



Request for Proposals for

# **Design Services for Master Plan of Sewer Update SQ-87-DE-19-32**

June 23, 2022

Prepared for



**FONTANA**

June 23, 2022

City of Fontana - Purchasing Office  
Attn: Sid Lambert  
8252 Sierra Avenue  
Fontana, CA 92335



**Corporate Headquarters**  
3788 McCray Street  
Riverside, CA 92506  
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**Murrieta Office**  
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Murrieta, CA 92562  
T: 951.686.1070

**RE: Request for Proposal for Design Services - Master Plan of Sewer Update  
SQ-87-DE-19-32 (Pre-Qualified List)**

Dear Mr. Lambert:

Enclosed is Albert A. Webb Associates' (WEBB) proposal to provide engineering services for the Master Plan of Sewer Update for the City of Fontana (City).

This WEBB Team fully understands the importance of this project to the City's overall goals to update the 2013 Sanitary Sewer System Master Plan to evaluate the existing system for capacity, along with identifying existing and future deficiencies in the collection system as a result of future development through build-out of the community. This WEBB Team has extensive experience in sewer master planning and estimating ultimate wastewater generation, developing wastewater facility plans, lift station design, developer impact fee analysis and assessment, and updating sanitary sewer system management plans.

### Success Factors

In order to be successful on the City's project, WEBB has identified the following success factors:

- An ultimate sewer master plan that allows the City to accurately plan for the future
- A well-thought out Capital Improvement Plan for funding considerations
- A team that has worked together on multiple wastewater projects and has a proven record of cost effective wastewater engineering

WEBB will partner with **AQUA Engineering** on the sewer flow projections, GIS analysis, sewer modeling and analysis, and sewer master plan portion of the work. The WEBB Team will be supported by **ADS Environmental Services** for the sewer flow monitoring and condition assessment. Each team member has significant experience in their individual field/tasks, bringing value to the City every step of the way. WEBB has worked with all of the team members before on various projects bringing project efficiency and familiarity to the overall effort.

### Project Interest

WEBB is proposing on this RFP because we believe our firm can bring real value to the City based on our experience in performing sewer master planning studies for a number of similarly sized public agencies including, but not limited to:

- Edgemont Community Services District
- Jurupa Community Services District
- Rubidoux Community Services District
- Eastern Municipal Water District

On behalf of our entire project team, I would like to thank the City for this opportunity to submit our proposal for this very important project. We look forward to discussing our team, our approach, and our ideas with you in greater detail.

Our team members will remain available throughout the duration of the projects. As a result, you can be confident your updated Sewer Master Plan will be successfully completed in a timely and professional manner. We look forward to the opportunity to continue working together. If you have any questions regarding our proposal, please contact me directly at 951.686.1070, or by email at [bruce.davis@webbassociates.com](mailto:bruce.davis@webbassociates.com).

Sincerely,

A handwritten signature in blue ink, appearing to read "Bruce A. Davis".

Bruce A. Davis, PE  
Senior Vice President  
[bruce.davis@webbassociates.com](mailto:bruce.davis@webbassociates.com)



[www.webbassociates.com](http://www.webbassociates.com)

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# Section 1. Project Approach and Scope of Work

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## PROJECT APPROACH

WEBB's approach to preparing the Sewer Master Plan for the City is based upon the understanding that the City is looking for a document to identify the necessary system improvements based on future development, potential development densification within the City, elimination of existing lift stations where possible, and also to address any current shortfalls with the existing infrastructure collection and conveyance system lift stations, and pipelines through flow monitoring, a condition assessment, and asset evaluation. WEBB will aim for efficiency by relying, whenever possible, on available information but understands some data may not be available or may not reflect the as-built system facilities entirely, and some independent verification in the field will be required in order to thoroughly address the desired goals of the City.

### Management Philosophy

WEBB understands the absolute need for strong project management. We recognize the critical issues associated with scope, schedule, budget management, and communication. Communication and coordination between WEBB and the City are paramount to each project. To guarantee continuous and effective communication, Kris Danielson, PE, Project Manager, will be the primary point-of-contact for the City, and Bruce Davis, PE, Principal-in-Charge, will be monitoring the process as a whole. Kris will make it a priority to attend all meetings with the City and project proponents during the project. This will ensure a constant and effective communication resulting in strong budget, scope, and schedule control.

### Management Responsibility And Procedures

Bruce will be the lead on all contractual matters focusing on resolving any critical contract issues as soon as they are identified. Bruce will have the authority to commit firm resources and will support the project manager in managing the overall scope, schedule, and budget. Bruce's experience on large multi-disciplinary projects, with multiple public agencies, allows him to look forward to identify and prevent potential delay causing issues and understands the City's desired approach in handling them with all stakeholders. Further, Bruce will be the primary presenter and interface with City Council workshops and presentations if they are needed. Kris will be the primary point of contact responsible for the day-to-day project and technical management which includes:

- Facilitating frequent and consistent communications with the City
- Implementing the overall delivery plan
- Managing the overall scope, schedule, and budget
- Implementing the QA/QC Program

Kris will be responsible for facilitating decisions by the City, coordination, management, communicating to the project team and City project manager, and preparing and reviewing deliverables. Kris will assist in presenting the technical work at meetings and documenting action items and decisions.

The QA/QC Team and Project Management Plan (PMP) will facilitate successful project execution. Management tools, procedures, and a delivery plan are all contained in a comprehensive PMP prepared at the beginning of the project and is updated throughout the project. Having a comprehensive and detailed PMP is essential for preparing large planning documents with an integrated team consisting of agencies, multiple stakeholders, multiple disciplines, and many deliverables. City input into the plan will be essential to make certain it is an effective tool and adequately used. An outline of the plan and some initial comments and items to be included, in addition to our detailed Communication Plan, are as follows:

#### Kick-off Meeting

After project award and notice-to-proceed, our project manager will conduct a kick-off meeting with all members of the project team and points-of-contact from each of the participating City departments. The kick-off meeting is structured to establish communication protocols for the project, as well as to identify critical success factors and processes, activities, and tasks that must be carried out to achieve project goals. The workshop is an important step to ensure all parties are focused on the same project goals and help clarify the critical path issues, key outside stakeholders, milestones, and third party approvals.

### **Communication Plan and Management**

Communication between all team members and the City is critical to its success. We are committed to providing consistent communication by having required members of the project team available for all City meetings. WEBB has multiple conferencing programs that will be utilized to provide immediate conferencing and reduce driving time. These programs include, but are not limited to conference calls via phone, and video conferencing via TEAMS, Skype, and GoToMeeting. However our primary preference is to conduct in person meetings with the City as we find them more engaging and effective for all involved. In addition, weekly check-ins between the City and WEBB's project manager are important to communicate project status, clarify expectations, and understanding next scheduled actions and who will complete.

### **Scope Management**

A detailed scope of services is included in our proposal and will be utilized for the project duration with detailed tasks. During the execution of the project, the scope will be utilized as a baseline by our project manager, who will manage the scope and work product. If potential changes are identified as the project develops, our project manager will work with the City project manager to clarify and approve any additional tasks necessary to complete the project.

### **Schedule Management**

A preliminary schedule has been prepared and provided in the scope of services section and will be discussed at the kick-off meeting. At that time, the project schedule and milestones will be evaluated and modifications will be made to set the final baseline schedule. The baseline schedule will be monitored and tracked by our project manager to maintain the project milestones and manage critical path items. A tracking schedule can be provided with monthly updates and schedule variances identified. Actions required to correct schedule deviations will be developed and implemented by the project manager. The project schedule is an effective management tool when developed and maintained to guide the planning process through the tasks required to successfully complete a project. WEBB uses Microsoft Project software to schedule and track project tasks.

