condition Assessment | San Diego, CA

Project Manager. Mandira provided as-needed corrosion engineering and condition assessment services for the city's sewer pipeline system, which included pipelines ranging from 8 to 120 inches in diameter force mains and trunk sewers. Task orders have included a rigorous evaluation of the consequence of failure and a thorough analysis of the likelihood of failure combining both field condition data and statistical analysis. Work included the use of closed-circuit television to gather review and validate all available data and update the existing closed-circuit television tool box. Other tasks performed included preparation of a condition assessment work plan field data collections and preparation of a repair/rehabilitation and replacement action plan that included a comprehensive financial analysis projected timeline and cost estimate for each pipeline implementation.

OC SAN, PS21-03 Process Model for Denitrification Alternatives at Activated Sludge | Fountain Valley, CA

Principal-in-Charge. Mandira oversaw the engineering study that evaluated alternatives to improve denitrification at AS-1 using the previously calibrated P1-82 process model. The team reviewed existing operational data to update the influent characterization in the process model. They compared the results with those from the process verification report. The study included a workshop and a Technical Memorandum.

City of San Diego Public Utilities Dept., Pure Water Program's North City Conveyance System (NCCS) Civil Engineering Services | San Diego, CA

Project Engineer. Design the \$130 million North City Conveyance System for its Pure Water Program. The project is a key component of the program and will convey highly treated wastewater effluent from the North City AWTP to either the San Vicente Reservoir for indirect potable reuse or the Miramar WTP and Reservoir for direct potable reuse.

Port of Long Beach, Pier B Port-wide Stormwater Infrastructure Master Plan, | Long Beach, CA

Task Leader. Mandira completed condition assessment of 20 stormwater pump stations ranging from 1 to 53 mgd. She inspected and provided condition assessment for 50 miles of storm drains, 500 manholes and 900 catch basins. POLB hired HDR to develop a stormwater infrastructure master plan and prepare a 20-year capital improvement program (CIP). POLB engaged HDR to update the stormwater GIS maps and data accurately survey the locations of inlets and catch basins; inspect pipelines larger than 18-inches in diameter using closed circuit television (CCTV) methods; inspect and evaluate existing pump stations; evaluate hydraulic models and select one; develop the model; and identify improvements.



Tom Hamlin, PE, SE | Quality Control

Tom's 19 years of experience have focused primarily within the water/wastewater industry, including structural design, plan development, QC reviews, and construction administration for a wide range of structure types. He also has extensive experience performing structural investigations, condition assessments, and rehabilitation of existing water/wastewater facilities. For the past 14 years, he has served as the lead structural engineer for Tucson Water's Reservoir Management Program, which includes condition assessment, rehabilitation, and overall asset management for Tucson Water's 34 large-capacity concrete reservoirs and 34 steel tanks ranging in size from 1 MG to 60 MG in capacity.

EDUCATION

Masters, Civil Engineering,
South Dakota State
University, 2004

Bachelors, Civil Engineering,
South Dakota State
University, 2003

REGISTRATIONS

Professional Engineer - Civil,
CA, No. 71864

Professional Engineer - Civil,
MT, No. PEL-PE-LIC-27040

Professional Engineer -
Structural, AZ, No. 54311

Professional Engineer -
Structural, HI, No. PE-16088

PROFESSIONAL AFFILIATIONS

Structural Engineers
Association

INDUSTRY TENURE

20 years

RELEVANT EXPERIENCE

South Orange County Wastewater Authority, JB Latham Aeration and Cogeneration Improvements | Dana Point, CA

Structural Engineer. A seismic analysis of the existing structural system was conducted after the initial condition assessment was completed. Several deficiencies were identified in the load paths at the existing concrete walkways. As such, the project consisted of demolishing the existing concrete walkways and replacing them with new aluminum walkways that were designed for the anticipated differential seismic deflections between adjacent supporting walls of the aeration basin. Other various concrete repairs at the existing aeration basins and blower buildings were also designed. Also responsible for engineering services during construction.

