

**Marina Coast Water District
Regional Urban Water Augmentation Project
Distribution Pipelines**

SCOPE OF WORK

The purpose of this scope of work is to provide engineering services to complete the design of approximately 30,000 linear feet of recycled water distribution pipelines to serve irrigation needs in the District's service area. Laterals will include:

- Beach Road (4,200 linear feet)
- Carmel Avenue (2,800 linear feet)
- Abrams Drive (4,000 linear feet)
- Imjin Parkway (3,600 linear feet)
- Blanco Road (1,100 linear feet)
- Reservation Road (9,000 linear feet)
- 9th Street (2,000 linear feet)
- Coe Avenue (3,500 linear feet)

Locations of these distribution mains are presented in Figure 1 at the end of this scope of work. This scope of work also includes design of up to 5 pressure reducing stations between the transmission main and distribution pipelines to reduce high water pressure in the transmission main to the District's standard operating pressure in the distribution mains. It is anticipated the pressure reducing stations will include a pressure reducing valve, flow meter, and SCADA communication to the District. Bid services, engineering services during construction, and record drawings are also included.

Task 1 - Project Management and Coordination

Carollo will provide project management as necessary for proper planning, execution, monitoring, and reporting of the project progress. The following key subtasks have been identified:

Task 1.1 - Project Administration

Carollo will monitor project progress, manage subconsultants, develop and maintain the schedule, and prepare and submit monthly invoices and progress reports.

Task 1.2 - Project Meetings

Carollo will prepare agenda and meeting minutes for the following project meetings, which are anticipated to take place at MCWD offices:

- Kick-Off Meeting
- 95% Design Review Meeting
- 100% Design Review Meeting

Carollo will facilitate a bi-weekly project progress conference call and provide a summary email of action items and discussion topics after each call.

Task 1 Assumptions

- 8 month duration (from kick-off through bid opening)

Task 1 Deliverables

- Monthly Invoices and Progress Reports
- Project Meeting Agenda and Meeting Minutes
- Progress Meeting Summaries
- Baseline schedule and schedule updates
- Decision Log (continuously updated)

Task 2 - Utility Investigations and Potholing

Carollo will review available reports, records, data, maps, and other documents for design development. Carollo will identify information needed to complete the design. Carollo will send all of the existing utilities in the project vicinity a letter requesting mapping of their facilities within the project limits. We will review existing pothole data for the project. Based on information received from the utility companies and on existing pothole data, we will create a new potholing plan. Up to two (2) days of potholing has been budgeted.

Task 2 Assumptions

- The District will provide record drawings of existing recycled water distribution mains that have been installed.
- The District will provide record drawings for existing water and sewer pipelines.
- The District will contact and coordinate with end users for locations where the recycled water distribution mains will terminate.

Task 2 Deliverables

- List of information needs
- Information obtained in the task will be incorporated into the design plans.

Task 3 - Permits, Rights-of-Way, Easements

Carollo will develop a matrix of all needed permits, rights-of-way/easements, and property acquisition to complete the project. Carollo will provide technical assistance to support the District's efforts to obtain permits and easements.

Task 3 Assumptions

- District will lead easement acquisition efforts (if needed)
- District will lead the permit acquisition efforts
- Carollo will attend one design review meeting with the City of Marina

Task 3 Deliverables

- Matrix identifying needed permits and land rights, status, and next steps
- Exhibits and 1 plat and legal description prepared by a licensed surveyor to obtain an easement (if needed)

Task 4 - Design Plans and Specifications

Carollo will revise the current plans that have been developed to 60% and create new plans where needed. Carollo will prepare project specifications, and cost estimates to reflect the current project configuration and sizing. Plans will be developed in AutoCAD. Carollo technical specifications will be used in conjunction with the District's front end documents. Carollo will work with the District to assist the District in developing a bidding strategy to prioritize distribution mains to be installed with available funding.

Carollo and Whitson Engineers (survey subconsultant) have performed a review the 2009 topographic survey against current field conditions and identified locations where field conditions have changed substantially or survey was not performed in 2009. The following locations need to be surveyed:

- Reservation Road from Blanco Road to East Garrison
- Imjim Parkway from Reservation Road to Abrams Drive*
- 9th Street from 3rd Ave to 5th Ave
- Coe Avenue from General Jim Moore to Pacific Crest Drive
- Beach Road and Del Monte Boulevard Intersection
- Carmel Ave from Crumpton Lane to Lyscott Drive
- Abrams and MacArthur Intersection
- Imjim and Abrams Intersection*

* Whitson Engineers surveyed these locations for Kimley-Horn for the City of Marina in January 2017, which could be used for this project and reduce the survey cost. City of Marina approval would be needed to use this information.

