

DATE SUBMITTED 04/08/2020
 SUBMITTED BY Public Services
 DATE ACTION REQUIRED 04/15/2020

COUNCIL ACTION
 PUBLIC HEARING REQUIRED
 RESOLUTION
 ORDINANCE 1ST READING
 ORDINANCE 2ND READING
 CITY CLERK'S INITIALS

**IMPERIAL CITY COUNCIL
 AGENDA ITEM**

SUBJECT: Engineering Services	DISCUSSION/ACTION: 1. Discuss, Approve/Disapprove proposal for Engineering Services for Water Master Plan
DEPARTMENT INVOLVED: Public Services	
BACKGROUND/SUMMARY: Albert A. Webb Associates has provided a proposal, to prepare a Water Master Plan for the City. The most current plan was prepared in 2006 that does not represent current conditions. Plan would include: <ul style="list-style-type: none"> • Inventory of Existing Facilities, Service Area Evaluation, Design Criteria, Model Development, Hydraulic Analysis, Alternative Assessment, Capital Improvement Plan, Routine Maintenance Plan, Master Plan Report 	
FISCAL IMPACT: \$196,195 Water Bond	FINANCE INITIALS 
STAFF RECOMMENDATION: Approve	DEPT. INITIALS 
MANAGER'S RECOMMENDATION: <i>approve</i>	CITY MANAGER'S INITIALS 
MOTION:	
SECONDED: AYES: NAYES: ABSENT:	APPROVED <input type="checkbox"/> DISAPPROVED <input type="checkbox"/> REJECTED <input type="checkbox"/> DEFERRED <input type="checkbox"/> REFERRED TO:



Corporate Headquarters
3788 McCray Street
Riverside, CA 92506
951.686.1070

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74967 Sheryl Avenue
Palm Desert, CA 92260
951.686.1070

Murrieta Office
41870 Kalmia Street #160
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April 8, 2020

WO:18-0229

Mr. Jackie Loper
Public Services Director
City of Imperial
420 S. Imperial Avenue
Imperial, CA 92251

RE: Proposal for Water Master Plan

Dear Mr. Loper,

Pursuant to your request, Albert A. Webb Associates (WEBB) is pleased to provide this proposal to prepare a Water Master Plan 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 cancelled. In addition, many developments have revised their densities to adjust for changing market conditions. This proposed 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. A Water Master Plan will not only aid in financial planning but will help prioritize facility improvements to meet existing and projected demands. Our scope of work will include the following tasks.

WATER MASTER PLAN

INVENTORY OF EXISTING FACILITIES

An inventory of the water facilities including the Water Treatment Plant (WTP), water storage reservoirs, booster stations, transmission pipelines and distribution pipelines will be provided. Additionally, two (2) site visits will be budgeted for as part of this work to conduct a visual inspection for obvious signs of deficiencies or deterioration. Interviews will be conducted with City operations staff to gain feedback regarding maintenance issues and operational challenges. Problem areas will be noted so a detailed investigation can be planned for by specialized professionals under a separate contract.

SERVICE AREA EVALUATION

Our team will closely coordinate with the City's Planning Department and General Plan to ensure the most accurate planning estimates are being utilized. Figures and tables will be prepared to identify service boundaries, the sphere of influence, and benefit areas. The various land use types will also be identified. Also included as part of this work is research into special local and regional government requirements for water distribution.

DESIGN CRITERIA

A review of the City's existing design standards will be compared to local standards and historical demand data. Design standards will include peaking factors, coefficient of friction, pressure criteria, velocity constraints, required water storage volume, treatment capacity, and pumping rates. Recommended design standards will be presented to the City for review prior to sizing proposed facilities. Growth projections will be based on the average of historical demand data.

MODEL DEVELOPMENT

A copy of the City's existing water model will be utilized and updated to match the current conditions with the help of the City's input and any available as-built plans and GIS data. Webb has been working with the City for several years and has prepared hydraulic evaluations to assist in the development of new infrastructure and will use this background knowledge to assist with model updates. WEBB will base pipeline elevations on available free surface data available through ESRI adjusted by a factor of 1000 ft to avoid working in negative elevations. If pump curve and diurnal curve data is available, this information will be used in the model. SCADA settings will also be added to the model so that an Extended Period Scenario (EPS) can be developed.

Model reconciliation will be conducted by taking field pressure readings during controlled pumping rates. If the City has a collection of past field fire flow tests, then these tests will also be used to adjust the model. Hazen-Williams roughness coefficients will be changed in the model for pipes based on age and material type until model output pressures are reasonably close to the field readings (preferably within 5 percent of the field data). Pump curve data will be collected from the City to populate the model along with recent pump efficiency test information and control settings.

HYDRAULIC ANALYSIS

With a reconciled model, various model runs will be analyzed to determine system deficiencies. Potential problem areas will be addressed with proposed facilities sized to meet both existing and future demand estimates. Both the analysis and sizing of facilities will be based on the agreed upon design standards.

ALTERNATIVE ASSESSMENT

From a hydraulic standpoint, multiple improvement alternatives may exist. A general evaluation of the alternative solutions will be conducted considering design criteria, environmental impact, land requirements, construction issues, operations aspects, cost estimates, and other advantages and disadvantages. A more detailed analysis may be warranted during the preliminary design phase of the improvement which would be done under a separate contract.