Irvine Ranch Water District, Michelson Water Recycling Plant Tertiary Filters Improvements | Irvine, CA

Structural Engineer. IRWD contracted HDR to perform the preliminary and final design for the rehabilitation of the tertiary filtration system and consists of the tertiary filters, backwash supply, spent backwash, air scour blower, and air compressor. An investigation into the poor performance of Filter No. 7 and a condition assessment of the concrete backwash supply and spent backwash tanks were also performed to better inform the extent of the rehab design and make modifications to potentially improve filter performance.

South Orange County Wastewater Authority, JBLTP Aeration Cogeneration Structural Improvement | Dana Point, CA

Structural Engineer. HDR was retained by South Orange County Wastewater Authority to design a new 'ration system to replace the 20 year old diffuser system.

City of Billings, Billings Wastewater Nutrient Upgrade and Expansion | Billings, MT

Structural Engineer. Responsible for overseeing preparation of the structural contract documents for the upgrades to the existing wastewater treatment facilities. Upgrades are required at the plant to meet upcoming nutrients requirements in the discharge permit and will also expand the current plant to the ultimate capacity of 34 MGD. The structural upgrades include modifications to the existing aeration basin splitter structure, substantial demolition work inside of the existing aeration basins and final clarifiers and construction of new cast-in-place concrete baffle and divider walls to convert the treatment into plug-flow bioreactors, new cast-in-place stiffening beams at the exterior of the existing structures to resist additional loads from increased water surface elevation, a new precast/prestressed Electrical Building supported on the existing pipe gallery, three new 140-foot diameter cast-in-place circular secondary clarifiers, a new cast-in-place concrete secondary splitter structure, and modifications to the existing UV Disinfection facility.

TOM HAMLIN (CONTINUED)

OC SAN, Sludge Dewatering and Odor Control at Plant No. 1, Project No. P1-101 | Fountain Valley, CA

Structural Engineer. Tom assisted in the preparation of the structural contract documents for an expansion of the current wastewater treatment facility. Reviewed finite element modeling and assisted in structural detailing of the new sludge dewatering structure, new utility tunnels, new precast screen wall system, new 84-foot long pipe bridge structure, new scrubber facility, and modifications to the existing solids storage facility. The new sludge dewatering structure consists of a 29,000 SF cast-in-place below-grade basement structure with a cast-in-place mat slab foundation supported on cast-in-place drilled shafts. The above grade portion of the new sludge dewatering structure consists of a 21,000 SF structural steel special moment frame system approximately 40 feet in height. The above-grade building has an intermediate mezzanine that contains an office, labs, and electrical control rooms. The building also has a 20-ton bridge crane that spans approximately 91 feet across the building's width. The project location is in a high seismic zone with highly liquefiable soils. As such, all structures are supported on deep foundations that consist of cast-in-place drilled shafts. Responsibilities also include performing all construction phase design services for the structural discipline.

Victor Valley Wastewater Reclamation Authority Otoe Lift Station Assessment and Rehabilitation | Apple Valley CA

Structural Engineer for the condition assessment and rehabilitation of an existing sewage lift station and above-grade masonry building. Modifications include relocation of an existing diesel generator, installation of CFRP strengthening, installation of a new HS20 load rated concrete slab over the existing wet well, and various concrete repairs.