### **Cost/Budget Management Plan**

The proposed project budget is prepared based on tasks required to successfully complete the project. Our project manager will track the final budget compared to the actual earned value, task completion, and cost-to-date, and will identify any project cost variance monthly. Corrective actions will be taken to maintain the project budget. If changes to the scope and budget are deemed necessary, our project manager will work with agencies to justify the need and clearly define the impacts.

## **SCOPE OF SERVICES**

Our proposed Scope of Services for the Sewer Master Plan is organized with a detailed breakdown and description of the tasks. The Scope of Work will be prepared in accordance with the RFP. WEBB acknowledges the requested scope of services, deliverables, and City services requested in the RFP and will provide all scope items and deliverables as requested. We have enhanced and expanded on the requested services where appropriate in the following scope of services. Assumptions will be included in the scope which identify information and input required from the City and anticipated deliverables. All engineering work will be overseen by a professional engineer registered in the State of California. The final report will be stamped and signed by the civil engineer responsible for the work.

Our services are performed in compliance with applicable laws, rules, regulations, and standards in effect on the date of our agreement. During each phase, we maintain our QA/QC program to provide reliable results as detailed in this section. WEBB's QA/QC program is constantly evolving and being updated to address and minimize challenges that arise through the course of similar projects and to address specific agency requirements. WEBB will provide Sewer Master Plan documentation for the complete project.

### **Task 1. Data Collection and Field Investigations**

WEBB will collect and review the City's relevant planning documents and the City's planning data related to the sewer system. WEBB will coordinate with IEUA, conduct site visits to all lift stations for an initial condition assessment and prepare a detailed technical memorandum documenting our findings and recommendations, including an approach on how to address any missing information or data.

## **Task 2. GIS Gap Analyses & Needs Assessment**

WEBB will collect and review the City's GIS data, identify any missing GIS data based on review of available data whether newer development areas have been incorporated into the plan, assess the data to determine a level of confidence in the available data, determine what might be done to improve the data, update the data and complete the data for use for this master plan effort and City Staff as an on-going task for improved management of the sewer system. WEBB will prepare a detailed technical memorandum documenting our findings, recommendations, and action items required for this sewer master plan. WEBB will review the draft memorandum with City Staff and address any comments in a final memorandum.

## **Task 3. Temporary Flow Monitoring**

WEBB will develop a flow monitoring plan for this project that will collect key data to allow for calibration of the model and sewer generation data assumptions. The plan will include the locations and criteria for the data to be collected. The locations will be identified and confirmed in the field and adjusted as needed for safety and accessibility. We have included budget for 24 monitoring locations for a two week period. We do not anticipate that a wet weather event will be captured within the time frame that the monitoring will be done as we do not anticipate being in the rainy season during the flow monitoring. WEBB will prepare a detailed technical memorandum documenting our findings and recommendations for flow monitoring. WEBB will review the draft memorandum with City Staff and address any comments in a final memorandum.

## **Task 4. Establish Sewer Flow Criteria**

### **Determine Wastewater Generation Factors**

WEBB will review and update the current flow generation data for the various land uses (residential, commercial/industrial, infiltration/inflow, miscellaneous uses) in the City. In addition, based upon the targeted flow monitoring, a review and update of the City's wastewater peaking factors will be performed. The wastewater generation and peaking factors will also take into account the distinct basin areas in the City.

WEBB will provide an approach to account for future ADU's within applicable residential neighborhoods. Our experience on previous sewer master plans has found that estimates for how many ADU's to be planned for will have a significant impact on the sewer generation for the City, and there is little past experience to rely upon to confirm if the assumptions are valid.

WEBB will prepare a detailed technical memorandum documenting our findings and recommendations for sewer generations rates for various land uses within the City. WEBB will review the draft memorandum with City Staff and address any comments in a final memorandum.

## **Task 5. Hydraulic Sewer Model Calibration and Update**

The City does not currently operate or maintain a hydraulic model of the entire wastewater system. WEBB will research available software and conduct a workshop with City Staff to determine the appropriate modeling software to best fit City needs and intended uses. The selected model will be capable of performing risk-based analysis of the sewer system to support operational, maintenance, repair/replacement, and CIP decisions. The model will account for such factors including, but not limited to pipe/manhole/infrastructure size, material, age, condition, current and projected flows, potential for inflow and infiltration, historical issues, difficult maintenance access, capacity assurance, and currently planned CIP's. The proposed model should allow for the continuous update of sewer system infrastructure components and operational parameters by staff as system improvements and extensions are made. WEBB anticipates the City will be purchasing appropriate modeling software, such as InfoSewer, directly from a vendor after reviewing WEBB's recommendation, if required by the City.

After selecting the software, the first task is to build the model, (pipes and nodes) and then attach the current land use and sewer generation factors. The current land use will need to be verified with City Staff. For future land use, WEBB anticipates one meeting with the City's Planning Department to establish a planning basis for future land use and development changes anticipated through the year 2040. We will prepare meeting minutes and a list of action items after the meeting.

WEBB will utilize both aerial mapping and San Bernardino County Assessor's land use information and City's Land Use Mapping and data to determine and describe the current land use within the City's service area and identify vacant property. A summary of the findings will be displayed graphically in GIS format for each of the tributary basin areas.

WEBB will utilize the planning information and cities' General Plan information to determine and describe the projected land use within the City's service area. This analysis will include areas of redevelopment from current land use and vacant property. For purposes of this analysis, property that may be redeveloped will include developed property for which the assessor's land use information is inconsistent with the land use designated in the City's General Plan Land Use Element. A summary of the findings will be displayed graphically in GIS format for each of the basin tributary areas.

Based on the flow monitoring, WEBB will analyze to summarize existing system flows for both dry and wet weather conditions and to estimate sewer return ratios and existing flows in the wastewater system. Commercial, industrial, and/or institutional users, which may contribute significantly to wastewater flows, will be identified and investigated individually through discussions with City Staff. The Model will be calibrated based on flow data and adjustments to the sewer generation rates.

WEBB will describe the existing sewer system characteristics. This description shall include trunk/interceptor system, pressure systems consisting of lift stations and force mains, diversion structures, and existing sewer system flows for the backbone system. Local small diameter collector sewers will not be modeled. The model files will be provided to the City for future use and maintenance.

Training will be provided to City Staff on how to run and update the model on an on-going basis to keep the model current as a new development occurs and CIP projects are constructed and implemented.

### **Task 6. Hydraulic Sewer Model Analysis**

Beyond currently known flow capacity issues in the existing system, detailed flow evaluation and hydraulic deficiencies of the existing system will be identified in the sewer modeling task. We will summarize any problem areas such as surcharging, pipe-size deficiencies, and other deficiencies. WEBB will review all City data available for the wastewater basins, lift stations, and gravity mains to provide a sufficient overview of the City's wastewater collection and conveyance system. Due to limited field investigation of existing facilities, WEBB will rely on the City's existing data at time of the request for data. Each of the lift station sites will be reviewed in comparison to the record information and to determine potential deficiencies and alternative solutions to correct deficiencies.

Based upon the determination of the wastewater generation factors for various land use categories and the future land uses planned by the City, the future projected wastewater flows will be determined under the existing and ultimate scenarios.

WEBB will prepare a technical memorandum summarizing the historical and current flows, system description and deficiencies, targeted flow monitoring results, wastewater generation factors, peak factors, and future wastewater flow projections determined in Task 3, along with supporting Tables and GIS exhibits. The information will be tabulated per basin lift station and force mains, and 10-inch diameter mains and larger by EDU for both existing capacity and future capacity.

### **Task 7. Update of Sanitary Sewer System Master Plan**

All of our work will be documented in an update of the Sewer System Master Plan. The report will include all sections noted above with our findings and recommendations. The CIP program developed in Task 8 will also be included in the report. WEBB will conduct a workshop with key City Staff to review the report, our findings and recommendations and receive input from City Staff. The report will be revised, addressing the City's comment and a final report in PDF format will be provided.