Task 4.1 - 95% Design Package: Plans, Specifications, and Cost Estimate

Carollo will submit a 95% design package for District review. A design review meeting to review the 95% design documents will be conducted. Meeting notes and comments will be captured and recorded, with responses to comments provided.

Task 4.2 - Final Design and Bid Package: Plans, Specifications, and Cost Estimate

Carollo will submit final design documents for District review. A design review meeting to review the final design documents will be conducted. Meeting notes and comments will be captured and recorded, with responses to comments provided. Carollo will incorporate comments into a bid package for the District to advertise the project for construction.

Task 4 Deliverables:

- Five (5) hard copies of the 95% design half size drawings, 5 hard copies of the technical specifications, and 5 hard copies of the cost estimate. Electronic copies (pdf) of the plans, specifications, and cost estimate. Updates of the project schedule and matrix of permits and land rights will be provided.
- Five (5) hard copies of the final design half size drawings, 5 hard copies of the technical specifications, and 5 hard copies of the cost estimate. Electronic copies (pdf) of the plans, specifications, and cost estimate. Updates of the project schedule and matrix of permits and land rights will be provided.
- Five (5) half size and five (5) full size hard copies of the Final Bid Documents; five (5) hard copies of the specifications. Electronic copies (pdf) of the plans, specifications, and cost estimate.

Task 5 - Bids Services

Carollo will prepare for and attend a pre-bid meeting, respond to all bidder inquiries, and prepare addenda to the bid documents, as needed. Carollo will also assist in evaluation of the bids, if requested.