City of San Mateo, Nutrient Removal and Wet Weather Flow Management Upgrade and Expansion | San Mateo, CA

Structural Engineer. Provided structural engineering support for the following structures throughout schematic design and final design as a part of the \$400 million in improvements to the San Mateo/Estero Municipal Improvement District (EMID) Wastewater Treatment Plant: (1) four new covered rectangular primary clarifiers, with primary sludge pumps, scum pumps, and a primary effluent pumping station; (2) bioactiflo for wet weather treatment, consisting of a biological contact tank and high rate clarification process, along with associated mixers, aeration, blowers and pumps; (3) chemical storage and feed facility; (4) biological nutrient removal (BNR) and membrane bioreactor (MBR) treatment facilities, mechanical/electrical building (pumps and blowers), with associated piping; (5) odor control for new headworks and primary clarifiers; (6) an influent junction box/channel; (7) preliminary screens with sluiceway, and screenings washing and compacting equipment; (8) aerated grit removal tanks with grit pumps, blowers, and grit washing and dewatering equipment; (9) fine screens with sluiceway, and screenings washing and compacting equipment; (10) screening and grit handling building; and (11) electrical building. The project site is located on Bay Mud, so facilities are pile supported.



Crystal Starr, PE, SE | Structural Lead

Crystal is a licensed Structural Engineer with over seventeen years of experience in structural design, analysis, evaluation, and retrofit of structures. Crystal's structural engineering expertise include infrastructure projects related to water, wastewater, municipal utilities, and hydropower. As a Senior Structural Engineer, Crystal is experienced in leading structural detailed design efforts for building structures, water containing facilities, civil structures and pipeline stress analysis. She maintains knowledge of current industry codes and standards for structural design, evaluations and retrofit.

EDUCATION

Bachelor of Science, Civil Engineering, University of the Pacific, Stockton, CA 2006

REGISTRATIONS

Professional Engineer - Civil, CA, No. 75661

Professional Engineer - Structural, CA, No. 6337

Professional Engineer - Structural, NV, No. 21184

Structural Engineer, ID, No. 21810

INDUSTRY TENURE

19 years

RELEVANT EXPERIENCE

Central Contra Costa Sanitary District, Diffuser Replacement Seismic Upgrades Project | Martinez, CA

Lead Structural Engineer. Crystal was the lead Structural Engineer for this project which includes the seismic retrofit of the existing Aeration Basin structure and replacement of the existing diffuser system and replacement of various slide gates and finger weirs. The seismic retrofit scheme is based on the structural evaluation findings. The retrofit design includes the installation of a new reinforced concrete floor slab and FRP (fiber reinforced polymer) strengthening of the existing walls. The Aeration Basin structure is approximately 300 feet by 450 feet.

City of San Mateo, Immediate Action Projects, Package III | San Mateo, CA

Lead Structural Engineer. Crystal was the structural lead for this project which included structural improvements to the existing Effluent Pump Station (EPS).

City of Vallejo, Engineering Services for Concrete Tanks Condition Assessment

Lead Structural Engineer. Crystal was the lead Structural Engineer for this condition assessment project which includes the condition assessment of 6 prestressed concrete tanks. The condition assessment includes field assessment and the preparation of a report to summarize findings and provide recommendations for repair. The repair recommendations were categorized into repair timeframes to help the City plan for future capital improvements and to advise the Contractor with immediate repairs as part of this project.

Central Contra Costa Sanitary District, Steam and Blowers Renovation Project | Martinez, CA

Structural Lead. Crystal was the structural lead for this project.

Central Contra Costa Sanitary District, Pump Stations Upgrades Phase 2 | Martinez, CA

Structural Lead. Crystal was the structural lead for this project.

City of San Mateo, Nutrient Removal and Wet Weather Flow Management Upgrade and Expansion | San Mateo, CA

Structural Engineer. Crystal was a project Structural Engineer on the largest project implemented by the Clean Water Program. The project upgrades the WWTP's aging infrastructure with new advanced liquid treatment process facilities and general plant upgrades. The new liquid treatment process facilities include headworks, primary treatment, five-stage biological nutrient removal/membrane bioreactor process, biological and chemically enhanced treatment process, and other general plant upgrades. Her design responsibilities included the design of the primary treatment structure and primary effluent pump station. The structure consists of reinforced concrete walls and foundation slab with overall dimensions of 265' by 100'. The structure is supported on precast prestressed concrete driven piles. The structure itself is adjoined with adjacent structures and separated by expansion joints. Additional responsibilities include specification development, pipe support and platform designs.