## **Draft Master Sewer Plan**

WEBB will prepare a Draft Master Plan summarizing the study and all work tasks. The Draft Master Plan will include drawings, maps, and graphics reflecting the information gathered and prepared. A draft of the report will be provided to the City for initial staff review. The contents of the plan will consist of the following:

1. Executive Summary
2. Introduction
3. Existing and Projected Land Use and Population Growth
4. Sewer System Analysis Criteria
5. Existing Facilities Description/Coordination Assessment
6. Projected Wastewater Flows

## **Task 8. Capital Improvement Program**

WEBB will work with City Staff to review existing City sewer projects and development activity in progress to set the foundation for the development of a short, near and long term Capital Improvement Program (CIP), and sewer line replacement program. Preliminary phasing of proposed system improvements will be proposed.

WEBB will review the recently completed CIP projects, current projects in design, and proposed projects to determine the projects to be reviewed, updated, and potentially carried over as part of the updated plan.

WEBB will prepare an ultimate major capital improvement plan focused on lift stations, major trunk lines, and collection mains as a result of the system modeling. The existing system and the ultimate build out scenarios improvement will be determined and documented. WEBB will heavily consider current development activity in the City to determine any priority projects. All improvements will be identified and summarized. Individual project sheets will be developed once improvements are confirmed and reviewed by the City to document the project description and scope, cost estimate, and trigger for when the project is required.

WEBB will review the recently completed CIP projects, current projects in design, and proposed projects to determine the projects to be reviewed, updated, and potentially carried over as part of the updated plan.

WEBB will develop construction and project costs for proposed sewer system facility improvements for both the CIP and replacement program. Construction cost estimates will be based on current industry bidding prices and project cost will include a 40% factor of construction costs for soft costs. Typical soft costs included construction contingencies, design engineering, surveying and mapping, geotechnical evaluation and report, project contract administration, field inspection, and nominal environmental documentation. Costs will be based on the Engineering News Record (ENR) construction cost index for Los Angeles. Escalation, financing, interest during construction, legal, EIR, and land acquisition costs are not typically included.

WEBB will prepare cost estimates and summarize our findings and recommendations in a CIP Program report. WEBB will review the documents with City Staff and address any comments in the final report.

## **Task 9. Connection Fee Study**

WEBB will summarize the total cost of improvements, analyze land use and vacant lands for future growth and sewer generation, and prepare a fiscal and fee analysis for new sewer connections. The analysis will account for the flows from ADU's and how the City intends to fund improvements required by ADU's if sewer connection fees for ADU's are not collected.

WEBB will review the recently completed CIP projects, current projects in design, and proposed projects to determine the projects to be reviewed, updated, and potentially carried over as part of the updated plan. WEBB will prepare a detailed technical memorandum documenting our findings and recommendations for the Fiscal and Fee Analysis. WEBB will review the draft memorandum with City Staff and address any comments in a final memorandum.



### **Task 10. Sewer Lift Station Analysis**

WEBB will review whether there are opportunities to eliminate any existing lift stations, provide a cost estimate for the related project costs for the possible elimination, and assess the impact of the possible eliminations by sewer modeling. A condition assessment will be completed on each of the seven lift stations identified. The analysis will include mechanical equipment, electrical equipment, concrete structures, air quality and odor control, capacity for current and ultimate condition, and cost estimates for the proposed improvements. In addition, a plan will be developed to redirect flows from the Tamarind Lift Station so flows are conveyed to an IEUA treatment facility instead of Rialto's treatment facility. This will include model scenarios to confirm impact on the pumping equipment, the force main, and any downstream sewer system impacted by changes.

WEBB will prepare detailed technical memoranda documenting our findings and recommendations for various aspects of this lift station analysis. WEBB will review the draft memoranda with City Staff and address any comments in a final memoranda.

### **Task 11. Update of Sanitary Sewer System Management Plan (Optional Task)**

WEBB will review the 2019 Sewer System Management Plan (SSMP), update the plan based on the master planning effort and other maintenance programs implemented by the City. The update will be configured to meet current Statewide Waste Discharge Requirements issued in January 2022. WEBB will review the draft update with City Staff and address any comments in a final SSMP.

### **Task 12. Project Management and Meetings**

WEBB will manage and coordinate all components of the project and take a proactive role in keeping all tasks on schedule and budget to ensure timely completion of the project. WEBB will fully coordinate with City Staff and be responsive to any email and telephone discussions. WEBB will be in contact with the City frequently to ensure a timely City review of deliverables. We will similarly work with all stakeholders in a responsible manner.

#### **A. Project Administration**

WEBB will update the project schedule provided in our proposal monthly throughout the project. In addition, monthly status reports will be provided addressing project status and critical issues. Overall administration of the project and coordination with the City is included.

**Deliverable: Updated Project Schedule and Status Report Monthly to the City**

#### **B. Engineering Phase Progress Meetings**

WEBB will attend a kick-off meeting, periodic progress review meetings, and focused workshops with the City staff throughout the project. We will prepare meeting minutes and a list of action items after each meeting.

**Deliverable: Meeting Agendas, Meeting Summary, and Action Items**

#### **C. City Council Workshop**

WEBB can attend and/or lead City Council workshops and assist City Staff in presenting the Wastewater Master Plan to the Council members.