CAPITAL IMPROVEMENT PLAN

A basic description of each improvement will be provided. The description will include justification for the recommended alternative, prioritization, approximate year to construct, and estimated costs. Improvements included in the Capital Improvement Plan will be categorized into one of the following categories: (1) immediate need, (2) 10-year horizon needs, (3) 20-year horizon needs, or (4) ultimate needs.

ROUTINE MAINTENANCE PLAN

Included in the scope of work is a Routine Maintenance Plan which will include recommendations for storage facilities, booster stations/pumping units, transmission pipelines, distribution pipelines, SCADA system, disinfection and treatment facilities.

Mr. Loper
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MASTER PLAN REPORT

Each of the aforementioned items will be discussed in a formal Master Plan report and delivered to the City.

EXCLUSIONS

Any work relating to the following is specifically excluded from the services proposed herein and, if required, must be included in a separate contract or as an addendum to this contract:

- Preliminary and/or final design of system improvements
- Environmental documentation and/or studies
- Right of way evaluation and utility research
- Survey
- Geotechnical Study
- Water Quality Analysis

DELIVERABLES

Three hard copies and a PDF copy of the Master Plan Report will be provided for review and comment at the 70 percent, 90 percent, and 100 percent phases. Additionally, PDF copies of maps, tables, and standards will be provided in the earlier stages of the development of the Master Plan for clarification and insight from City staff members.

SCHEDULE AND COMPENSATION

It is anticipated the project will be completed in approximately twelve (12) months after notice to proceed. These services will be performed on a percent complete basis for a total fee of \$196,195 (see Attachment A). Charges will be billed monthly and all invoices shall be due and payable upon receipt and shall include zero retention.

We thank you for the opportunity to continue working with you on this critical project. Should you have any questions, please contact me at (951) 686-1070.

Sincerely,
ALBERT A. WEBB ASSOCIATES



Brian Knoll, P.E.
Senior Vice President

Cc: Kris Danielson, WEBB

Attachment A

Water Master Plan - City of Imperial

	Description	Principal II - \$281	Senior I - \$209	Assistant III - \$129	Assistant II - \$109	Project Coordinator - \$107	Total Hours	Total/Task ¹
1	General	60	44	10		18	132	\$ 29,272
	1.1 Project Management	32	16	10		8	66	\$ 14,482
	1.2 Kickoff Meeting	8	8			2	18	\$ 4,134
	1.3 Conference Calls	20	20			8	48	\$ 10,656
2	Inventory of Existing Facilities	22	48	28	20		118	\$ 22,006
	2.1 Site Visits	8	16	8	8		40	\$ 7,496
	2.2 WTP & Other Facility Assessments	12	16	16	8		52	\$ 9,652
	2.3 Generate Inventory of Existing Facilities	2	16	4	4		26	\$ 4,858
3	Service Area Evaluation	4	12	26	52		94	\$ 12,654
	3.1 Review Base Map		2	2	12		16	\$ 1,984
	3.2 Develop Land Use Map	2	6	8	32		48	\$ 6,336
	3.3 Identify Proposed Developments	2	4	16	8		30	\$ 4,334
4	Design Criteria	5	18	40	14	4	81	\$ 12,281
	4.1 - Review Existing Design Standards	2	4	16	8		30	\$ 4,334
	4.2 - Estimate Growth Projections	1	8	16	4		29	\$ 4,453
	4.3 - Recommend Design Standards	2	6	8	2	4	22	\$ 3,494
5	Model Development	6	56	58	72	12	204	\$ 30,004
	5.1 - Utilize Existing Model Base and Update		8	16	32		56	\$ 7,224
	5.2 - Populate Model with SCADA & Demand Data		8	16	8	4	36	\$ 5,036
	5.3 - Assign Elevations to Model			2	8		10	\$ 1,130
	5.4 - Apply Pump Curves and Control Settings to Model		8	8	16	8	40	\$ 5,304
	5.5 - Model Reconciliation	6	32	16	8		62	\$ 11,310
6	Hydraulic Analysis	4	56	40	20		120	\$ 20,168
	6.1 - Existing System Analysis	2	16	24	12		54	\$ 8,310
	6.2 - Ultimate System Analysis	2	40	16	8		66	\$ 11,858
7	Capital Improvement Plan	6	24	36	32		98	\$ 14,834
	7.1 - Description of Improvements	2	8	16	24		50	\$ 6,914
	7.2 - Cost Estimates	2	12	16	4		34	\$ 5,570
	7.3 - Prioritize and Categorize Improvements	2	4	4	4		14	\$ 2,350
8	Routine Maintenance Plan	4	8	20	6	2	40	\$ 6,244
	8.1 - Review Existing Maintenance Plan	2	4	4	2		12	\$ 2,132
	8.2 - Provide Maintenance Recommendation	2	4	16	4	2	28	\$ 4,112
9	Master Plan Report	20	80	144	56	16	316	\$ 48,732
	9.1 - 70% Draft Submittal	8	32	80	40		160	\$ 23,616
	9.2 - Address Comments & 90% Draft Submittal	4	24	40	8	8	84	\$ 13,028
	9.3 - Address Comments & Final Submittal	8	24	24	8	8	72	\$ 12,088
Total		131	346	402	272	52	1203	\$ 196,195

¹ The amounts indicated for each individual project task are estimated budget amounts and accordingly the actual amounts may be more or less than shown. However, the total budget will not be exceeded without written authorization from the City of Imperial.