CRYSTAL STARR (CONTINUED)

City of Livermore, Condition Assessment at Livermore Water Reclamation Plant

Structural Engineer. Crystal was the Structural Engineer performing condition assessments for various structures at the plant including the Primary Effluent Pump Wet Well, Influent Manhole, Mixed Liquor Box, Secondary Clarifier, Equalization Basin and Headworks channels. A Tier 1 assessment was performed with some additional nondestructive testing of concrete and metallic surfaces. Crystal helped in preparing the condition assessment reports. The reports summarized findings and provided recommendations for improvement where required. A series of condition assessment reports were submitted to the Client.

San Francisco Public Utilities Commission, Southeast Plant- Site Preparation Project and New 250-MGD Headworks | California

Lead Structural Engineer. Crystal was lead Structural Engineer facilitating the preparation of the site and flow diversion to demolish the existing O11 Headworks and construct the new SEP O20 Headworks facility. The extreme site constraints and limited available footprint present several challenges for developing the facility layout as well as for completing construction. A detailed construction sequence and phasing approach was developed with the team requiring innovative structural designs to facilitate the sequencing. Additional lead responsibilities included overseeing the design of some supporting structures throughout the site designed by the structural team. Design responsibilities included an approximately 30' high by 250' long structural steel pipe rack stacked with large diameter force mains. Developed a finite element analysis model for the individual pipes on the pipe rack considering their relative displacements, and connections to structures. Specialty articulated fittings on the pipelines were selected to relieve relative structure displacements. *(Prior to HDR)*

City of Richmond and Veolia Water, WWTP Critical Improvements Project | California

Lead Structural Engineer. Crystal was the lead Structural Engineer for the upgrade of the City's Water Pollution Control Plant. The Secondary Clarifiers were updated for more efficient sludge removal. Condition assessment of the Clarifier concrete, launders, and weirs were conducted during shut down of each Clarifier. Additionally, the project included the design of a new headworks facility with two layout alternatives utilizing two different grit removal technologies. The layouts each incorporate future expansion of the facility. In addition, the structural team designed a new blower building and electrical building for the site. *(Prior to HDR)*

Sewer Agency of Southern Marin, Five Year CIP Updates Project | California

Lead Structural Engineer. Crystal was the lead Structural Engineer for the capital improvements update project for the SASM wastewater treatment plant. The structural team designed improvements for various areas identified as requiring rehabilitation and/or replacement throughout the facility. The project began with condition assessment of concrete surfaces within the Headworks, Primary Clarifiers and Secondary Clarifiers to identify concrete repairs. Condition assessment was conducted for the aluminum structural framing in the two Trickling Filters, Primary Clarifiers and Headworks channels. The project improvements included new bar screens, screenings conveyor, baffle to grit basin and new skylights to install the bar screens in the Headworks Building. A new design for the two Trickling Filters was prepared due to the onset of corrosion at the stainless steel to aluminum contact surfaces. Primary Clarifiers were rehabilitated with new sludge collector drives, primary sludge and scum pumps, and replacement of guardrails. *(Prior to HDR)*



Gregorio Estrada, PE | Construction Sequencing

Gregorio has extensive experience in the planning, design, construction, and management of wastewater, water, and stormwater projects throughout Southern California. He is an adept leader in wastewater treatment processes and has particular interest in advanced treatment solutions including: nutrient removal, filtration, membranes, and disinfection. He has successfully delivered large-scale projects in advanced treatment such as IRWD's \$167M Michelson Water Recycling Plant Biosolids and Energy Recovery Facilities as well as IRWD's \$87.5M Michelson Water Recycling Plant's MBR Facility. He is also highly-skilled in building group-consensus amongst key stakeholders with differing agendas, performing economic evaluations and risk assessments, and assisting in negotiations with regulatory agencies.