**Deliverable: Presentation Materials and Exhibits**

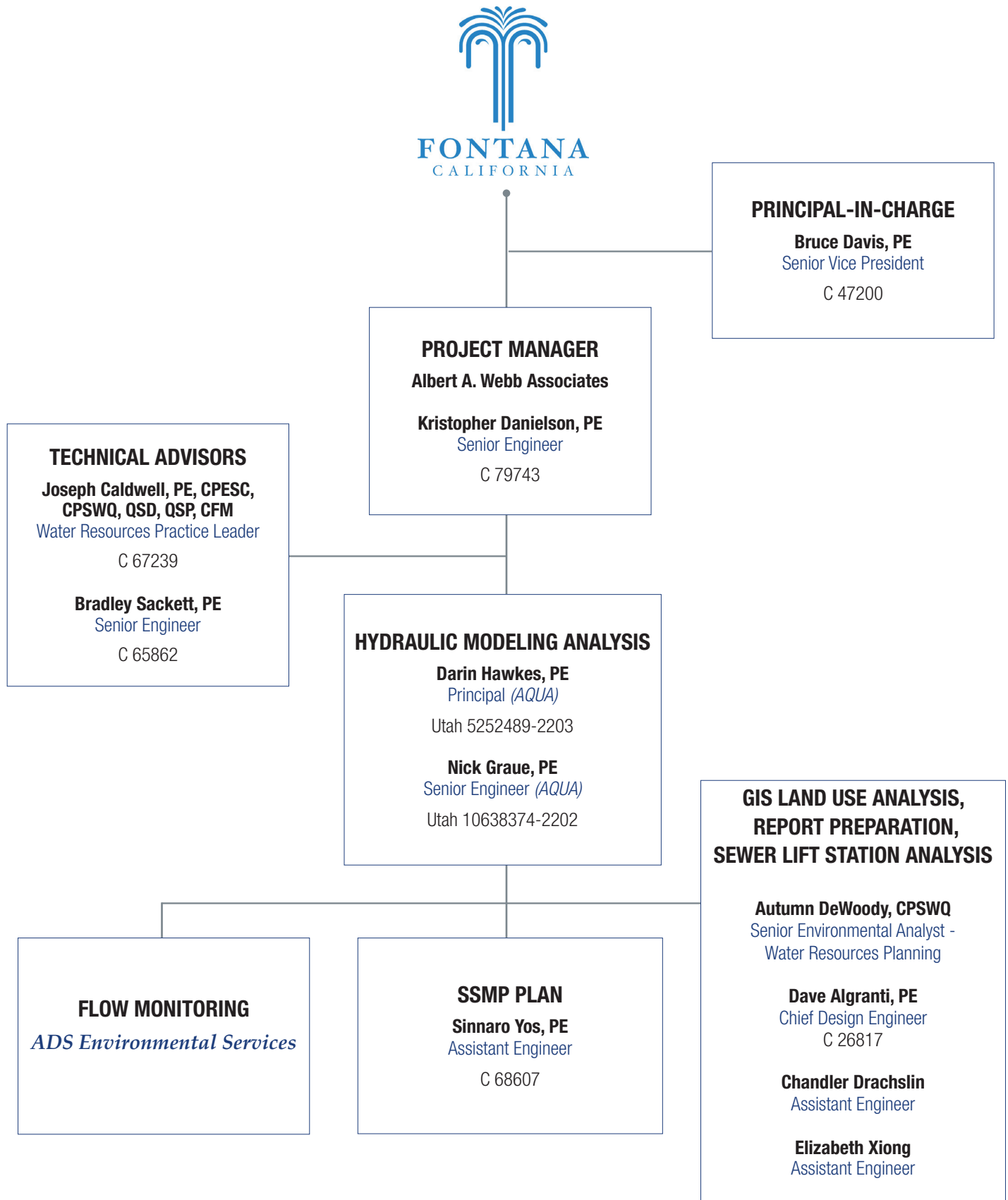
Section 2. Project Schedule

City of Fontana -Master Plan of Sewer Update  
SQ-87-DE-19-32

ID	Task Name	Start	Finish	Duration	Predecessors	2023															
						Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug		
1	<b>TASK 1 - DATA COLLECTION AND FIELD INVESTIGATIONS</b>	Mon 8/1/22	Fri 9/9/22	30 days																	
2	Data Collection	Mon 8/1/22	Fri 8/12/22	2 wks																	
3	System Understanding	Mon 8/15/22	Fri 9/9/22	4 wks	2																
4	Lift Station Site Visits	Mon 8/15/22	Fri 8/26/22	2 wks	2																
5	<b>TASK 2 - GIS GAP ANALYSIS</b>	Mon 8/15/22	Fri 9/16/22	25 days																	
6	GIS Assessment	Mon 8/15/22	Fri 8/26/22	2 wks	2																
7	Analysis	Mon 8/29/22	Fri 9/2/22	1 wk	6																
8	Memorandum	Mon 9/5/22	Fri 9/16/22	2 wks	7																
9	<b>TASK 3 - TEMPORARY FLOW MONITORING</b>	Mon 9/19/22	Fri 12/2/22	55 days																	
10	Develop Plan	Mon 9/19/22	Fri 9/23/22	1 wk	5																
11	Field Work	Mon 9/26/22	Fri 11/4/22	6 wks	10																
12	Analyze Data	Mon 11/7/22	Fri 11/18/22	2 wks	11																
13	Memorandum	Mon 11/21/22	Fri 12/2/22	2 wks	12																
14	<b>TASK 4 - ESTABLISH SEWER FLOW CRITERIA</b>	Mon 12/5/22	Fri 1/13/23	30 days	9																
15	Update Criteria	Mon 12/5/22	Fri 12/9/22	1 wk																	
16	Develop Design Factors	Mon 12/12/22	Fri 12/16/22	1 wk	15																
17	Account for future flows	Mon 12/19/22	Fri 12/30/22	2 wks	16																
18	Prepare Technical Memorandum	Mon 1/2/23	Fri 1/13/23	2 wks	17																
19	<b>TASK 5 - HYDRAULIC SEWER MODEL CALIBRATION AND UPDATE</b>	Mon 9/12/22	Fri 3/17/23	135 days																	
20	Determine Software	Mon 9/12/22	Fri 9/16/22	1 wk	1																
21	Review previous model	Mon 9/12/22	Fri 9/23/22	2 wks	1																
22	Update Model	Mon 1/16/23	Fri 2/10/23	4 wks	14																
23	Calibrate Model	Mon 2/13/23	Fri 2/24/23	2 wks	22																
24	Recommend Modeling Parameters	Mon 2/27/23	Fri 3/3/23	1 wk	23																
25	Prepare Technical Memorandum	Mon 3/6/23	Fri 3/17/23	2 wks	24																
26	<b>TASK 6 - HYDRAULIC MODEL ANALYSIS</b>	Mon 3/20/23	Fri 4/7/23	15 days	19																
27	Existing Condition	Mon 3/20/23	Fri 3/24/23	1 wk																	
28	Ultimate Condition	Mon 3/20/23	Fri 3/24/23	1 wk																	
29	Identify Deficiencies	Mon 3/27/23	Fri 3/31/23	1 wk	27,28																
30	Perform Hydraulic Analysis with CIP	Mon 4/3/23	Fri 4/7/23	1 wk	29																
31	<b>TASK 7 - UPDATE OF SEWER MASTER PLAN</b>	Mon 4/10/23	Fri 6/16/23	50 days	26																
32	Prepare updated Report	Mon 4/10/23	Fri 5/19/23	6 wks																	
33	Review meeting with City	Fri 5/19/23	Fri 5/19/23	0 wks	32																
34	Final Report	Mon 5/22/23	Fri 6/16/23	4 wks	33																
35	<b>TASK 8 - CAPITAL IMPROVEMENT PROGRAM</b>	Mon 3/20/23	Fri 4/28/23	30 days																	
36	5.1 - Cost Estimates	Mon 3/20/23	Fri 4/7/23	3 wks	14,19																
37	5.2 - Project ID and Prioritization	Mon 4/10/23	Fri 4/28/23	3 wks	36																
38	<b>TASK 9 - PREPARE FISCAL AND FEE ANALYSIS</b>	Mon 5/1/23	Fri 6/9/23	30 days	35																
39	Summarize CIP	Mon 5/1/23	Fri 5/5/23	1 wk																	
40	Analyze vacant land and ADU impacts	Mon 5/8/23	Fri 5/12/23	1 wk	39																
41	Prepare Report	Mon 5/15/23	Fri 6/9/23	4 wks	40																
42	<b>TASK 10 - SEWER LIFT STAION ANALYSIS</b>	Mon 3/20/23	Fri 6/2/23	55 days	19																
43	Review Elimination	Mon 3/20/23	Fri 4/7/23	3 wks																	
44	Prepare Cost Estimates	Mon 4/10/23	Fri 4/21/23	2 wks	43																
45	Analyze Performance	Mon 4/10/23	Fri 4/21/23	2 wks	43																
46	Condition Assessment	Mon 4/10/23	Fri 5/5/23	4 wks	43																
47	Prepare Draft Tamarind Plan	Mon 4/24/23	Fri 5/5/23	2 wks	45																
48	Prepare Technical Memorandum	Mon 5/8/23	Fri 6/2/23	4 wks	47																
49	<b>TASK 11 - SSMP UPDATE - Optional</b>	Fri 6/16/23	Fri 8/4/23	35 days	31																
50	Kick off meeting	Fri 6/16/23	Fri 6/16/23	0 days																	
51	Revise SSMP	Mon 6/19/23	Fri 7/14/23	4 wks	50																
52	Review Meeting	Fri 8/4/23	Fri 8/4/23	0 days	51FS+3 wks																
53	Final SSMP	Fri 8/4/23	Fri 8/4/23	0 days	52																
54	<b>TASK 12 - PROJECT MANAGEMENT and QUALITY CONTROL</b>	Mon 8/1/22	Fri 6/30/23	240 days																	
55	Project Management	Mon 8/1/22	Fri 6/30/23	48 wks	1SS,38FF																
56	QA/QC Plan Development	Mon 9/12/22	Fri 9/30/22	3 wks	1																

## Section 3. Key Personnel Organization

The following chart provides an overview of key personnel who will be responsible for the City's project. **All WEBB civil engineers are licensed in the State of California.** All team members, including the project manager, will be available for the duration of the City's project.