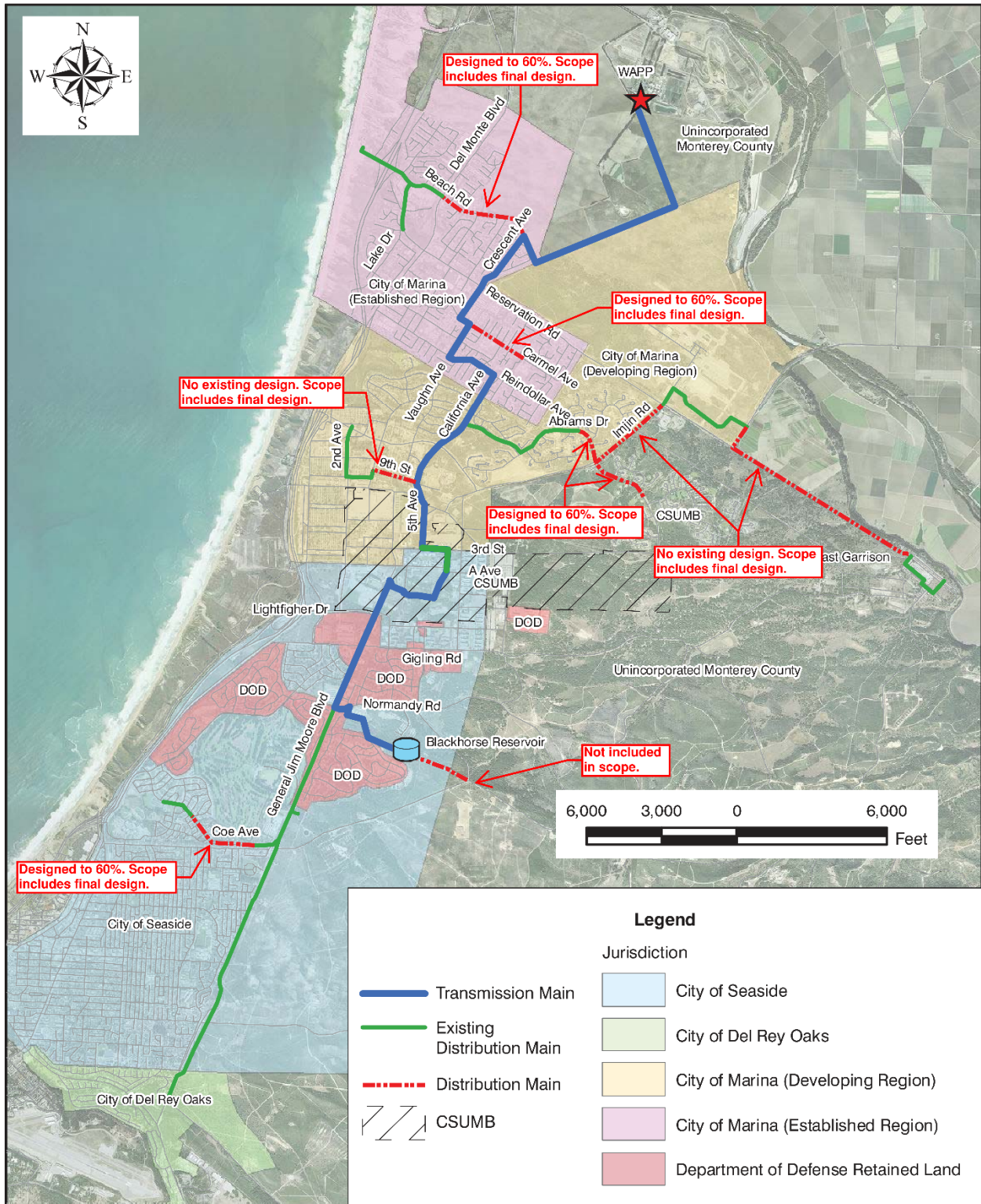
Task 5 Assumptions

- None

Task 5 Deliverables

- Pre-Bid meeting agenda
- Responses to Bidder Questions and Addenda (2 assumed)

Figure 1: Locations of distribution mains included in scope of work.



**Marina Coast Water District - Regional Urban Water Augmentation Project
Distribution Pipelines - Fee Estimate**

Task	Description	Carollo									Sub-Consultants				Other Direct Costs		Totals	
		Principal	PM / PE	Structural / Electrical	Project Professional	Staff Engineer	CADD Tech	Document Processing	Subtotals		PECE	Survey*	Potholing	Subtotals	Markup 10%	Misc. Costs and Printing		Travel
		\$285	\$265	\$265	\$245	\$175	\$188	\$118	Hours	Budget	\$11.70							
Task 1	Project Management	30	56	0	0	40	0	0	126	\$ 30,390	\$ 1,474	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,000	\$ 32,864
1.1	Project Administration	6	16						22	\$ 5,950	\$ 257			\$ -	\$ -			\$ 6,207
1.2	Kick-off, Status, and Design Review Meetings	24	40			40			104	\$ 24,440	\$ 1,217			\$ -	\$ -		\$ 1,000	\$ 26,657
Task 2	Utility Investigations & Potholing	2	16			40	16		74	\$ 14,818	\$ 866	\$ -	\$ 15,000	\$ 15,000	\$ 1,500	\$ -	\$ -	\$ 32,184
Task 3	Permits, Rights-of-Way, and Easements	6	12	0	0	32	16	16	82	\$ 15,386	\$ 959	\$ 2,120	\$ -	\$ 2,120	\$ 212	\$ -	\$ 150	\$ 18,827
3.1	Permitting Assistance	4	8			24	8	8	52	\$ 9,908	\$ 608			\$ -	\$ -		\$150	\$ 10,666
3.3	Right-of-Way / Easement Assistance	2	4			8	8	8	30	\$ 5,478	\$ 351	\$ 2,120		\$ 2,120	\$ 212			\$ 8,161
Task 4	Design Plans and Specifications	28	232	116	72	388	472	43	1,351	\$ 279,550	\$ 15,807	\$ 78,270	\$ -	\$ 78,270	\$ 7,827	\$ 1,500	\$ -	\$ 382,954
4.1	95% Design Development - PS&E	21	174	87	54	291	354	32	1013	\$ 209,633	\$ 11,852	\$ 78,270		\$ 78,270	\$ 7,827	\$ 500		\$ 308,082
4.2	Final Design and Bid PS&E	7	58	29	18	97	118	11	338	\$ 69,917	\$ 3,955			\$ -	\$ -	\$ 1,000		\$ 74,872
Task 5	Bid Services	4	20	0	0	20	4	4	52	\$ 11,164	\$ 608	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 200	\$ 11,972
5.1	Pre-Bid Meeting		8			8			16	\$ 3,520	\$ 187			\$ -	\$ -		\$ 200	\$ 3,907
5.2	Addenda	2	8			8	4	4	26	\$ 5,314	\$ 304			\$ -	\$ -			\$ 5,618
5.3	Questions During Bidding	2	4			4			10	\$ 2,330	\$ 117			\$ -	\$ -			\$ 2,447
Task 1-5 Project Totals		70	336	116	72	520	508	63	1,685	\$ 351,308	\$ 19,714	\$ 80,390	\$ 15,000	\$ 95,390	\$ 9,539	\$ 1,500	\$ 1,350	\$ 478,801

*Whitson Engineers may have some survey information available from recent work for the City of Marina that would reduce the survey cost, but would need City of Marina approval to use.