RELEVANT EXPERIENCE

EDUCATION

Bachelors, Civil Engineering,
Stanford University, 2001

REGISTRATIONS

Professional Engineer - Civil,
CA, No. 67066

LEED Accredited Professional

INDUSTRY TENURE

22 years

Irvine Ranch Water District, Michelson Water Recycling Plant Tertiary Filters Improvements | Irvine, CA

Principal in Charge & Construction Sequencing Lead. IRWD contracted HDR to perform the preliminary and final design for the rehabilitation of the tertiary filtration system (originally constructed in 1978) and consists of the tertiary filters, backwash supply, spent backwash, air scour blower, and air compressor. An investigation into the poor performance of Filter No. 7 and a condition assessment of the concrete backwash supply and spent backwash tanks were also performed to better inform the extent of the rehab design and make modifications to potentially improve filter performance.

South Orange County Wastewater Authority, JB Latham Aeration and Cogeneration Improvements | Dana Point, CA

Project Manager. HDR performed process evaluation, optimization, and design of improvements for SOCWA's JB Latham Treatment Plant (JBLTP), including the development of a Facility Plan. As part of the Facility Plan, our team developed a Biotran process model for JBLTP. The team used this model to determine aeration demands for various scenarios, and evaluated diffusers based on diffuser characteristics and resultant air demands and energy use. The model was also used to determine the required number of diffusers per zone and resulted in optimization of the reactor configuration to create selector zones and reduce aeration demand. As Project Manager, Gregorio was responsible for the successful execution of the project and provided oversight to the project deliverables.

South Orange County Wastewater Authority, Plant 3A Aeration Header Reroute | Mission Viejo, CA

Project Manager. HDR prepared a conceptual design and bid documents for an alternate routing of the existing aeration and channel agitation air piping to mitigate the impact of differential settlement on the pipe integrity. The project was completed on a fast-track schedule and required coordination with plant operation and maintenance personnel to establish the sequence of work and ensure that the proposed routing would not interfere with plant operation or process control. As Project Manager and Lead Designer, Gregorio worked closely with SOCWA Engineering and Operations staff to successfully deliver the project under budget.

City of Thousand Oaks, Tertiary Filters Rehabilitation | Thousand Oaks, CA

Construction Sequencing Lead. HDR was selected by City of Thousand Oaks to perform a filter media study and condition assessment of the structural, mechanical, and electrical components of the tertiary treatment system at Hill Canyon Treatment Plant (HCTP). HDR is approaching the tertiary filters rehab in multiple ways to conduct a comprehensive, cost-effective condition assessment. Rehabilitation and repair recommendations will be provided. HDR's in-house condition assessment experts are NACE/AMPP certified engineers and inspectors who are familiar with HCTP and its construction. Mechanically, the team will verify operability of valves in condition assessment phase.

GREGORIO ESTRADA (CONTINUED)

Irvine Ranch Water District, Michelson Water Reclamation Plant Phase 2 Expansion | Irvine, CA

Task Manager during conceptual design, preliminary design, and final design phases, and resident engineer during construction of the award-winning \$87.5 million Phase 2 expansion of the Michelson Water Reclamation Plant to 33 mgd. Improvements included influent sewers, headworks, expansion of the primary sedimentation tanks, new primary effluent pumping station and flow control, modified flow equalization basins, secondary treatment expansion with membrane bioreactors (MBRs), new high-rate clarifier to treat filter backwash, effluent filtration, new ultraviolet (UV) disinfection system, reclaimed water pumping, modifications to chlorine contact basins, chemical feed systems, new pumping and other ancillary facilities, and electrical modifications.