## Section 4. Fee Proposal

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The cost file has been submitted in a separate file according to the PlanetBids requirements.



## Section 5. Relevant Projects (WEBB)

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### 2022 Wastewater Master Plan, Rubidoux Community Services District

**Client Contact:** Ted Beckwith, Director of Engineering | 951.684.7580 | tbeckwith@rcsd.org

<https://bit.ly/3QzW1st>

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The WEBB Team has recently completed the Wastewater Master Plan for the District's wastewater collection system. The update is a comprehensive update of the sewer master plan, along with updating the water master plan and preparing the urban water master plan, all on consistent data and land use assumptions. The plan is being developed for a fee nexus to the development impact fee and conditioning new development. The District's sewer service area is approximately 5,400 acres in the northeast corner of the City of Jurupa Valley. The District services approximately 37,000 people and is governed by an elected Board of Directors. The District has approximately 67 miles of gravity main ranging in size from 6-inches to 30-inches in diameter, five lift stations and conveys its sewage to a regional treatment plant.

### 2022 Sewer Master Plan, Jurupa Community Services District

**Client Contact:** Eddie Rhee, PE, Engineering Manager | 951.685.7434 x 118 | erhee@jcsd.us

[Link to JCSD Wastewater Master Plan](#)

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The WEBB Team recently developed the Master Sewer Plan for the District's wastewater system. The District's goal was to develop and update the 2004 Master Sewer Plan to provide a comprehensive Master Sewer Plan that enables the District to strategize planning and budgeting efforts to implement sewer system enhancements in order to maintain a high level of collection reliability and efficiency for current and future flows in compliance with regulatory guidelines. The District's service area covers approximately 40.8 square miles of northwest Riverside County and includes the City of Eastvale and a majority of the City of Jurupa Valley. The District serves approximately 110,000 people and is governed by five elected representatives from both cities. The District's sewer system consists of approximately 385 miles of gravity and force main pipe ranging from 6-inches to 42-inches in diameter, eight active lift stations, and three standby lift stations. Wastewater generated in the District's service area drains to one of three treatment facilities; thus the District's sewer system can be divided into three tributary areas.

### 2022 Water Master Plan, City of Imperial

**Client Contact:** Jackie Loper, Director of Community Development | 760.355.1152 | jloper@cityofimperial.org

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WEBB is currently preparing the Water Master Plan (WMP) for the City of Imperial (City). The City's most current Water Master Plan was prepared in 2006. The 2006 master plan is not representative of current conditions because it was based upon population projections, land use, and development plans that were very aggressive compared to the reality experienced after the 2008 housing crisis. Since then, many development projects have been delayed and/or canceled. In addition, many developments have revised their densities to adjust for changing market conditions. This Water Master Plan will be a valuable tool to assist with budgeting for future maintenance, replacement, and improvement projects for the City's water facilities. The WMP will not only aid in financial planning but will help prioritize facility improvements to meet existing and projected demands.

Key components in the development of this Water Master Plan update include, but are not limited to:

- Inventory of Existing Facilities
- Service Area Evaluation
- Design Criteria & Model Development
- Hydraulic Analysis
- Alternative Assessment
- Capital Improvement Plan
- Routine Maintenance Plan
- Master Plan Report

## Appendix A. Team Resumes

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### REGISTRATIONS

Registered Civil Engineer C 79743 (CA)

### EDUCATION

BS, Civil Engineering  
Brigham Young University  
AS, General Studies  
Ricks College

### CERTIFICATIONS

Sewer CAD Master Modeler  
Water Distribution Modeling

### AFFILIATIONS

American Society of Civil Engineers (ASCE)

## Kristopher A. Danielson, PE

### Senior Engineer

Kristopher (Kris) Danielson, PE, is a Senior Engineer with WEBB's Water Resources Department. Kris specializes in hydraulic analysis, sewer system master planning, and water master planning. His responsibilities include the planning and design of public works facilities, fluid system modeling, and report preparation.

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### County Club Village Wastewater Capacity Study, City of Calimesa

Kris served as Project Manager for this project where the City of Beaumont (Beaumont) required the City of Calimesa (Calimesa) to prepare a sewer availability study for the Country Club Village (CCV) development project currently being planned within Calimesa's boundaries. This area receives sewer service from Beaumont through contract arrangements. Sewage from this development will be delivered into Beaumont's collection system and treated at Beaumont's Wastewater Treatment Plant (WWTP).

### Eastvale Master Sewer Plan, Jurupa Community Services District, Mira Loma

- Kris conducted the hydraulic analysis for the existing and ultimate sewer system using a computer modeling program. He assisted in the development of the final report which addressed existing and projected study areas and wastewater characteristics, existing facilities, design criteria, cost estimates, alternative methods of collection, treatment, disposal, and recommendations of the apparent best alternatives.

### Master Sewer Plan, Jurupa Community Services District (District), Mira Loma

- Kris assisted in the final preparations of the Master Sewer Plan for the District. This report encompassed approximately 16,000 acres. The scope of the report included, among other things, population projections, establishing analysis criteria, projection of wastewater flows, modeling and analyzing existing and ultimate facilities, capital improvement projects summary, cost estimates, and recommendations.

### Master Sewer Plan, Mission Springs Water District, Desert Hot Springs

- Kris assisted in the preparation of the Master Sewer Plan of over 32,000 acres (including the City of Desert Hot Springs and North Palm Springs). He conducted the hydraulic analyses by modeling both the existing and ultimate system. The report analyzed population, environmental and engineering constraints, land utilization, exiting and protected water and wastewater characteristic, waste discharge and treatment requirements, projected wastewater flow criteria, facility design criteria, alternatives, existing facilities, and the proposed system.



## Bruce Davis, PE

### Senior Vice President

Bruce Davis is a Senior Vice President of Albert A. Webb Associates (WEBB). Bruce has been a full-time employee of WEBB since 1986. Bruce currently serves as Director of Water Resources. As Director, he oversees all water and wastewater projects performed by the firm. Since 2018, Bruce has taken the lead representing WEBB in matters involving engineering standard of care and risk management. Bruce is a registered civil engineer in the State of California.

**REGISTRATIONS:**

Registered Civil Engineer  
C 47200 (CA)

**YEARS OF EXPERIENCE:**

34 Years

**EDUCATION:**

BS Civil Engineering, California State  
Polytechnic University, Pomona

**AFFILIATIONS:**

American Public Works Association (APWA)  
American Water Works Association (AWWA)  
California Water Political Action Committee  
(CalWater PAC)  
Association of California Water Agencies  
(ACWA)  
Coachella Valley Economic Partnership  
(CVEP)  
League of California Cities

Bruce has served as Principle-in-charge for well over one hundred regional infrastructure projects. His experience includes planning, design and support during construction of water, wastewater, drainage and transportation projects on behalf of clients including Eastern Municipal Water District, Coachella Valley Water District, Jurupa Community Services District, and cities of Corona, Murrieta, Rancho Mirage, Ontario, Grand Terrace, Rialto and Cathedral City. Project types include pipelines from 8-inch diameter up to 60-inch diameter, pumping ranging in size from one hundred gallons per minute to over 5,000 gallons per minute and storage facilities ranging in capacity from five hundred thousand gallons to over twenty million gallons, roadways, signals, storm drains and basins. Recent water industry projects include O'Ferrell Street Booster Pump Station, Redlands/Hemlock Booster Pump Station, Longview and Watson Roads pipelines, Perris II Desalter pipeline and Markham 7.0-million-gallon storage tank.

Along with experience with regional infrastructure projects, Bruce has extensive knowledge and experience with survey, planning, entitlement, development (residential and commercial) and environmental services. His extensive experience translates to an understanding of all steps required to successfully complete a project efficiently and on schedule. Bruce has served as an expert witness in matters involving land use, entitlements and drainage.