City of San Mateo, Wastewater Treatment Plant Expansion and Nutrient Removal Upgrades | San Mateo, CA

Design Manager & Secondary Treatment Facilities Lead. Provided schematic design, final design, and bid phase services for \$400 million in improvements to the San Mateo/Estero Municipal Improvement District (EMID) Wastewater Treatment Plant, which included (11) electrical and standby power, including fuel systems to supply the standby power; The headworks facility includes: (1) an influent junction box/channel; (2) preliminary screens with sluiceway, and screenings washing and compacting equipment; (3) aerated grit removal tanks with grit pumps, blowers, and grit washing and dewatering equipment; (4) fine screens with sluiceway, and screenings washing and compacting equipment; (5) screening and grit handling building; and (6) electrical building. The project site is located on Bay Mud, so facilities are pile supported. The project was delivered using a Construction Manager at Risk (CMAR) delivery method.

Santa Margarita Water District, Chiquita WRP Headworks Improvements | Rancho Santa Margarita, CA

Project Manager. The project included analysis of historical influent flows and projections of future flows, and analysis of peak storm conditions to establish design criteria. The preliminary design included an evaluation of screening technologies, and development of configuration alternatives that addressed the physical limitations of the existing structure relative to modern screening technologies, and mitigate the hydraulic impacts to the downstream pumping systems. The influent lift station upgrades included evaluation of existing conditions. The hydraulic modeling and analysis resulted in modifications to the pump station design. The final design for the screening facility included modifications to the structure to accommodate the selected screening equipment, and new screening and washing/compacting equipment, new gate controls, odor control upgrades, complete electrical systems replacement, and new safety features. In addition, the design included architectural upgrades to integrate the headworks building with the overall plant scheme.

Victor Valley Wastewater Reclamation, Regional Wastewater Treatment Plant Phase III Expansion | Victorville, CA

Task Manager. Gregorio was responsible for the final design of upgrades to the primary clarifiers and oversight on the civil design. HDR completed approximately 80 percent of the design to expand the West Regional Water Reclamation Plant utilizing a MBR facility to provide high-quality reclaimed water. The expansion will use ultraviolet light to achieve disinfection without creating disinfection byproducts. The original intent of the expansion was to provide a system capable of producing effluent with total nitrogen concentrations of less than 10 mg/L for an average flow of 22 MGD.



Kirk Johnson | Cost Estimating

Kirk has 30 years of experience in commercial, industrial, and public works construction; most recently, he was responsible for at risk design-build estimating and consulting in the Western United States with a primary focus on alternative delivery for water and wastewater projects. His background includes management roles, consulting, conceptual cost estimation, bidding, and negotiating on projects as large as \$1 billion. Kirk has a diverse background, including value engineering and constructability review experience on many projects, journey level field experience in multiple trades, and professional instructor on construction topics. He is proficient in several industry-focused software packages: Sage Timberline Estimating and Accounting, HCSS HeavyBid, MCACES/MII (USACE), Success Estimator (NAVFAC), Primavera P6 / PCM Contract Management, Microsoft Project and AutoCAD, Civil 3d, and Assemble. Kirk is also proficient using Microsoft Excel, including macro programming, and has advanced database programming skills with decades of source composition in many languages.

TRAINING

US Government Systems,
Project Time and Cost,
MCACES Second Generation
PACES, Success Estimator

Saddle Island Institute,
Construction Schedule
Analysis & Evaluation of
Delay Damages

Common Sense Safety,
Inc. Accident and Incident
Investigation Techniques

Idsys, Inc., Timberline
Estimating Extended,
Timberline Estimating
Workflow, Timberline Report
Writer and Advanced Report
Design

DRMcNatty & Associates,
Inc. Planning and Scheduling
with Primavera Project
Planner

HCSS, Inc.

HeavyBid Estimating

CompUSA Management
Company, Advanced
Microsoft Excel,

Advanced Microsoft Access

YCA Solutions for Project
Success, Registered
PMI Provider, Project
Management: The

Project Success Method

YCA Solutions for Project
Success, Microsoft Project
Advanced Tools

INDUSTRY TENURE

38 years

RELEVANT EXPERIENCE

City of San Diego, Indirect Potable Reuse/Reservoir Augmentation Demo Project | San Diego, CA

Cost Estimator. Kirk was the estimator for civil/structural. This design-build project was a demonstration-scale advanced water treatment plant including microfiltration, nanofiltration, RO, ion exchange, and UV treatment. The 1 MGD system is designed to demonstrate the process for a large-scale plant expansion to 40 MGD.

City of Morro Bay, Morro Bay Water Reclamation Facility | Morro Bay, CA

Cost Estimator. Two Step JV design-build project to construct a complete replacement to the city's existing plant constructed in 1953. The new plant is designed to treat 1 MGD of wastewater through full advanced treatment for groundwater replenishment and the total awarded bid was over \$65 million.

GB Energy Park, Gordon Butte Pumped Storage Hydro Project | Meagher County, MT

Cost Estimator. A new 420 MW (3x140 GE Francis Hydro Turbines) hydroelectric generation and pumping facility. Under a design-build JV the project includes newly constructed reservoirs, intake penstock tunnels and powerhouse. Kirk was estimator for structural and mechanical on this project and the total project capital construction cost was over \$1 billion.

City of Houston, Northeast Water Purification Plant Expansion | Houston, TX

Cost Estimator. Kirk was the estimator for structural/civil on this progressive design-build of a conventional water treatment plant expansion to 320 MGD. Includes a lake intake, 96-inch influent piping, jet mix, floc/sed, biological media filters, ozone and UV. Total design-build project value was over \$1 billion.

City of Stockton, Delta Water Supply Project | Stockton, CA

Cost Estimator. Kirk was the estimator for structural/mechanical/pipeline on this progressive design-build of a 30 MGD Ozone, Floc/Sed plus UF Membrane Treatment Plant and 18 miles of large diameter pipeline with value greater than \$190 million.

California American Water, Monterey Peninsula Water Supply Project | Monterey, CA

Cost Estimator. Kirk was the chief estimator for this 9.6 MGD design-build seawater desalination plant. This project is being constructed in response to Cease and Desist orders by the State Water Resources Control Board that Cal Am reduce surface water diversions from the Carmel River with a value slightly less than \$100M

KIRK JOHNSON (CONTINUED)

US Army Corps of Engineers, Water Treatment and Distribution System | Fort Irwin, CA

Cost Estimator. Kirk was the chief estimator for this 6 MGD Electro Dialysis Reversal (EDR) water treatment plant designed to meet 99.6% recovery in order to ensure the longest possible groundwater supply from the available aquifer within Fort Irwin Army Training Center.