Bruce is a member of and/or involved with American Public Works Association, American Water Works Association, Association of California Water Agencies and League of California Cities. He served several years as a Board member of CalWater PAC which is a political action committee advocating for issues important to California's water supply. Bruce serves as an excellent resource for his clients on current issues and trends in our region.



## Joseph Caldwell, PE, CPESC, CPSWQ, QSD, QSP, CFM

### Water Resources Practice Leader

Joseph Caldwell, PE, is the Practice Leader of WEBB's Water Resources Department. Joseph focuses on the development of master drainage plans, the design of backbone drainage infrastructure, and the design of water quality systems for flood control projects throughout the region. A Certified Professional in Erosion and Sediment Control and Storm Water Quality, Joseph is a specialist in water quality and environmental compliance and an expert in hydrology and hydraulics.

#### REGISTRATIONS

Registered Civil Engineer C 67239 (CA)  
Certified Professional in Erosion and  
Sediment Control (CPESC) 5311  
Certified Professional in Stormwater  
Quality (CPSWQ) 544

#### EDUCATION

MS, Civil Engineering  
Brigham Young University  
BS, Civil Engineering  
Brigham Young University

#### CERTIFICATIONS

Qualified SWPPP Developer  
(QSD) 00076  
Qualified SWPPP Practitioner  
(QSP) 00076  
Association of State Floodplain Manager,  
Inc. (ASFPM)  
Certified Floodplain Manager (CFM)

#### AFFILIATIONS

American Society of Civil Engineers (ASCE)  
American Public Works Association (APWA)  
California Storm Water Quality Association  
(CASQA)  
Floodplain Management Association (FMA)

Joseph's experience includes the design of regional flood control basins, a flood control levee, master drainage plans, and the design and construction of several miles of backbone drainage infrastructure. He has also hydrologically and hydraulically modeled the San Jacinto River from Railroad Canyon to the existing Army Corps levee in the City of San Jacinto. Joseph's extensive knowledge of local agencies' design standards and procedures, and effective working relationships with agency staff, enable him to expedite projects through completion.

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**Heacock Channel Design Project, March Joint Powers Authority** - Joseph served as the Project Manager for Phase 3 of the Heacock Channel Design Project for the March Joint Powers Authority. The project included the preparation of final improvement plans, traffic control plans, and a hydrology and hydraulic report for approximately 3,600-LF of the channel. The project extends from Lateral A of the Perris Valley Storm Drain north along Heacock Avenue to the southern end of an existing land fill. WEBB's services also included project management and coordination throughout the duration of the project including attendance at project design team meetings, quality control services, and all other processing of improvement for necessary project approvals.

**Hemet MDP Line C, Stage 4, County of Riverside Flood Control and Water Conservation District** - Joseph was the Project Manager for the Hemet MDP Line C, Stage 4 Project. The extension of the Hemet MDP Line C was an important component to provide surface flooding relief and flood protection of a predominately developed portion of the City of Hemet. The extension of the Hemet MDP Line C was an important component to provide surface flooding relief and flood protection of a predominately developed portion of the City of Hemet. This segment of the Master Plan Facility represents the middle one third of the entire Line C System. The critical component of this project was implementing a master planned facility in a highly urbanized area of the City extremely constrained by multiple utilities. WEBB completed a Preliminary Design Report that outlined the most feasible alignment for this facility. WEBB is currently preparing final design plans and specifications for this backbone drainage facility.

**Wildwood Creek Basin, City of Yucaipa (City)** - Joseph served as the Project Manager for design of a multi-purpose watershed basin in Wildwood Creek in the City of Yucaipa. WEBB provided engineering services that accommodated the critical needs of the City. This project is located in the middle of a major watercourse. The watershed tributary



## Joseph Caldwell, PE, CPESC, CPSWQ, QSD, QSP, CFM

### Water Resources Practice Leader

to the project is over 4,000 acres and the creek is designated on the Flood Insurance Rate Map by FEMA. The City's goal was to reduce the peak flow utilizing a series of detention basins that in turn will reduce peak flow rates downstream and reduce the burden on those downstream facilities. This reduction in peak flow rates was accomplished through the removal of sediment/debris load and the attenuation of peak flooding through the use of the proposed basins. In addition to providing flood control benefits, this project also provided certain environmental and water quality benefits. To do this, the flood control facilities were developed in such a manner so the construction preserves riparian vegetation, where possible, and implements other measures for environmental and water quality impacts. In order to accomplish this, WEBB reviewed the conceptual design and provided a more precise analysis of the level of flood control protection the basins will provide. WEBB also prepared detailed hydrologic, hydraulic, and sediment transport models to determine the peak runoff rates, flood volume, and debris load.

**North Indio Regional Flood Control Channel Project, Coachella Valley Water District (CVWD)** - Joseph is the Technical Lead for the North Indio Regional Flood Control Channel Project which is a key component of the CVWD flood protection mission in the Coachella Valley. The project will complete the link between existing flood control facilities in the north Indio area, providing increased flood protection for the region. The project consists of over three miles of concrete lined trapezoidal and rectangular channels, including numerous culvert crossings of existing and future streets. To date, WEBB has prepared the hydraulic analysis, preliminary design, and environmental documentation for the project. WEBB is currently in the process of preparing the final design plans, specifications, and estimates. WEBB is also responsible for preparing the CLOMR and providing public outreach and right-of-way acquisition services.

**University Wash Channel, Riverside County Flood Control & Water Conservation District** - Joseph was Technical Lead for the University Wash Storm Drain Project including the planning, analysis, and design of a large diameter master plan storm drain that connects existing upstream and downstream facilities together. This project was unique in that the 2,450-LF, 90-inch RCP required for this project had to be designed to maneuver its way through a developed industrial corridor of the City. Key to this project was the coordination with local businesses to ensure construction of the storm drain minimized impacts to business operations.

**San Jacinto River Stage 3 Master Drainage Plan, Riverside County Flood Control & Water Conservation District (District)** - Joseph served as Project Manager for the WEBB Team responsible for reviewing the current hydrological model, analyzing potential alternative models, and working with the District to decide the best option based for the current Master Drainage Plan. This project consisted of preparation of conceptual drawings for the Master Plan addressing all key elements such as floodplain management, flood control features, environmental preservation, development opportunities, effects on regional infrastructure, right-of-way requirements, and order of magnitude cost. WEBB worked directly with the District to prepare the planning study, coordinated with all stakeholders, and presented all findings to the Advisory Board with recommendations for the next steps (i.e., MSHCP compliance, CEQA strategy, land development constraints, and floodplain management). WEBB is currently working on the final MDP and EIR for the District.

**Bedford Wash Channel, Riverside County Flood Control and Water Conservation District** - Joseph is the Project Manager for the Bedford Wash Channel upstream on the McMillan Property. Services provided included finalizing the 30% design, preparation of all necessary studies, and designs for the final construction drawings, preparation and processing of the Cooperative Agreement and Agency approvals as well as providing on-going coordination with the overall project team during the design of the overall project and with the environmental consultant to assist with obtaining any regulatory permits associated with the channel construction. WEBB provided three iterations of channel design from the point the project was secured, when it was a completely lined concrete channel. Through WEBB's recommendation, the project stakeholders strategically selected to move toward transitioning the channel to a soft bottom.



## Bradley A. Sackett, PE

### Senior Engineer

Brad Sackett, PE, is a Senior Engineer and Project Manager with WEBB's Water Resources Department. Brad specializes in assisting major public agencies with a wide variety of water resource projects. Clients seek his expertise with pumping facilities, water pipeline design, gravity sewer main design, water and sewer system master plans, hydraulic modeling analysis, and sewer resource plans for Specific Plan Environmental Impact Reports (EIRs), among other projects.

Brad has been instrumental in assisting clients with in-house projects, while representing these agencies with their constituents as an on-site consultant. Throughout Brad's career he has been intricately involved in the design, management, and construction support of projects for such clients as Eastern Municipal Water District (EMWD), Western Municipal Water District (WMWD), and the cities of Riverside and St. Helena, to name a few.

His detailed approach ensures each project integrates flawlessly into master plan requirements from concept through construction. He specializes in operations take-over and integration of systems with a focus on cost effective and efficient transitions.

#### REGISTRATIONS

Registered Civil Engineer C 65862 (CA)

#### EDUCATION

BS, Chemical Engineering  
Massachusetts Institute of Technology

#### AFFILIATIONS

American Water Works Association (AWWA)

**Master Sewer Plan, Jurupa Community Services District (District), Mira Loma** - Brad assisted in the preparations of the Master Sewer Plan for the District. This report encompassed approximately 16,000 acres. The scope of the report included, among other things, population projections, establishing analysis criteria, projection of wastewater flows, modeling and analyzing existing and ultimate facilities, capital improvement projects summary, cost estimates, and recommendations.

**Lakeview/Nuevo Area Wide Master Plan, Eastern Municipal Water District (District)** - The Master Plan area encompasses 16.7 square miles currently within the District's existing 1698, 1720, and 1831 water pressure zones. The areas of these pressure zones will be expanded and/or modified to place the entire project area within three water pressure zones; 1720, 1831, and 1850. The proposed water, sewer, and recycled water facilities conceive approximately 179,200-FT (33.9 miles) of water transmission pipelines, approximately 111,900-FT (21.2 miles) of sewer collection and interceptor pipelines, and 99,100-FT (18.8 miles) of recycled water pipelines.

These service facilities also include the installation of five new and the relocation of two existing water booster stations, installation of four new sewer lift stations, and the construction of six above-ground water storage tanks (reservoirs) at five locations.

## **Bradley A. Sackett, PE**

Senior Engineer

**Master Plan Updates, Western Municipal Water District (District)** - Brad served as Project Manager for the District's project. This project included updates to the North and South AFC Master Plan, the Sewer Master Plan, MARB Water Master Plan, the Recycled Water Master Plan, the Murrieta Water Master Plan, and development of the Murrieta Sewer Master Plan. All plans were brought current by verifying the current land use, EDU's and demands, updating facilities to be constructed and associated cost estimates, and preparing a CEQA document at the programmatic level allowing WMWD to consider adoption of the master plan by the Board of Directors. The master plans and associated CEQA document was presented to the Board for consideration.

**Water Supply Evaluation, Western Municipal Water District (District)** - Brad served as Project Manager for the District's project. In 2016, WEBB provided engineering services to evaluate available water export amounts from Riverside Highland Water Company's (RHWC) rights that might be transferable to the Western Municipal Water District (WMWD) in the future. The study results are used as the basis of a lease agreement between the two agencies. The study includes (1) Verify RHWC's annual water rights within the San Bernardino Basin Area and allowable delivery limits outside of San Bernardino County (2) Determine RHWC's existing water demands, (3) Determine RHWC's future demands, in five year increments, out to ultimate build-out, and (4) Identify surplus water rights available for transfer from RHWC to WMWD at five year increments through build-out.

**South Regional Lift Station Analysis, Western Riverside County Regional Wastewater Authority** - Brad served as the Project Manager for this project. WEBB obtained as-built plans, pump information, current operating conditions, and ultimate flow projections from each agency. Based on the hydraulic analysis of the systems, WEBB determined the existing system maximum capacity and compared against ultimate daily and instantaneous flow projections. Since there is essentially no storage capacity in the South Regional Lift Station and conveyance system, all wet weather and peak flows must be pumped to the treatment plant to avoid sewer spills or discharges to the IEBL emergency connection. Flow projections included both dry weather and wet weather maximum flows based on estimates of peaking factors for both situations. Improvements were identified to meet the ultimate flow projects.

**Baxter Road and Clearview Street Lift Stations, Eastern Municipal Water District** - Brad served as Senior Engineer for this project. Two lift stations were partially constructed during the mid-2000's but were never completed when the housing market collapsed. With the recovery of the housing market and a revised development proposal, WEBB analyzed the proposed development plan based on revised tributary areas, determined the ultimate station capacity, inspected the existing facilities for current condition and salvageable facilities, re-designed and specified all required improvements and installation for both the renovated Baxter Road Lift Station, Clearview Street Lift Station, and the abandonment of the Meniffee Court Lift Station.

## Sinnaro Yos, PE

Senior Engineer

### REGISTRATIONS

Registered Civil Engineer C 68607 (CA)

### EDUCATION

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

Sinnaro Yos, PE, is a Senior Engineer with WEBB's Water Resources Department. Sinnaro offers clients extensive experience managing the design and construction of a wide range of public works projects that enhance water quality and supply including water and wastewater systems, water reclamation, and water and wastewater treatment.

Sinnaro's responsibilities include master plan reports for water and wastewater systems, water and sewer pipeline sizing and hydraulic analysis, alignment analysis, and pipe thickness design. He also focuses on water booster stations, sewer lift stations and deep well drilling and equipping design, utilities coordination and permitting through agencies, preparation of bid documents, and engineering cost estimates.

## David Algranti, PE

Chief Design Engineer

### REGISTRATIONS

Registered Civil Engineer C 26817 (CA)

### EDUCATION

BS, Civil Engineering, California Polytechnic  
University, Pomona

### AFFILIATIONS

American Water Works Association (AWWA)

David (Dave) Algranti, PE, is a Chief Design Engineer with WEBB's Water Resources Department. Dave has years of experience in the planning, design, and construction of water resources projects. With such deep knowledge of water-related systems, he assists as technical advisor for all WEBB teams handling such projects for clients. Dave helped develop WEBB's quality management program, enabling him to coordinate and directly perform project quality control and assurance - making sure project technical issues are recognized early and resolved efficiently by an expert in the firm.

He has provided design and supervisory services for a wide range of water systems projects that provide reliable infrastructure to improve communities. These include water storage reservoirs, major water pumping plants, surge and water hammer control equipment, water treatment plants, water wells, and water transmission mains.

## Autumn DeWoody, CPSWQ

Senior Environmental Analyst

### EDUCATION

MS, Environmental Sciences  
University of California, Riverside

BS, Environmental Sciences  
University of California, Riverside

### CERTIFICATIONS

CPSWQ No. 0927  
Certified Level 1 Water Audit Validator

### AFFILIATIONS

Association of Environmental Professionals  
(AEP)  
Groundwater Resources Association of  
California (GRA),  
Southern California Chapter

Autumn DeWoody, CPSWQ, is a Senior Environmental Analyst with WEBB's Planning and Environmental Department. Autumn offers clients a bridge between our technical municipal and stormwater engineering services and environmental documentation. She regularly partners with WEBB's project managers to prepare various planning documents on behalf of our water, wastewater, and flood control district clients. In addition, Autumn offers private and public clients jurisdictional delineations and regulatory permitting services as well as environmental monitoring at construction sites to ensure compliance with Mitigation, Monitoring, and Reporting Plans (MMRPs). She has been repeatedly commended by clients on the frequency and helpfulness of





## Darin Hawkes, PE | Principal

Phone: 801.683.3727 | Email: [darin.hawkes@aquaeng.com](mailto:darin.hawkes@aquaeng.com)

Mr. Hawkes' has a vast amount of experience in various civil engineering disciplines. He specializes in difficult projects that often have space, access and/or extreme time constraints. He has developed a reputation for being able to view a problem from multiple angles to develop a solution that works for his client. His experience ranges from pumping system design, concrete storage tanks and open reservoir design, to large concrete water storage facilities and high elevation snowmaking reservoirs and dams. Many of his projects are provided as turn-key solutions for his clients with his direct involvement from conceptual design through contract administration and project close-out. As part of the AQUA team, he has lead and assisted in numerous design projects, the completion of several System Capacity Analyses, Municipal Capital Facility Plans and large-scale Master Plans for both culinary water and wastewater.