Coachella Valley Water District, Avenue 62 Trunk Sewer Project | Coachella, CA

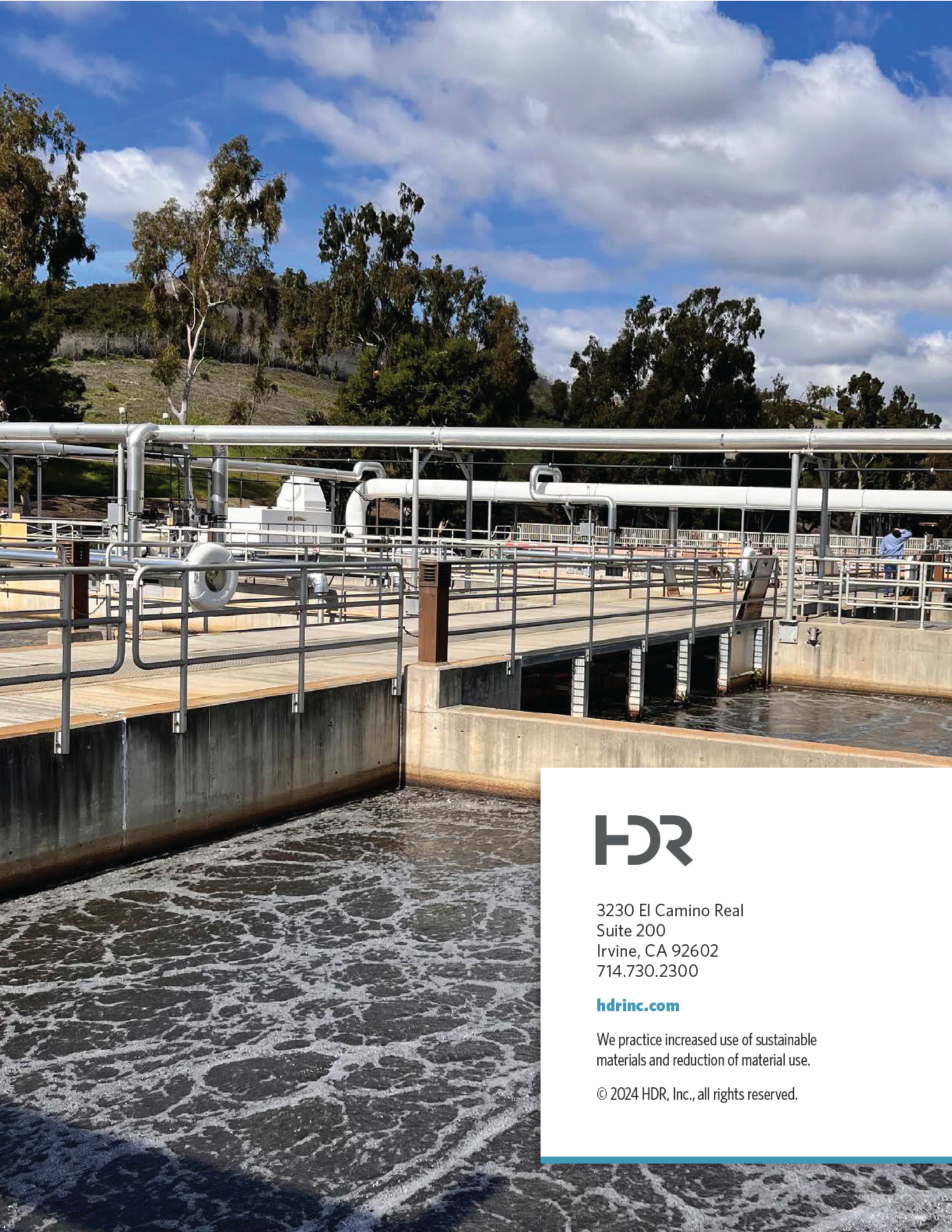
Cost Estimator. Kirk was the lead estimator for the design-build removal and replacement (7,500 lf) of 33- and 42-inch diameter deep clay sewers in city streets with fiberglass (HOBAS) pipe. This project also included repairs of 33-inch and 42-inch sewer pipeline (24,000 lf) with Cured-in-Place Pipe (CIPP) lining.

US Department of Homeland Security/ United States Coast Guard, Wastewater Facilities | Petaluma, CA

Cost Estimator. Kirk was the chief estimator for this design-build installation of new AeroMod Sequox Biological Nutrient Removal (BNR) system as part of a complete plant including earthen basins, grit removal, chlorine contact, UV system, and large spray-fields.

Southern California Edison, Peaker Generating Unit Project | Mira Loma, CA

Cost Estimator. Kirk was the chief estimator on this project featuring five 45 MW Single Cycle General Electric LM6000 gas turbine generators. After award Kirk served as the construction manager for the Etiwanda and Mira Loma sites. Four of the five peaker plants were constructed concurrently under fast track design-build. These plants provide power under peak demand and include selective catalytic reduction (SCR) emission controls. The generators include black-start capability without power from the grid and were operational in five months.



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