### Project Experience

#### Master Plans, Capital Facility Plans, Planning Documents

##### Town of Bennett, CO | Custer Bypass Sewer Alignment Study Principal-in-Charge, Senior Principal Engineer

AQUA assisted the Town of Bennett in identifying the preferred alternative alignment for a new sanitary sewer force main. The Town's sewer collection system was limited in capacity due to a handful of hydraulic "bottlenecks" in the existing collection system. AQUA evaluated five (5) different alternatives to add conveyance capacity to the collection system. The alternatives consisted of gravity, pressurized force main, and a combination of both. The project involved hydraulic modeling, master planning, capital facilities planning and cost estimation.

##### Northpoint Development | Lakeview Business Park Water & Sewer Master Plan

###### Principal-in-Charge, Senior Principal Engineer

AQUA developed a sanitary sewer system hydraulic model and subsequent capital facilities plan as part of the overall master planning process related to the development of the Lakeview Business Park, a 15M+ square foot commercial, industrial and warehousing development located in Grantsville, UT. The project involved mapping, sewer modeling, master planning, capital facilities planning and cost estimation.

##### Town of Bennett, CO | Capital Asset Inventory Assessment & Master Plan Senior Principal Engineer

In conjunction with several engineering and planning firms, AQUA Engineering developed the water and sewer portions of the Town of Bennett Capital Asset Inventory Assessment and Master Plan. This involved the development of potable water and sanitary sewer hydraulic models for the entire Town. AQUA evaluated the existing systems against planned developments and proposed capital improvements necessary to meet the increased demands of a growing municipality.

##### Grantsville, UT | On-Call Sewer Modeling

###### Principal-in-Charge, Senior Principal Engineer

AQUA provides on-call hydraulic modeling services to the City of Grantsville to assist with development review and master planning updates.

##### Grantsville, UT | Sanitary Sewer Masterplan

###### Principal-in-Charge, Senior Principal Engineer

AQUA developed a sanitary sewer system hydraulic model and subsequent capital facilities plan as part of the overall master planning process for the city of Grantsville, UT. The project involved mapping, sewer modeling, master planning, capital facilities planning and cost estimation.

### Education

BS Civil Engineering,  
University of Utah, 2003

### Registration

Professional Engineer (Structural):  
Utah

### Work Experience

19 Years

### Affiliations

ASCE

### Expertise

- Hydro and Civil Structural Design (Storage Tanks, Retaining Walls, Platforms, etc.)
- Pumping System Design
- Industrial Facility Expansion, Remodel and Retrofit
- Hydraulic & Hydrologic
- Computer Modeling
- Facility Plans & Master Plans
- Water Resources Treatment

## Darin Hawkes, PE | Principal

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### Project Experience (continued)

#### **Hyrum, UT | Sanitary Sewer Masterplan**

Principal-in-Charge, Senior Principal Engineer

AQUA developed a sanitary sewer system hydraulic model and subsequent capital facilities plan as part of the overall master planning process for the city of Grantsville, UT. The project involved mapping, sewer modeling, master planning, capital facilities planning and cost estimation.

#### **Mayflower Mountain Resort Water Master Planning & Design**

Principal-in-Charge, Senior Principal Engineer

Engineering Analysis, Hydraulic Modeling, Water Master Planning, Water Storage Tanks, Pump Stations, Flow Control Facilities, PMSs, Utility Design, Project Management

#### **Driggs Idaho Water System Facility Plan**

Project Engineer

CAD software water modeling, Planning and system characterization

CAD Water Model Design, Entire system Master Plan. Overseen CAD modeling and report creation and submission.

#### **Western Zirconium Chemical Milling Facility Site Feasibility Study**

Senior Principal Engineer

#### **Sage Glen Well Preliminary Engineering Report**

Project Engineer

Develop PER as required per Utah Division of Drinking Water Requirements

Rural & sensitive site, New well for upscale development. Completed Well Head Protection Area (WHPA) Analysis and CAD Model. Generated a detailed PER report.

#### **Pole Canyon West Utilities Master Plan**

Project Engineer

Planning, Survey coordination, CAD Utility Modeling, Cost analysis

Large system master plan for 900+ unit annexation property including, potable water source, storage, & distribution and storm drain utilities. Overseen CAD modeling, project cost estimating and funding analysis; and oversee report creation and submission.

#### **West Wendover Nevada Culinary Water and Wastewater System Master Plan**



## Nicholas Graue, PE | Senior Project Engineer

**Phone:** 801.683.3733 | **Email:** nick.graue@aquaeng.com

Mr. Graue is an intensely ambitious Professional Engineer and Project Manager backed by over a decade of experience in the Water and Energy sectors with a proven track record of successful project delivery and program implementation. Nick's deep passion for natural resource conservation has steered him to managing engineering projects where technology can be leveraged to achieve a more sustainable infrastructure. Nick's work experience involves the entire life cycle of engineering projects from capital planning, feasibility analyses and engineering design to contract administration, construction management, facility commissioning and operations consulting.

### Project Experience

**Mayflower Mountain Resort Water Master Planning & Design,**  
Engineering Analysis, Hydraulic Modeling, Water Master Planning, Water Storage Tanks, Pump Stations, Flow Control Facilities, PRVs, Utility Design, Project Management

**Northpoint Development | Lakeview Business Park Water & Sewer Master Plan**  
Engineering Analysis, Hydraulic Modeling, Utility Master Planning, Design, Project Management

**Town of Bennett, CO | Custer Bypass Sewer Alignment Study**  
Engineering Analysis, Hydraulic Modeling, Utility Design, Project Management

**Boulder County, CO San Souci Water Treatment Plant**  
Surface Water Treatment, Facility Planning, Design, Permitting, Project Management

**West Wendover Water GIS Mapping Update**  
GIS Master Planning, Database Design

**Spring Valley Metro District #1, CO Arapahoe Well #2**  
Groundwater Development, Hydraulic Analysis, Design, Project Management

**Snowbird Resort Mid-Gad Lodge Spring Collection & Disinfection Project, 2020**  
Groundwater, Site Utilities, Mechanical Design, Project Management

**Salt Lake County Service Area 3 Chickadee Ski-Run Water & Sewer Realignment Project**  
Utilities, Water Distribution, Wastewater Collection, Construction Management

**Oakley City, UT Cottonwood Springs Improvements**  
Groundwater, Mechanical Design, Project Management

**Aspen Acres Association Spring Improvements,**  
Groundwater, Mechanical Design, Instrumentation & Controls, Project Management, Construction Management

**Mountain Regional Water, Glenwild Booster Station Upgrades**  
Hydraulic Analysis, Mechanical Design, Site Utilities, Permitting

**Mountain Regional Water, Hidden Creek PRV & Booster,**  
Construction Management

**Metro Water District of Salt Lake and Sandy Telemetry Radio System Improvements**  
Telemetry System Planning & Design

**Town of Alta, UT Bay City Mine Pump Improvements**  
Hydraulic Analysis, Mechanical Design, Permitting

### Education

BS Civil Engineering  
University of Utah, 2013

### Registration

Professional Engineer:  
UT, CO, NV, ID, OR, WA

### Certifications

Envision Sustainability Professional (ENV SP), Institute for Sustainable Infrastructure

### Work Experience

12 Years

### Affiliations

AWWA  
AWWA/Energy Management Committee

### Expertise

- Project Management
- Water System Master Planning
- Hydraulic Modeling
- Pumping System Design
- Intelligent Water Systems
- SCADA & Instrumentation
- Water Conveyance & Transmission
- Asset Management
- Site Utilities
- Water Distribution
- Water Storage Facilities